Far North Queensland Regional Plan 2009–2031

planning for a stronger, more liveable and sustainable community

Queensland Government

Far North Queensland Regional Plan 2009–2031

Prepared by:
The Honourable Paul Lucas MP, Deputy Premier and Minister for Infrastructure and Planning in accordance with the *Integrated Planning Act 1997* (IPA), Section 2.5A 15.

With assistance from:
Department of Infrastructure and Planning

In partnership with:
The Far North Queensland Regional Organisation of Councils (FNQROC).

In consultation with:
The Far North Queensland Regional Coordination Committee (FNQRCC).

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Release notes

The *Far North Queensland Regional Plan 2009–2031 (2009)* is released by the regional planning Minister in accordance with the *Integrated Planning Act 1997*, section 2.5A.15. It is a statutory instrument under the *Statutory Instruments Act 1992*.

The regional plan applies to the Far North Queensland (FNQ) regional local government areas as defined under IPA, section 2.5A.2. It replaces the Draft Far North Queensland Regional Plan 2025 (the draft plan) released by the regional planning Minister on 9 May 2008. The draft plan was subject to community consultation and comment up to 8 August 2008. A consultation report, which summarised the issues raised during the consultation period was released on 28 October 2008. Another round of limited consultation on four strategic issues identified in the consultation report concluded on 28 November 2008.

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 FNQ for more than 20 years.

The regional plan represents an agreed Queensland Government position on the future of FNQ. Any plans, policies and codes being prepared or amended by state agencies or local governments must reflect and align with the regional plan.

The regional plan does not commit or pertain to commit any government, industry or community organisation to implement, fund or otherwise resource specific activities or programs.

Maps indicated as being for information only are intended to represent general concepts for the purpose of broad-scale regional planning. These maps do not and are not intended to identify or give attributes or rights, including land use or development rights, to specific land parcels.

The information on the maps is not intended for reference to specific parcels of land, and should be treated as indicative only and subject to ongoing refinement. In some parts of the mapping one layer obscures another, this is not meant to imply any order of importance or priority. The Department of Infrastructure and Planning, does not guarantee or make any representations as to the accuracy or completeness of the information shown on this map, nor does it accept any responsibility or liability for any loss or damage arising from its use.
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The *Far North Queensland Regional Plan 2009–2031 State Planning Regulatory Provisions (FNQ Regulatory Provisions or regulatory provisions)* and associated FNQ regulatory maps form a standalone document to support the regional plan and should be read in conjunction with it. The regulatory provisions and the regulatory maps have effect from the date of gazettal of the FNQ Regulatory Provisions. Any development applications that were lodged between 9 May 2008 and the date that the FNQ Regulatory Provisions were gazetted, will be subject to the draft State Planning Regulatory Provisions (Regional Plans) May 2008.

For more information on the regional plan and regulatory provisions contact:
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Copies of the regional plan and regulatory provisions (including the regulatory maps) are available:
online www.dip.qld.gov.au
for viewing at most council chambers, libraries and customer service centres within the local government areas covered by the regional plan
for free on CD-ROM or in hard copy by contacting Department of Infrastructure and Planning offices in Cairns and Brisbane
by phoning 1300 721 194
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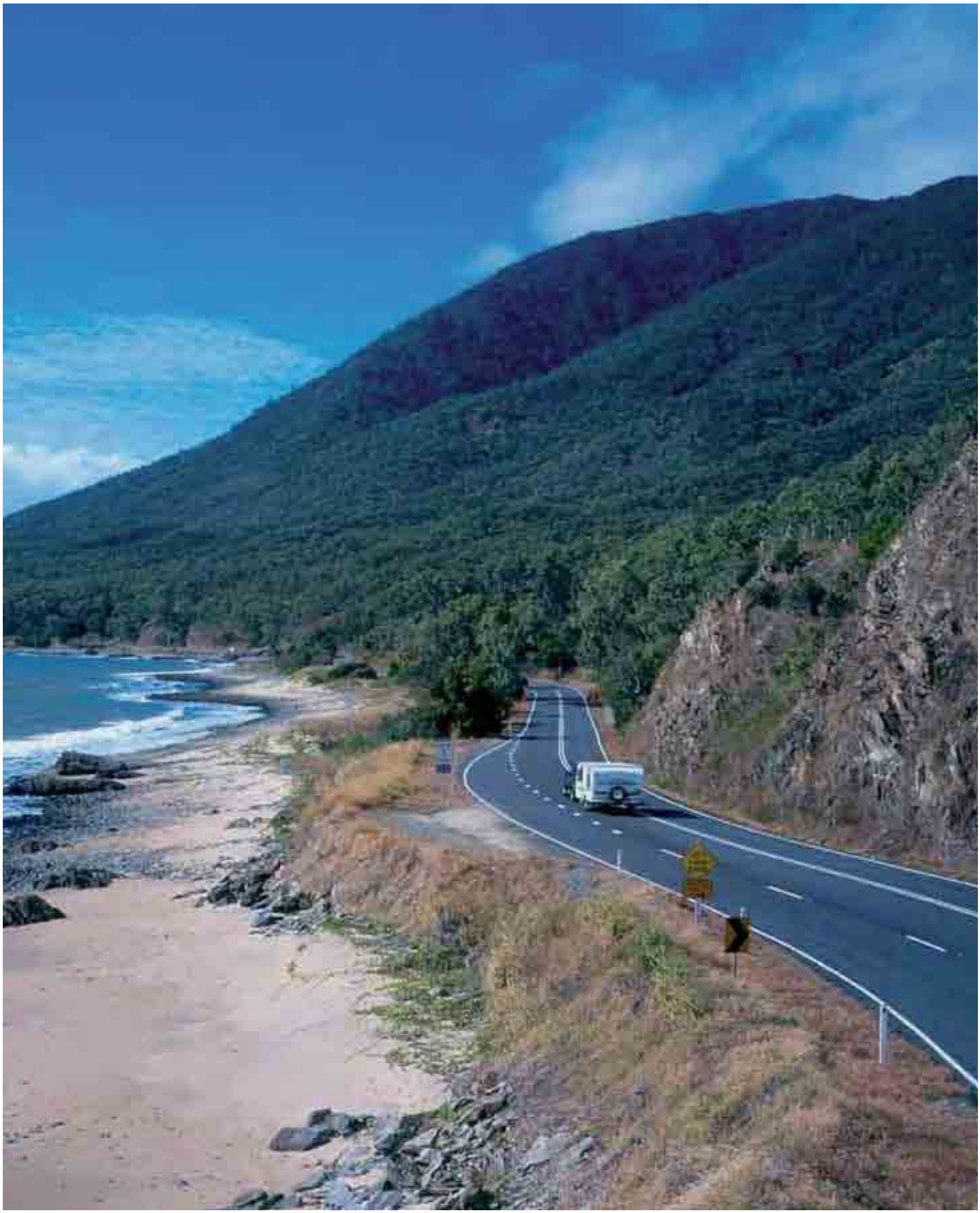


Contents

PART A—Introduction

Background

Queensland is the fastest growing state in Australia and the most regionalised. The Queensland Government has developed an active regional planning program to address land use planning issues at a regional level, and prepare regional communities for the challenges of rapid population growth, climate change and oil vulnerability.

The Far North Queensland (FNQ) Regional Plan was developed under section 2.5A.15 of the *Integrated Planning Act 1997* (IPA). It is the first statutory regional plan to be developed outside a major metropolitan area. It builds on the former non-statutory regional plan—*Far North Queensland Regional Plan 2010* (FNQ 2010).

While managing urban growth is a key focus, the FNQ Regional Plan also addresses various rural and natural resource management issues with a land use planning component.

Effect of the statutory regional plan

The FNQ Regional Plan is the pre-eminent plan for the FNQ region and, therefore, takes precedence over all other planning instruments. The effect of the FNQ Regional Plan is established under section 2.5A of IPA as follows:

- For the purpose of the IPA, the FNQ Regional Plan is a state interest.
- Under the IPA, if there is any inconsistency with another plan, policy or code, including another planning instrument made under state legislation that affects the FNQ region, the FNQ Regional Plan prevails.
- If state agencies prepare or amend any plans, policies and codes that relate to the FNQ region, they must reflect and align with the regional plan.
- All planning development decision-making processes must account for the regional plan's regulatory provisions, including
  - state government plans and policies
  - local government planning schemes, and other plans and policies
  - planning and development processes under the IPA
  - development applications made under the Integrated Development Assessment System (IDAS) of the IPA.

In the development assessment process, applying the regional plan's associated regulatory provisions must occur in addition to any matters applying under a planning scheme for assessing and determining a development application.

If a local government planning scheme materially contradicts the regional plan, the planning scheme must be amended to align with the regional plan.

The FNQ Regional Plan also guides state agencies on future infrastructure and service provision through Queensland Government–agreed principles, policies and programs.

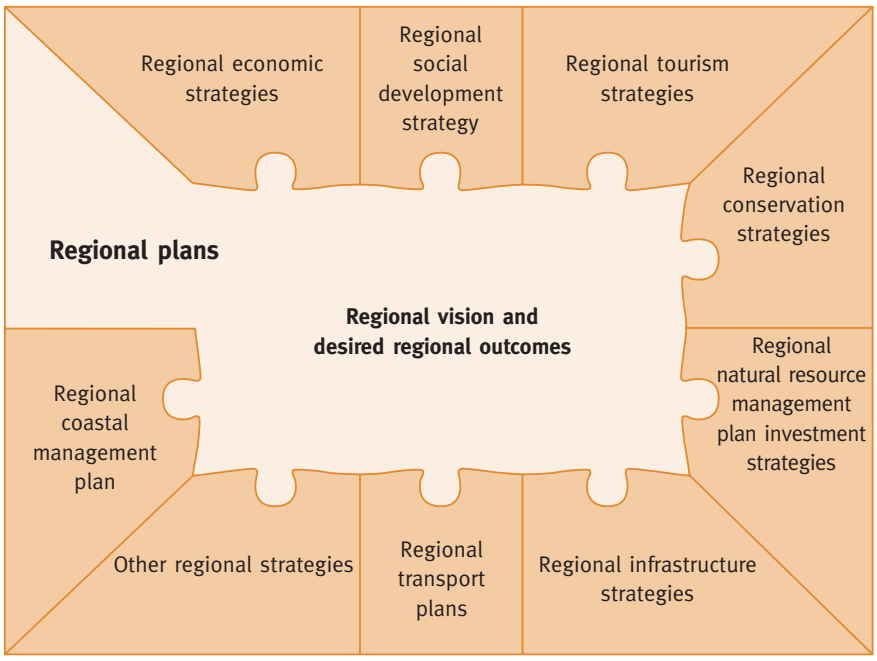
The FNQ Regional Plan does not replace economic, environmental or social plans, such as conservation or tourism plans, or strategies. It incorporates regional planning policies that directly and indirectly achieve economic, environmental and social outcomes to accomplish ecological sustainability for the FNQ region and, in doing so, meet the objective of section 1.2.1 of IPA.

In developing the regional plan, policies with a land use planning focus that the government can deliver through a range of IPA planning tools, such as planning schemes, priority infrastructure plans and IDAS, have been named land use policies.

The plan's desired regional outcomes cannot be achieved through the above land use planning mechanisms alone. To achieve the region's vision, the Queensland Government must implement the strategies and actions of aligned plans, such as the natural resource management plan for FNQ. The specific policies that will be implemented through these aligned plans have been named aligned strategies.

Figure 1 illustrates the relationship of the FNQ Regional Plan with other statutory and non-statutory planning programs.

Figure 1: Relationship of regional plan with other plans and strategies



Purpose of the regional plan

The Queensland Government intends the FNQ Regional Plan to guide and manage the region's development over the next 20 years to realise its 2020 vision for Queensland (Department of Premier and Cabinet, 2008) and address key regional environmental, social, economic and urban objectives.

Over the past decade, the FNQ region has experienced continuous growth in resident population, visitation, economic activity and urban development. The region's tourism industry expansion and the national trend of population movement north along the Australian east coast have driven this growth.

The government expects this growth to continue over the next 20 years and beyond. The regional plan will help manage this growth in the most sustainable way to protect and enhance the quality of life in the region.

This plan incorporates a comprehensive policy framework making decisions about managing the region's development during this growth period.

The plan:

- identifies sufficient developable land to meet future growth
- prepares for growth in a way that progresses the Queensland Government's Q2 objectives, and protects and enhances the region's natural environment, biodiversity and natural resources
- resolves conflicts between state and local planning policies at a regional level

Figure 2: FNQ location

- establishes sound urban development principles that support a compact, well-serviced and efficient urban form
- promotes infrastructure delivery that is timely and cost–effective, and supports community and economic development
- maintains and enhances the quality of life for existing and future communities
- ensures the region's growth is responsive to the possible impacts of climate change and oil vulnerability
- promotes safe, efficient and effective movement of goods and people, and facilitates access to places and services
- supports a viable and diverse economy with well-located employment opportunities and economic activity centres
- gives the private sector greater certainty of future growth and development objectives when they make business investment decisions.

Planning period

The FNQ Regional Plan provides a framework with which to manage growth, change, land use and development in the region to 2031.

The plan also considers the region's potential management needs beyond 2031 to ensure planning decisions made during the plan's life do not compromise our ability to meet longer term needs. The plan's land allocation for future urban growth is based on projections of medium growth to 2031.

Preparation

The regional plan was prepared jointly between all levels of government and key community groups. The interests of these groups are represented on the FNQ Regional Coordination Committee (FNQRCC), which was involved in the development of the regional plan. The function of a regional coordination committee is to advise the state, through the regional planning Minister, about the development and implementation of the region's statutory regional plan. In addition, key stakeholder groups and government agencies contributed through the FNQ Regional Organisation of Councils, advisory panels, a technical working group and planning workshops.

The preparation of the regional plan drew upon the widely consulted and accepted FNQ2010, endorsed by state and local government through the former FNQ Regional Planning Advisory Committee in 2000. The plan also relied on current desired environmental outcomes contained in FNQ local government planning schemes as well as other state and local government plans, policies and strategies.

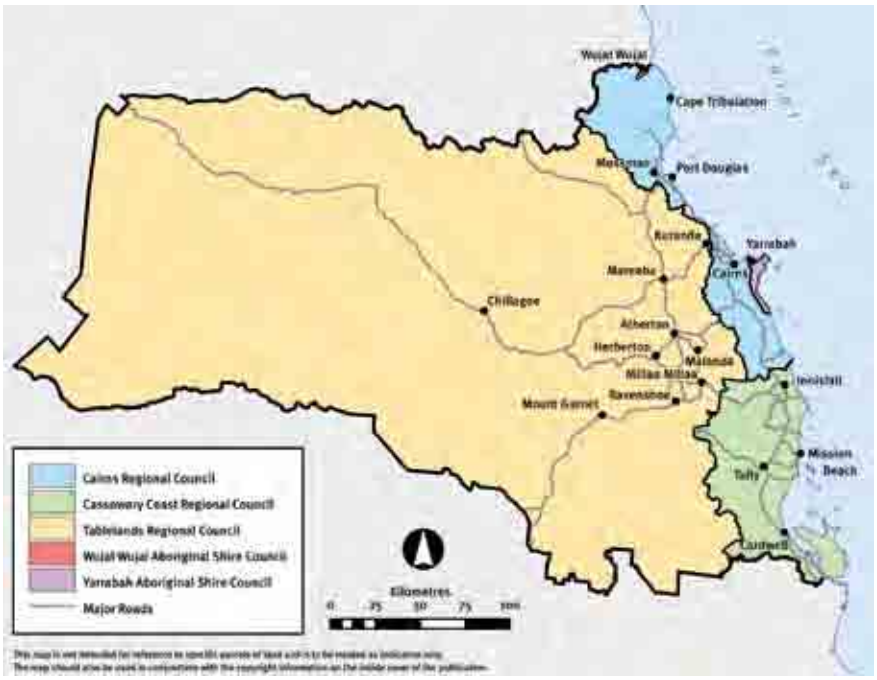
The regional plan has been prepared in accordance with chapter 2.5A of IPA which sets out the required procedure that the regional planning Minister must follow in preparing and making the regional plan.

The key steps include:

- preparing a draft plan
- making the draft plan available for public consultation for a minimum of 60 business days
- considering all properly made submissions on the draft plan
- consulting with the FNQRCC
- The public consultation period for the draft regional plan concluded on 8 August 2008, resulting in over 960 submissions. A consultation report was released on 28 October 2008 that summarised the issues raised during the public comment period. Additional targeted consultation of four strategic issues identified in the consultation report concluded on 28 November 2008. The strategic issues were:
  - biodiversity conservation
  - protection of waterways and water quality
  - provision of industrial land
  - subdivision and boundary realignments outside the urban footprint.

All properly made submissions were carefully analysed and the draft plan substantially amended to take into account many of the suggestions raised through the consultation process. This final regional plan responds to the community's concerns and aspirations for the region.

Figure 3: FNQ region



Application, implementation and review

The regional plan is a statutory instrument under the *Statutory Instruments Act 1992* and a planning instrument under IPA. It has a direct effect in its own right, and indirect effect through the amendment and alignment of local government planning schemes and state plans and policies.

Local government planning schemes are the primary mechanisms for planning and managing the urban form. Maximising the performance of planning schemes and applying 'best practice' will be critical to providing efficient and effective regional communities.

The desired regional outcomes and policies of the regional plan will be monitored and used in the review of the plan which will be undertaken at least every 10 years. The regional planning Minister can amend the regional plan at anytime under the procedures set out in IPA. Performance indicators will be developed to measure the progress in implementing the plan's policies, regulations and targets.

The Far North Queensland region

The regional plan applies to the following local government areas within the FNQ region:

- Cairns Regional Council
- Tablelands Regional Council
- Cassowary Coast Regional Council
- Yarrabah Aboriginal Council
- Wujal Wujal Aboriginal Council.

For the purposes of the regional plan, the FNQ region also includes Queensland offshore waters that are part of those local government areas.

Other FNQ regional planning documents

The FNQ Regional Plan is supported by a range of documents including:

- the FNQ Regulatory Provisions
- the Far North Queensland Infrastructure Plan
- guidelines and codes associated with regional policies and regulatory provisions
- maps indicating areas where specific regional policies or regulatory provisions apply.

The status of these documents will vary depending on the enabling legislation and planning intent applied in the FNQ Regional Plan. The planning intent and statutory basis is set out in each document.

Definitions

Terms used in this document are as defined in IPA, unless otherwise specified in the regulatory provisions or glossary.

Structure of the plan

The regional plan is set out under the following sections:

- Part A Introduction—The preamble describes the statutory nature of the regional plan and its process of evolution from the current non-statutory plan. The plan's purpose, land use planning focus and its relationship with other plans is highlighted, as are the processes for plan preparation, public consultation, implementation and review, as required under IPA.
- Part B Regional vision—The vision statement encapsulates the desired future for the region.
- Part C Strategic directions—The strategic directions describe a new approach based on managing rather than responding to growth and establish the broad principles that must be adopted to achieve the vision.
- Part D Regional land use pattern—This section describes the preferred settlement pattern to accommodate growth for the next twenty years, provides guidance at a subregional level on the timing and location of growth, establishes the land use categories for the region and includes the justification for and application of the regulatory provisions.
- Part E Regional policies—The underlying principles, desired regional outcomes and regional policies described in this section will guide land use planning decisions in FNQ and must be reflected in all relevant plans, policies and codes being prepared or amended by state or local governments in FNQ. The regional policies are also considered a state interest with respect to consideration of local government planning schemes and development applications under IPA. Explanatory notes are provided to assist in the understanding and interpretation of the policies. Aligned strategies are those that will assist in achieving the region's vision and desired regional outcomes, but are delivered through a range of mechanisms outside IPA.
- Part F Implementation, monitoring and review—The governance arrangements for implementation and review of the regional plan are described in this section.

PART B—Regional vision

The Queensland Government has framed a 2020 vision in *Toward Q2: Tomorrow's Queensland*. The vision focuses on five key themes for Queensland communities:

- Strong—create a diverse economy powered by bright ideas
- Green—protect our lifestyle and environment
- Smart—deliver world-class education and training
- Healthy—make Queenslanders Australia's healthiest people
- Fair—support a safe and caring community.

The vision for the FNQ region builds on these elements and defines the community's long-term aspirations for the region. It is a conceptual image of the type of lifestyle the community wishes to have in 20 years and protect for future generations. The vision is written as though time has moved forward and describes the region as it will be in 20 years time.

The regional vision for Far North Queensland is for a stronger, more liveable and sustainable community, where:

- the region's outstanding biodiversity and stunning landscape features are valued and protected.
- residents of Far North Queensland have a strong sense of community and feel safe, happy, healthy and able to enjoy a relaxed tropical lifestyle in a range of settings from urban to rural. The region continues to grow in prosperity and attracts national and international residents and visitors who seek a variety of lifestyle, employment, investment and holiday choices.
- the economy is vibrant, robust and diverse, firmly based on the principles of ecologically sustainable development.
- Cairns forms the heart of an efficient and sustainable settlement pattern that protects natural, cultural and agricultural values, addresses the need to reduce greenhouse gas emissions and is supported by high level infrastructure, facilities and services.
- the Traditional Owners of the region and their cultural values are acknowledged and respected.
- people are well educated, well informed and resilient to the anticipated impacts of climate change and oil vulnerability.

FNQ regional vision explained

The vision was developed through contributions from many people, including members of the FNQ Regional Coordination Committee, technical working group and advisory panels and the community.

The FNQ region's outstanding natural areas, particularly the Wet Tropics and Great Barrier Reef World Heritage areas, are protected and preserved. The region is known for its best practice environmental and natural resource management. Through understanding and appreciating the ecological processes that support the region's natural environment, governments, industry and the community are willing to work cooperatively to conserve these natural values.

The region's thriving economy benefits the whole community and offers a wide range of business and employment opportunities. Diversification into alternative and innovative technologies in areas such as health, education, manufacturing, natural resource management and tropical expertise build on the region's historical economic drivers and maximise economic prosperity across the region. The tourism economy is innovative, diversified and equitably distributed and the region continues to be recognised as a world class ecologically sustainable tourism destination.

People are happy and healthy and have a strong sense of community, identity and place. The Traditional Owners of the region are recognised and respected and a harmonious mix of cultures ensures the region offers a multicultural experience. The region's unique Aboriginal and Torres Strait Islander cultural diversity is protected and progressed, and artistic and cultural experiences that bring people together are abundant.

The community is well-informed and educated. People recognise the impacts climate change and rising oil prices will have on the region, and are well prepared for these. The region comprises a diversity of built communities surrounded by open green spaces which complement the tropical climate and natural surrounds, with building designs catering for the extreme climatic events currently experienced and projected for FNQ. The location of industrial and employment centres maximise access to markets while minimising negative impacts on the community and environment. The region has become resilient to the impacts of oil shortages and, in doing so, has created opportunities for economic gains and stronger and healthier communities.

Appropriate planning ensures that urban and rural communities are linked by an efficient and affordable transport network which gives people real choices about how they travel. A range of sustainable and affordable housing options are available which enhance tropical character and are accessible to services and community facilities. These features encourage walking and cycling; healthy lifestyle options which minimise overall transport demand, and reduce the region's vulnerability to oil scarcity and climate change impacts.

PART C—Strategic directions

During the next 20 years, around 100 000 new residents are expected to migrate to the region, including so-called sea changers, tree changers and rain changers. If the FNQ vision is to be achieved, the region will require major changes in the way planning for growth and development occurs. The regional plan's approach is based on managing rather than responding to growth.

The strategic directions outlined in this section describe a number of underlying regional planning principles and take into account current and new drivers for growth. Planning and development must be responsive to these strategic directions to ensure the long-term ecological sustainability of the region.

Planning for climate change and oil vulnerability

FNQ is vulnerable to the impacts of climate change and is likely to experience sea level increase, hotter dry seasons and wetter wet seasons under projected climate change scenarios. Petrol prices are also expected to dramatically increase as global oil supplies diminish. Such changes will adversely affect tourism, agriculture and the tropical lifestyle of the region. The impacts of climate change and rising fuel prices must be addressed and planned for. The future growth of FNQ must ensure that greenhouse gas reductions are achieved in order to mitigate the impacts of climate change. Strategies must be developed to adapt the region and build its resilience to such impacts.

Protecting regional landscape and rural production values

The FNQ region has diverse landscape features, which include important World Heritage areas and productive farm lands. These features provide substantial environmental, economic and social benefits to the region and underpin the region's liveability. The regional landscape features include areas of high ecological significance, rural production areas, renewable energy resources, extractive and mineral resources, areas of high scenic amenity, outdoor recreation and landscape heritage value. These areas must be protected from inappropriate urban development, urban sprawl and fragmentation so that the regional landscape and rural production values are maintained.

Urban consolidation and land use efficiency

The current trend to accommodate population growth in new low density suburbs on the fringes of existing towns is impacting on the natural environment and is wasteful of land and infrastructure resources. This trend cannot continue. Clearly defined areas to accommodate future urban growth requirements for the next 20 years need to be identified and protected.

The primary objective in the short term is to ensure future growth in the region predominately reflects the existing urban network and consolidates growth within and immediately adjacent to existing centres. Within future urban growth areas, there must be a move toward affordable housing and more energy efficient and sustainable communities, with a more compact urban form and higher densities in appropriate areas. The trend toward an ageing population and smaller households should be reflected in the range of new housing provided. Increasingly, new growth areas, including Mount Peter and its prospective centres which are a part of the Southern Growth Corridor, will play a significant part in providing opportunities to realise such needs. These considerations will need to become key aspects of the careful planning for such areas.

Higher densities must be achieved in appropriate areas to support the most efficient use of infrastructure and services and facilitate the development of viable communities. This will result in reduced travel times, energy usage and pollution emissions. Planning for urban consolidation will also improve levels of accessibility to services and have fewer detrimental impacts on the region's environmental and natural resource values. New isolated developments and low-density developments such as rural residential should be controlled.

Integrating land use planning with infrastructure planning

Improved integration and coordination of land use planning, infrastructure provision and economic activities at both the regional and local level will significantly improve the efficiencies of providing for future urban development needs. The regional plan determines the preferred settlement pattern for the next twenty years and sets the framework for coordinated and timely delivery of infrastructure and services to support the predicted population growth.

Prior to making commitments about regionally significant infrastructure, the government will undertake a thorough assessment of the infrastructure needs that provide the best overall outcomes for the community. The regional plan will be the dominant planning document for the region. State and local government plans, strategies and policies must be consistent with the regional plan to ensure development meets the needs of the projected population to 2031 and beyond.

Maintaining connectivity

Transport networks are critical to connect people and employment centres across FNQ. The corridors that make up a transport network allow for movement by private motor vehicle, public passenger transport, walking and cycling. The connectivity that this provides is vital for strong communities and economies. A well connected transport network can also save travel time and cost and reduce greenhouse gas emissions through reduced vehicle travel. Long term planning is required to identify and protect transport corridors from inappropriate development.

Improved connectivity is also vital for conservation of the region's rich biodiversity. Fragmentation of areas of ecological significance needs to be avoided. These areas include wildlife corridors of state and regional significance that provide north-south and east-west connections. Wildlife corridors are critical for climate change adaptation, particularly for vulnerable species such as the endemic rainforest mammals and cassowaries. The regional plan identifies strategic rehabilitation areas that would link or increase the resilience of wildlife corridors. The protection and restoration of waterways is also an important strategy for improving ecological connectivity and subsequent resilience to climate change.

Promoting a dynamic, robust and diversified economy

While the region's economy is growing, there has been underlying reliance on tourism and rural production as the economic foundation for the region. The structure of the regional economy is now changing with significant growth in the mining and minerals sector to the west of Mareeba.

While the existing industries need to be promoted and supported, new industries must also be encouraged to diversify the economy. Greater support should be given to entrepreneurial thinking, clean technology industries, increased integration into the global economy and increased productivity through improved skills development.

These goals will be achieved through planning and designing mixed-use developments that foster collaboration and networks between business, industry and research institutions. This will ensure the region is better able to create new jobs and accommodate future population projections with high levels of diversified employment opportunities.

Limiting growth pressures on the coast

Coastal development is vulnerable to a range of natural hazards such as erosion, sea level rise, storm tide inundation, flooding or cyclones. Significant benefits will be gained by reducing growth pressures in sensitive and high risk coastal areas. Adequate urban opportunities and housing options must be provided in other less sensitive parts of the region.

Decreased development pressures on coastal areas will come from the combined effect of consolidating growth in the Cairns area, encouraging higher densities through infill and redevelopment, promoting decentralisation in appropriate areas and providing future growth opportunities on the Tablelands. These measures will also provide good outcomes when considering the effects of climate change and sea level rise.

Planning for emergency situations

Urban planning needs to consider the potential for major emergency situations (floods, cyclones, fires, traffic accidents etc.) which will require efficient delivery of emergency services to the community or the evacuation of residents and visitors in affected areas. It is imperative that planning for urban growth includes provision of emergency access between communities and between the coast and the Tablelands and considers the need for emergency routes, utilities and services required in times of disaster.

Maintaining and enhancing the tropical character through land use planning and innovative design

The FNQ region is unique and this is reflected by the number towns and villages in the region that provide distinct and individual local experiences to residents and visitors. Urban development should not result in urban sprawl or loss of the region's character and identity.

Innovative and sustainable building designs that increase energy and water use efficiency whilst reflecting the region's tropical flavour should be adopted through improved building codes and style guides.

Facilitating growth in Mount Peter

The greatest proportion of growth to the region will occur in the Cairns area. While there will be significant growth in existing areas through infill and redevelopment, the Mount Peter Master Planned Area, immediately east of Edmonton and the area west of the Bruce Highway between Edmonton and Gordonvale, will accommodate the majority of the new

growth in Cairns. Mount Peter represents some of the last remaining developable land in the Cairns area that has relatively few natural constraints. It is important that development ensures the best outcomes with respect to:

- dwelling densities
- infrastructure
- public transport
- employment
- industry and commercial needs
- urban open space needs
- greenhouse gas emissions and oil vulnerability.

The Mount Peter Declared Master Planned Area presents an opportunity to investigate and plan for innovative housing and centres-based facilities, services and integrated housing options. This includes a range of centres which provide viable opportunity for transit orientated communities to develop around those centres and minimise the need for private car-based travel outside of the population catchment that is serviced by the centre. The planning and development of Mount Peter should take priority over any other new large greenfield development proposed in the region and should account for the strategic outcomes sought by this regional plan.

New development is expected to provide for a wide range and choice of housing types, location and densities to meet the needs of the community and to complement priority infrastructure investment, particularly for roads, public transport and transit oriented communities.

Achieving employment self-containment

Local employment self-sufficiency must be encouraged to maximise local containment of the workforce. This means people live and work in the same general area, rather than spending long periods of time commuting between their home and place of employment. Achieving higher levels of self-containment results in reduced travel distances and expenses, reduced congestion on the overall network, and reduced greenhouse gas emissions. It is also retains greater levels of expenditure in the local economy and fosters a stronger sense of community. The social vision of self-containment is of a people who mostly live, work, shop, and recreate in a defined area.

The concept of self-containment is also likely to have implications for the future role of regional centres within the context of their intended population catchments and in the manner in which they relate and impact on each other. This will notably be the case with regard to large adjoining regional activity centres and will need to be carefully considered in the future planning of proposed centres in the region so that the strategic aims of the regional plan are not compromised.

Planning for large growth areas, such as Mount Peter, should include strategies to encourage local employment self-sufficiency and maximise resultant local containment of the workforce.

PART D—Regional land use pattern

The population of FNQ is projected to increase by nearly 100 000 people over the next 20 years. Various urban settlements will grow as a result, with increasing demand for urban services and infrastructure. Growth will need to be carefully managed to maximise land use and infrastructure efficiency, address demographic changes and protect the region's unique landscape and rural production values. This requires a good understanding of the rate of population growth, the age structure of the population and their housing preferences.

The regional plan sets a regional land use pattern based on a preferred pattern of development. This defines the desired future spatial structure that best achieves the desired regional outcomes. Subregional narratives provide further detail on future growth directions across the five local government areas.

The FNQ Regulatory Provisions designate all land in the region into one of three regional land use categories: regional landscape and rural production area; urban footprint; rural living area. The intent of each regional land use category is described in this section.

Population trends

Population growth

FNQ has grown by nearly 110 000 people over the last 30 years, from 111 320 in 1976 (DIP, 2007a) to 220 687 in 2006 (DIP, 2008a). The largest absolute increase was in Cairns Regional Council, with moderate increases in other local government areas (figure 4).

In 2006 Cairns Regional Council contained about two thirds of the region's resident population (67 per cent), followed by Tablelands Regional Council (20 per cent), Cassowary Coast Regional Council (13 per cent), Yarrabah Aboriginal Shire Council (1 per cent) and Wujal Wujal Aboriginal Shire Council (< 1 per cent) (figure 5).

FNQ is one of the fastest growing regions in the State. Between 2001 and 2006 FNQ had the third highest growth rate and absolute growth outside SEQ (DIP, 2008a). This growth has largely been driven by net migration, with natural increases remaining relatively steady (figure 6).

Current population projections for FNQ to 2031 are shown in figure 7 and table 1. High, medium and low series projections have been prepared to consider a range of potential future outcomes.

Figure 4: Resident population growth in FNQ since the 1980s
(* FNQ Region includes Yarrabah and Wujal Wujal Aboriginal Shire Councils)

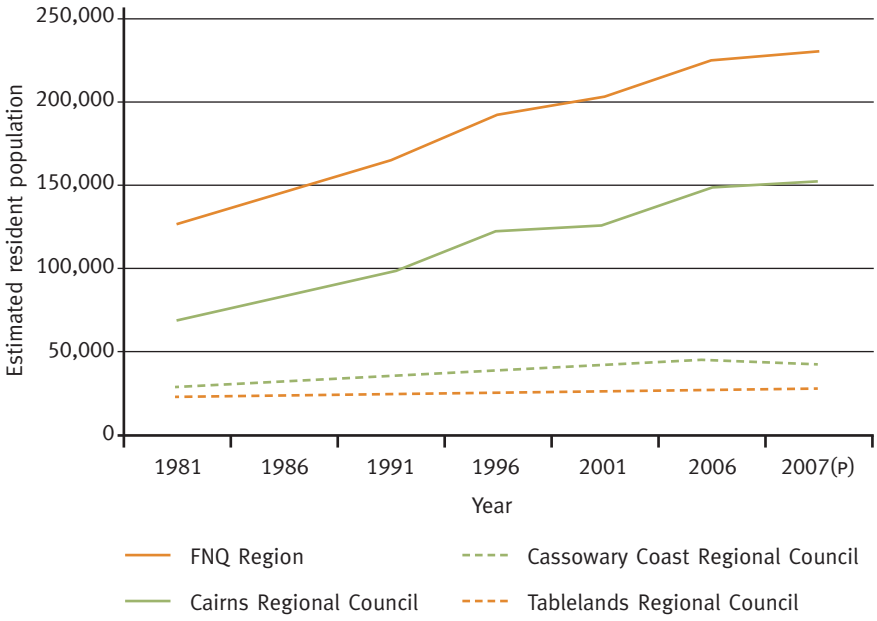


Figure 5: FNQ resident population distribution by local government area
(as at 2006, Source: DIP, 2008b)

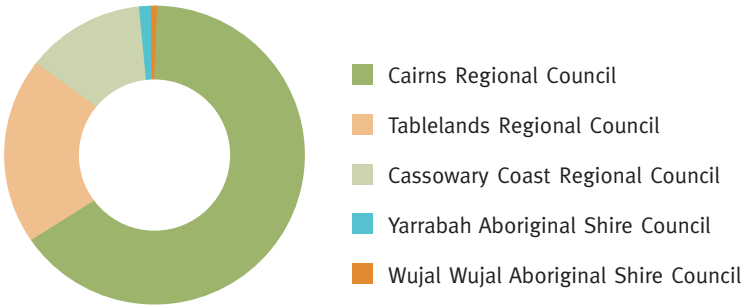


Figure 6: Components of population change in FNQ
(* excludes Yarrabah and Wujal Wujal Aboriginal Shire Councils, Source: DIP, 2008b)

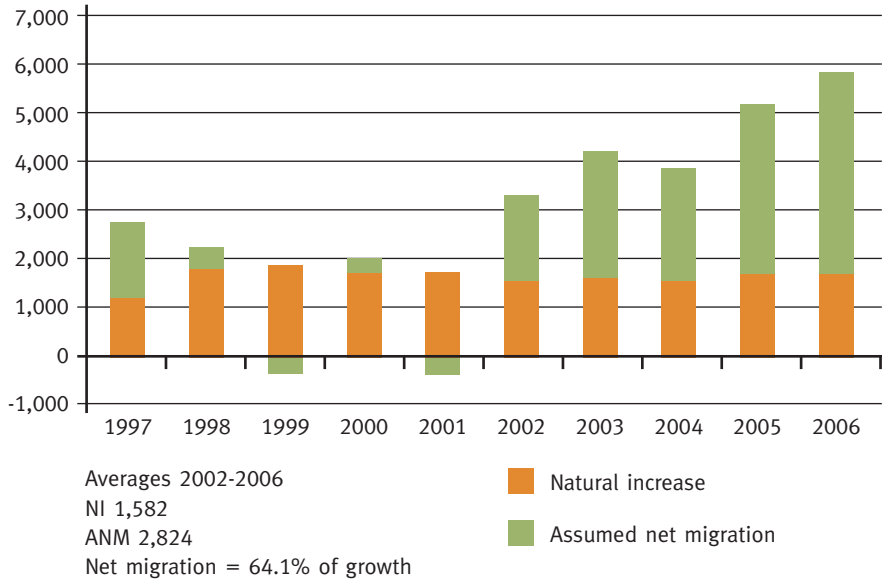


Figure 7: FNQ resident population projections to 2031
(* excludes Yarrabah and Wujal Wujal Aboriginal Shire Councils, Source, DIP, 2008b)

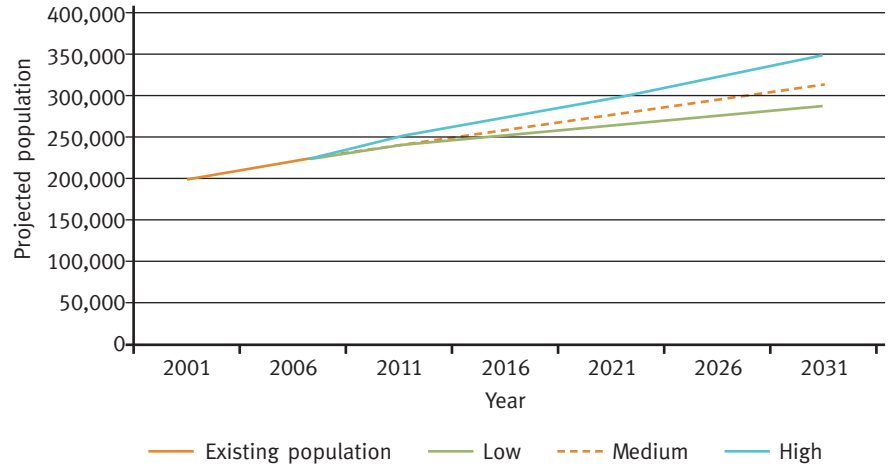


Table 1: FNQ resident population projections

Year	Projected population		
	Low	Medium	High
2011	240 359	244 517	250 169
2016	252 729	261 690	274 503
2021	263 712	277 621	297 830
2026	275 085	293 930	321 733
2031	287 231	311 411	347 291

(* excludes Yarrabah and Wujal Wujal Aboriginal Shire Councils, Source, DIP, 2008b)

The regional plan is based on the medium series projections. This is considered the most likely outcome based on current information, and may translate to approximately 4 000 people moving into the region each year.

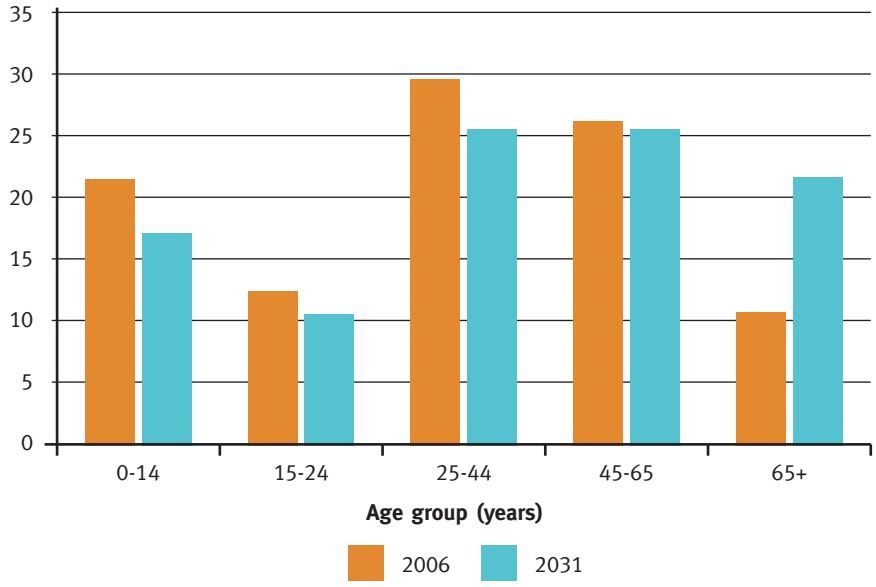
Aboriginal and Torres Strait Islander population

Aboriginal and Torres Strait Islanders form an important component of FNQ's population. In 2001 17 533 persons, or around one eleventh of FNQ's population, were of Aboriginal or Torres Strait Islander descent (DIP, 2007a). This is almost three times the state average and four times the national average.

In 2001 more than half of the region's Indigenous population were living in Cairns or Yarrabah. More than 80 per cent of Yarrabah and Wujal Wujal's population were Indigenous. Mount Garnet, Ravenshoe, Herberton, Mossman, Kuranda, Innisfail, Mareeba, Babinda, Tully and Gordonvale also had significant Indigenous populations.

Preliminary population projections have been undertaken specifically for Yarrabah and Wujal Wujal; however, the data is limited and likely to underestimate the full population. Opportunities for improved data collection are currently being investigated.

Figure 8: Age distribution in FNQ 2006 and 2031
(* excludes Yarrabah and Wujal Wujal Aboriginal Shire Councils, Source: DIP, 2008b)



Non-resident population

Visitors, and in particular tourists, comprise a significant proportion of the region's population. FNQ is one of the most popular tourist destinations in Australia. In 2001, 18 per cent of the region's population were visitors. Most visitors were from Australia (58 per cent), although the high proportion of overseas visitors (42 per cent) was nearly double the state average. Around 80 per cent of visitors were staying in Cairns Regional Council, primarily at Cairns and Port Douglas (DIP, 2007a).

Accommodation preferences appear to differ between Australian and overseas visitors. Australian visitors tend to stay in private dwellings such as detached houses, flats, units, caravans and other temporary accommodation, whereas overseas visitors tend to stay in non-private accommodation.

Fly in-fly out mine workers also contribute to the non-resident population. Some mines within the region have semi-permanent accommodation camps however these are unlikely to be recorded as the permanent place of residence. Some FNQ residents alternatively fly in-fly out to mines in other region's or countries, such as Papua New Guinea.

Age distribution

The age distribution of the region is overall similar to the state average, the greatest difference being a higher proportion of people aged 25-44 and a lower proportion of people over 65 (DIP, 2007a). This largely reflects the age distribution of Cairns Regional Council, and associated employment and education drivers.

Parts of the Tablelands Regional Council and Cassowary Coast Regional Council have a low proportion of people aged 15-24 and a high proportion of people older than 45 relative to the state average.

The age distribution of Yarrabah and Wujal Wujal Aboriginal Shire Councils reflect the higher birth rates and shorter life expectancies of Indigenous communities. These communities have a high proportion of people aged 0-14 and a low proportion of people over 45 relative to the state average.

Overall the region's population is ageing in line with Australia's ageing population. While the number of people in each age group will increase with population increases, the relative proportion of people aged 65 and over is expected to double in the next twenty years (figure 8).

Household size

The average household size in FNQ in 2006 was 2.5 persons per dwelling, similar to the state average of 2.6 (DIP, 2008c). Household size was higher in separate houses (2.8) than other dwellings (2.0). Household size is expected to decrease over time with the ageing population and trend towards smaller, particularly single person, households. Current household size projections for FNQ are shown in table 2.

The trend towards decreasing household size means that housing demand will continue to be higher than population growth in FNQ. An estimated 50 000 new dwellings will be required in Cairns, Tablelands and Cassowary Coast Regional Council's based on current information.

Household sizes in Yarrabah and Wujal Wujal are relatively high, averaging 5.8 and 4 people per dwelling respectively in 2006 (ABS, 2007). Overcrowding and home ownership are significant issues in these communities.

Residential land supply

There is a substantial amount of broadhectare land in the region. Broadhectare land includes land currently zoned for residential purposes that is greater than 0.25 hectare, vacant, suitable and potentially available. Of the 8415 hectares of broadhectare land in the region, nearly two thirds (5462 ha) is zoned for rural residential purposes, and 80 per cent of this is within Tablelands Regional Council. Urban residential land comprises 72 per cent, 12 per cent and 55 per cent of the total broadhectare land available in Cairns, Tablelands and Cassowary Coast Regional Council respectively. Table 3 shows the amount of land available for residential development across the region.

Table 2: Household sizes in FNQ local government areas (2006 and 2031)

Local Government Authority	Average Household Size	
	2006	2031
Cairns Regional Council	2.51	2.31
Tablelands Regional Council	2.52	2.30
Cassowary Coast Regional Council	2.56	2.27

(Source: DIP, 2008b)

Table 3: Broadhectare land available for residential development

Local government authority	Residential land supply		
	Urban residential (ha)	Rural residential (ha)	Total residential (ha)
Cairns Regional Council	1586	613	2199
Tablelands Regional Council	605	4561	5166
Cassowary Coast Regional Council	582	468	1050
Total (ha)	2773	5642	8415

(Source: DIP, 2007d)

Residential land supply is dynamic and more than 20 years supply has been provided through the regional plan. Supply is influenced by a range of factors such as population growth, demographic changes, availability of broadhectare land, rural land fragmentation, dwelling densities, urban land use mix (e.g. demand for industrial land), regional activity centres network and environmental, social and economic policy objectives of the regional plan. Population projections, availability of broadhectare land and various other inputs are being monitored to ensure adequate land supply (refer to Part F).

Recent studies indicate that rural lands in FNQ have been significantly fragmented by past subdivisions, particularly in coastal areas such as the Cassowary Coast (DIP, 2007e). Table 4 shows the total number of lots and percentage of lots that are less than 40 hectares in size in each former local government area.

Table 4: Extent of subdivision by lots (40 ha minimum lot size)

Former local government authority	Total number of lots	Number of lots <40 ha (per cent)
Atherton	1392	1208 (87)
Cairns	2943	2692 (92)
Cardwell	2449	1964 (80)
Douglas	1582	1379 (87)
Eacham	1727	1023 (59)
Herberton	2069	1443 (70)
Johnstone	4279	3972 (93)
Mareeba	6113	4614 (76)
Total	**22 554**	**18 295 (82)**

(Source: DIP, 2007e)

Around 20 per cent of the region's population currently live outside of urban centres and localities on rural lands. The existing range of rural lot sizes provides flexibility for agricultural practices, for example by enabling production of alternative crops with smaller land use requirements.

The regional plan seeks to protect rural lands (see section 2.6) and avoid low density rural residential development (see section 4.6). Future urban land supply has been provided in close proximity to existing urban centres in order to promote compact form, access to services and infrastructure, and land use efficiency.

Implications of growth for the region

The projected growth in the region could result in significant impacts—both positive and negative. The benefits could include an increase in business activity and diversity, better employment opportunities, and significant improvements in the capacity to support major new services and facilities. However, if growth is unmanaged, it could result in environmental degradation, deterioration of natural resources, increased social problems, diminishing amenity and liveability and costly infrastructure provision (FNQ NRM et al, 2004, Lehrer, 2009).

There is likely to be greater demand for diversity of housing forms to match the needs of a changing household structure, particularly an increase in one and two person households across all adult ages. The workforce will need to increase its level of reliance on older workers if it is to maintain the labour force required to support the region's economy. These factors are likely to significantly and increasingly influence changes in preferred housing types and location especially in relation to their proximity to services, employment, and leisure opportunities. This is likely to increase the importance of urban design that is based on promoting transit orientated communities in the region and the reliance upon strong, viable activity centres. Such opportunities are expected to be greatest, especially in the areas yet to be developed including the Southern Growth Corridor.

Throughout the region, there has been significant fragmentation of rural land and bushland largely brought about by rural residential development on the urban fringe and in rural areas. Continued heavy reliance on rural residential settlement patterns will not enable the development of optimal residential areas in terms of access to services, efficient use of infrastructure, and protection of natural areas and farm resources. Such development is not a sustainable residential solution for the region in the long term.

As the population increases, there will be increased pressures on services and infrastructure, such as arterial roads, public transport, potable water, local parks, shops and community facilities. While the current and planned power generation capacity of the region is adequate, average household demand for energy is increasing. Total energy consumption by households, industry and transport also generates significant amounts of greenhouse gases, which need to be reduced. The current use of water and energy in the region is also increasing. Efficiency gains from use of water and energy are required to reduce demand, minimise impacts on the environment and to meet the challenges of projected climate change.

Addressing these matters will be a major task for the region as whole, some of which can be achieved either directly or indirectly through regional planning.

Preferred pattern of development

The preferred pattern of development for FNQ defines the future spatial structure of towns and villages across the region that best achieves the regional vision. The preferred pattern of development:

- provides sufficient land to accommodate the projected population growth while promoting compact urban form and associated infrastructure efficiencies
- consolidates urban growth around existing urban settlements, in particular the principal and major regional activity centres and future transit oriented communities
- allocates additional land around specific centres to stimulate growth of those centres
- locates growth areas close to employment nodes and avoids establishment or expansion of satellite towns and suburbs
- promotes flexibility and innovation in urban design and the role of activity centres in accommodating future residents in closer proximity to employment opportunities, services and leisure opportunities
- avoids expansion into areas with significant regional landscape or rural production values or land use constraints.

Approximately two thirds of the region's population growth, or around 70 000 people, will be accommodated within Cairns. Two thirds of this, or up to 50 000 people, will ultimately live within the Mount Peter Master Planned Area. Regional towns outside Cairns will also continue to grow, with the main growth occurring in Mareeba, Atherton, Innisfail, and to a lesser extent Tully. Opportunities for future growth have also been provided in various smaller urban centres.

By accommodating growth in this way the regional plan will help protect regional landscape and rural production values, increase self-containment, improve energy efficiency, facilitate mitigation and adaptation to climate change and oil vulnerability, and yield a range of other significant community benefits.

Subregional narratives

Subregional narratives have been prepared for each local government area in FNQ (figure 3) to broadly describe the intended future growth pattern and associated transport infrastructure priorities. The subregional narratives link strategic planning at state, regional and local levels. Local government planning schemes will be reviewed to reflect the subregional narratives planning intent.

The regional land use categories and regional activity centre network referred to in the subregional narratives are described more fully elsewhere in the regional plan.

Cairns Regional Council

Resident population in 2006: 147 538
Estimated resident population in 2031: 222 640
Principal regional activity centre: Cairns CBD
Major regional activity centres: Smithfield, Edmonton, Earlville,
District regional activity centres:
Mossman, Port Douglas, Clifton Beach, Redlynch, Mount Sheridan, Manunda, Westcourt, Mount Sheridan, Gordonvale

Cairns

The vibrant, tropical regional city of Cairns forms the urban heart of FNQ. It has the largest population in the region and plays a vital role in servicing the needs of the broader FNQ community. As a tourist destination of international significance, it provides a landing point for visitors attracted by the region's superlative and diverse natural environment. The associated blend of cultures and focus on relaxed, outdoor living set amongst the tropical, highly scenic wet tropics rainforest and coastal ranges, make Cairns a great place to live and visit.

Significant economic activity and employment is focused in an around the Cairns central business district (CBD). Supporting regionally significant infrastructure includes a major air and sea port, hospital and international conference centre. The CBD will evolve into a tropical transit oriented community with "Cairns-style" character strongly reflected in design and function. Future growth of the CBD will primarily occur via infill and redevelopment on appropriate sites.

Outside the CBD, Cairns suburbs will maintain their unique character and become increasingly self-contained through development of localised economies, centred within regional activity centres and walkable local activity centre networks. Transit oriented communities will also develop to provide attractive and desirable alternatives to car travel.

Cairns currently has a large supply of broadhectare land (see Part D), with much of this located at Palm Cove, Trinity Beach, Smithfield, Redlynch, White Rock and Edmonton. This supply is however likely to be exhausted before 2031. An increasing proportion of dwellings will therefore need to be supplied by infill and redevelopment focused in and around regional activity centres and public transport nodes.

Future growth options for Cairns are limited, with the mountain ranges, Barron and Mulgrave River flood plains, Trinity Inlet, and the coast constraining future development. The hill slopes of Cairns, northern beaches and area east of the Bruce Highway between Edmonton and Gordonvale contain significant regional landscape values that should be should be protected.

The Mount Peter Master Planned Area is a key regional growth area and will accommodate the bulk of the region's future growth (see section 4.3). Development in Mount Peter will be concentrated in urban nodes, be separated and linked by open space, and have efficient transport networks. An ultimate population capacity of up to 50 000 should be planned for the Mount Peter Master Planned Area in the longer term. This level of expected development and the strategic requirement to provide a high level of employment opportunity within the Mount Peter Master Planned Area will require a viable network and range of strong activity centres. This may include a major regional activity centre as well other levels of activity centres. The implications of the range of activity centres, including those which may be identified for outside the Mount Peter area, which are likely to best meet the overall strategic aims of the regional plan will need to be carefully considered as part of any structure planning considerations and broader development controls for the area and adjoining areas. The full development of Mount Peter and surrounding areas are likely to go beyond the life of this regional plan.

Cairns' major regional activity centres, and to a lesser extent district regional activity centres, will play an increasingly important role in terms of employment and economic activity. A significant proportion of new jobs will need to be provided in the Edmonton and Smithfield major regional activity centres. The Edmonton major regional activity centre will be located west of the Bruce Highway and be supported by industry facilities located east of the Bruce Highway. Additional areas of industrial land are currently being investigated east of the highway to address shortage of supply.

The Smithfield major regional activity centre contains a number of elements, including the James Cook University (JCU) and existing shopping centres and businesses. There are opportunities in the future for additional centre activities, a technology park at JCU and additional industrial land. Integrating these current and future elements to best serve the surrounding communities is a key priority.

North coast

The north coast contains significant areas of good quality agricultural land and areas of high ecological significance, including large areas of the Daintree and other Wet Tropics World Heritage rainforest. The former Douglas shire contains important scenic and ecological values that attract significant tourism. Growth north of Cairns is constrained by a lack of appropriate infrastructure.

Mossman and Port Douglas are the largest urban settlements north of Cairns city. These two district regional activity centres are in close proximity but have different roles and function that result in economic synergies. Mossman is the main administrative, service, agricultural and industrial centre in the north, whereas Port Douglas has a stronger tourism focus.

Mossman currently contains a large supply of broadhectare land. Future development within the district regional activity centre will need to generate additional employment opportunities. Further growth at Mossman and Port Douglas will be constrained given ecological values and infrastructure constraints.

The small Aboriginal settlement at Mossman Gorge has been included within the urban footprint. The regional plan seeks to facilitate the subdivision of existing houses into individual allotments in this locality and future planning scheme amendments to an urban or village zoning.

The coastal settlements of Wonga, Newell and Cooya Beach and various other small urban centres and rural residential developments, including significant areas north of the Daintree River are not intended to grow or increase in density. These communities generally have very low levels of infrastructure provision and significant coastal and environmental constraints. Tourist development north of the Daintree River should be small-scale, nature-based and protect the unique ecological values and local character.

A significant area of land is subject to Indigenous Land Use Agreements (ILUAs) with the Eastern Kuku Yalanji people. ILUAs are about the use and management of land and waters, and are made between the Traditional Owners and other people. The Eastern Kuku Yalanji ILUA includes an area of Aboriginal freehold for their use in providing some residential and economic potential (NTTT, 2007).

The regional plan seeks to facilitate the objectives of this and other ILUAs in the region. The land in the Eastern Kuku Yalainj ILUA is currently in the regional landscape and rural production area but has been identified as an area requiring further investigation (see section 3.8).

South coast

Gordonvale is a small sugar town south of Cairns centred on the Mulgrave mill. It contains a district regional activity centre supported by a diversity of social infrastructure. It is a heritage town with significant character housing, open spaces and sport and recreation facilities. Any future urban development within Gordonvale should seek to avoid land use conflicts with existing industrial uses (the mill) and maintain Gordonvale's unique character.

Scope also exists for the Gordonvale area to become serviced by higher order activity centres in the region. This is likely to be the case as the Southern Growth Corridor grows and its centres assume a stronger and increasing capacity to service the surrounding areas. This matter should be taken into account when considering the size, scale, location and potential roles of centres in the Mount Peter area as well as other centres that may have an effect. The ongoing viability of the existing district activity centre at Gordonvale needs to be also considered.

Growth will be constrained in the predominantly agricultural production areas south of Cairns. Minor areas of additional land have been included within the urban footprint at Babinda, and options for redevelopment of state land are also being investigated. It is not intended that Goldsborough Valley, Miriwinni, Bramston Beach and other smaller settlements will grow.

Tablelands Regional Council

Resident population in 2006: 43 507
Estimated resident population in 2031: 55 848
Major regional activity centres: Atherton, Mareeba
District regional activity centres: Ravenshoe, Malanda
Village activity centres: Kuranda, Yungaburra, Tolga, Herberton
Rural activity centres: Dimbulah, Chillagoe, Mount Garnet, Millaa Millaa

Mareeba

The town of Mareeba has significant future growth potential. It has ample industrial land, a vibrant main street, and a pivotal role in agriculture and mining. Mareeba is relatively unconstrained by good quality agricultural land or areas of ecological significance and is well serviced by road, rail and air infrastructure. It is the primary urban centre for rural families living in the expansive west and north-west parts of the region (figure 2).

The growth of Mareeba is likely to depend on the development of its industrial land for future economic activities in the major regional activity centre. Mareeba and surrounding areas will continue to play an important role in natural resource management and agricultural science. An increasing proportion of dwellings in Mareeba will need to be supplied by infill and redevelopment focused in and around the regional activity centre. This will help sustain the town's social infrastructure and local business economy.

Mareeba has a considerable broadhectare land supply. There is a key regional growth area on the south side primarily consisting of Future Residential zoned land. This area will need to be master planned to ensure appropriate dwelling densities, infrastructure sequencing, transport, open space and waterway networks. An area of Future Residential zoned land on the north side of Mareeba will be protected in the regional landscape and rural production area while investigations into the potential for a local road network and other aspects of suitability are being undertaken.

Additional areas are being investigated for potential future expansion of the Mareeba airport and associated aviation industries to the west.

Atherton

The nearby town of Atherton provides a high level of commercial and retail opportunities as well as industrial, educational, professional and social facilities. It has an important rural industry function and character and is in the "golden triangle"—one of the richest and most diverse agricultural areas in the State.

The long term urban growth option for Atherton has historically been south of the town extending to Hastie Road. While there are clear infrastructure efficiencies in promoting such development contiguous with the established urban area, it will result in the significant loss of good quality agricultural land. A future southern bypass of Atherton, extending between Herberton Road and the Atherton International Club could potentially provide a more appropriate edge to development. An alternative greenfield development option is to be investigated to the west of the town of Tolga on elevated land that is of poorer soil quality.

The Tablelands Regional Council will investigate options to establish whether it would be more desirable to accommodate future growth south of Atherton or near Tolga. The assessment will consider good quality agricultural land, relative benefits associated with a consolidated urban form, access to services and facilities and integration with the established urban area, the efficiency of servicing development and impact on the character of Tolga. The urban footprint may need to be amended once this investigation has been completed.

An increasing proportion of dwellings in Atherton will need to be supplied by infill and redevelopment focused in and around the regional activity centre to minimise further encroachment of residential development on good quality agricultural land. Character housing will be protected to maintain Atherton's unique character.

Other centres

Kuranda is a small village activity centre set in the rainforest. It will continue to have a specialist tourism focus and focal point for the Cairns—Kuranda railway and Skyrail cable car. Densities will be kept low and building heights limited to maintain the village character and significant areas of ecological significance.

Myola has been the subject of significant investigation and consultation in the past, including the Myola Feasibility Study in 2001, the Myola Planning Study completed in 2006 and detailed studies on the Kuranda Range Road. Myola is not considered necessary for urban development in the life of this regional plan. This position reflects the following considerations:

- there is sufficient land available elsewhere throughout FNQ to accommodate growth within the life of this plan
- the plan's policies promote consolidation of population growth around existing urban centres that provide employment and service opportunities
- oil vulnerability and rising fuel process have implications on satellite suburbs

- the proposed urban development at Myola could not be accommodated by the existing Kuranda Range Road and the cost of upgrading the Kuranda Range Road between Cairns and the northern Tablelands is unaffordable in the short to medium term, in a regional and state-wide context.

With its favourable climate, good soils and ample water, the Atherton Tablelands has the potential to provide food security for the region, particularly in the face of climate change and oil vulnerability. There are aspirations for tourism to broaden its base, with a shift from day trips from Cairns to longer stays. Tourism activities will focus on the natural environment, mining and outback experiences. Tourist attractions such as the Savannah Way tourist drive and Misty Mountain walking trails will draw increasing numbers of tourists inland from the coastal plain.

Additional growth has been provided in a number of smaller urban centres to facilitate economic and social aspirations on the Tablelands. This includes Malanda, Ravenshoe, Tolga, Yungaburra, Millaa Millaa, Dimbulah and Chillagoe.

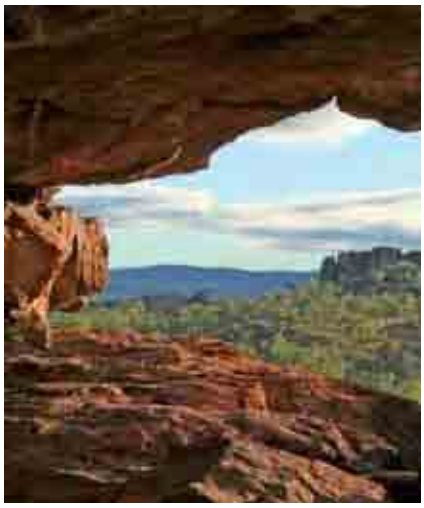
Malanda will consolidate its role as a district regional activity centre and accommodate modest growth. It is intended that this centre will increase in role and function over the life of the plan to support the population of the southern Tablelands and reduce the need to travel to Atherton. The nearby centre of Yungaburra is intended to continue its function as a village in keeping with its strong character values. Urban development on the broadhectare land in Yungaburra will need to be staged appropriately and reflect the unique form and character of the existing town.

Additional growth has been provided for at Millaa Millaa to help boost growth and economic activity. Revitalisation of the town's main street and development of new drivers will be important in attracting and retaining further growth. This may include the development of food industries and nature based attractions.

Ravenshoe is a key urban centre for the southern Tablelands. This centre supports the rural, tourism and mining activities in the area and provides a range of housing and lifestyle choices and supporting facilities. Ravenshoe will play an increasingly important role in servicing the south-west portion of the Atherton Tablelands. Development of the key regional growth area near the primary school will need to ensure appropriate access to and from the existing town.

Herberton is constrained by topography, tenure and lack of sewerage infrastructure. Any future development will be low key and is intended to reinforce the community focus of the town. This centre supports the rural, tourism and mining activities occurring in the area.

The rural centres of Chillagoe, Dimbulah and Mount Garnet are remote from larger urban centres and provide a range of services to the surrounding rural areas. These centres are likely to increase in importance in supporting mining activity. It is intended that mine workers accommodation be included within the existing towns where possible, or be physically connected where this is not possible. Local sports fields, markets and other activities provide important opportunities for mine workers and the local community to interact socially.



Cassowary Coast Regional Council

Resident population in 2006: 29 642
Estimated resident population in 2031: 32 923
Major regional activity centres: Innisfail
District regional activity centres: Tully
Village activity centres: Cardwell, Mission Beach

Innisfail

Innisfail is the largest town in the Cassowary Coast and southern part of the region. It contains a major regional activity centre that bustles with economic and social activity set amongst the lively art deco heritage and attractive hilly streetscapes. The activity centre contains a diverse range of commercial, retail and administrative functions and provides a wide range of urban services to the local urban and rural communities. Innisfail is currently the only regional town in FNQ serviced by public transport.

Population growth has been slow in Innisfail over the past decade, particularly after Cyclone Larry in 2006. Flooding constraints associated with the Johnstone River also limit future growth opportunities. A significant area of broadhectare land has been included in the urban footprint near Reynolds Road to stimulate future growth and economic activity. This is a key regional growth area that will need to be master planned to ensure an appropriate local road network, dwelling mix and density, and achievement of appropriate environmental outcomes.

An increasing proportion of future growth in Innisfail will need to be accommodated by infill and consolidation, particularly within the regional activity centre. Additional infrastructure may be required to achieve higher densities. Urban development will need to protect and reflect the unique character, form and feel of the town.

Innisfail has the potential to become a multi-modal transport hub in the future. It is well connected in terms of road, rail and port infrastructure and provides a strategic linkage between Cairns and Mourilyan Port, the Atherton Tablelands and Mourilyan Port, and Cairns to Townsville south. Additional, suitable industrial land will be identified near Innisfail to create new employment generators. There may be opportunities to link the transport and industrial functions. Potential sites will be investigated in the vicinity of Mundoo and Wangan.

Tully

Tully is a small sugar town south of Innisfail centred on the Tully mill. It contains a district regional activity centre with a large concentration of business, employment and administrative functions. Primary industry activities including agriculture, horticulture, beef cattle, fishing, quarrying and forestry make an important contribution to the local economy.

A significant area of broadhectare land has been included in the urban footprint north of Tully to accommodate future growth. This is a key regional growth area that will need to be master planned to ensure an appropriate local road network, dwelling mix and density and achievement of appropriate environmental outcomes. Opportunities to protect and revegetate strategic rehabilitation areas, encourage cycling and walking and provide alternative housing options in these areas are to be investigated prior to the area being developed.

Other centres

Mission Beach is located near Tully and consists of North Mission, Wongaling and South Mission Beaches. It occupies a narrow strip of land between the Wet Tropics and Great Barrier Reef World Heritage areas and contains significant areas of ecological significance including essential habitat of the endangered southern cassowary. The survival of this ecologically important species is critically threatened by continuing habitat loss and car strikes.

The urban footprint at Mission Beach will be constrained to minimise future impacts on ecological values, coastal hazard risks and loss of the village character. Densities are to be kept low and building heights limited to avoid increasing traffic generation and urban impacts. Future development should occur around village nodes and avoid linear form, maintain and restore cassowary habitat, and ensure good corridor connectivity.

Much higher levels of self-containment will need to be achieved in Mission Beach to avoid travel to Tully and Innisfail. Additional local employment generators will need to be developed based on protection and enjoyment of the natural environment, and appropriate development of a district regional activity centre at Wongaling Beach. Car travel will need to be managed and traffic impacts on cassowaries mitigated.

Further south is the town of Cardwell. Growth in this small coastal settlement should be constrained to the existing urban area given land and infrastructure constraints. This will also help protect important ecological values including essential habitat of the mahogany glider and marine species and further risks from coastal hazards. The state land west of Cardwell is currently being used for forestry and its future use will depend on allocation under the *Land Act 1994*.

There are a number of small coastal and rural settlements in Cassowary Coast where the natural or rural surrounds contribute to valued lifestyle choices. These include Bingil Bay, El Arish, Etty Bay, Flying Fish Point, Kurrimine Beach, Mena Creek, Mourilyan and South Johnstone. These settlements generally have limited infrastructure and urban services and are not intended to grow significantly.

The small Aboriginal settlement at Jumbun south-west of Tully has also been included within the urban footprint. The regional plan seeks to facilitate the subdivision for existing houses to individual allotments in this locality with subsequent planning scheme amendments to change the current zoning to a more appropriate urban or village zoning.

Yarrabah Aboriginal Shire Council

Resident population in 2006: 2599
Estimated resident population in 2031: 3001
District regional activity centre: Yarrabah

Yarrabah is an Aboriginal community situated on Deed of Grant in Trust land in the valley between Mission Bay and Oombunghi Beach, approximately 10 kilometres directly east of Cairns. A large urban footprint has been designated for Yarrabah. It is not intended that all land within the urban footprint will be used for urban purposes. The allocation of land within the urban footprint for a range of purposes, including residential, open space and conservation, will be determined as Council prepares a planning scheme for the area.

Yarrabah is a district regional activity centre due to the range of services provided by the Council (see section 3.8 and 4.2). Most employment in the area is provided through government services, council and the Community Development and Employment Program. Current community services include the health centre, hospital, child care/ welfare centre, schooling, fire brigade and state emergency services, recreational facilities, youth centre, aged care hostel, women's centre, community hall and church. Various community service operations provide employment and training opportunities for locals such as a radio station, market garden, tea tree plantation, and the Menmuny museum.

Housing availability, infrastructure and services will continue to improve in this shire to provide the community with appropriate facilities and economic development opportunities. Housing growth will be accommodated along the Oombunghi Road corridor to ensure efficient infrastructure utilisation. This is consistent with the desired coastal outcome of the *Wet Tropical Coast Regional Coastal Management Plan* (EPA, 2003a).

Wujal Wujal Aboriginal Shire Council

Resident population in 2006: 361
Estimated resident population in 2031: 417
Rural activity centre: Wujal Wujal

Wujal Wujal is an Aboriginal community situated on Deed of Grant in Trust land in the Bloomfield Valley on the northern side of the Bloomfield River. It was once the site of a mission. The existing community facilities in this rural activity centre (see section 4.2) include council offices, supermarket, post office, library and traditional knowledge centre, police, community hall, child care, a primary health care centre with helipad and other facilities such as a sports oval, church and primary school nearby.

The Council is the main employer although natural attractions such as the Bloomfield Falls, Roaring Meg Falls and other historic and Aboriginal cultural heritage attractions support a fledgling tourist trade. The nearby Eastern Kuku Yalanji Traditional Owners are likely to progress economic development in some form in the future as their community development planning processes are completed (see section 3.8).

The Wujal Wujal township is expected to grow over the next twenty years, with new housing required to ease overcrowding in existing poorly designed housing and to cater for higher than average population growth. The township is constrained by steep slopes, proximity to the river and flooding during times of extremely high rainfall during the wet season.

The urban footprint for Wujal Wujal includes the current township, and preferred expansion area on the south side of the Bloomfield River towards the historic locality of Degarra. It is not intended that all of the expansion area be used for urban purposes. The allocation of land for housing and other purposes within the urban footprint will be determined by the Wujal Wujal Council during planning scheme development and/or review that also takes into account constraints of the land.

Transport infrastructure

The Far North Queensland Infrastructure Plan provides a review of Queensland Government infrastructure projects and planning activities, and reports on their alignment with the FNQ Regional Plan. Planning and delivery of infrastructure at the regional, district and local levels also occurs through a number of aligned plans, such as the Roads Implementation Program, the Cairns Integrated Public Transport Plan, the FNQ principal cycle network plan and priority infrastructure plans.

Regional FNQ

The provision of transport infrastructure between remote communities of the north and west of the region to the densely populated plains of Cairns presents a range of challenges. The steep escarpment between the Atherton Tablelands and the coastal plains make large scale improvements to transport links very expensive. The Wet Tropics World Heritage area listing and environmental concerns of this and other areas creates additional constraints and expense. There are also challenges in managing road freight to ensure road space is shared effectively between heavy vehicles, passenger vehicles and other road users.

Significant volumes of freight are generated from the rich Atherton Tablelands agricultural land and pastoral holdings west and south of it. Produce is sent to markets and ports on the coast and to the south. Areas west of the Atherton Tablelands (part of the north east minerals province) are rich in minerals deposits. Following the recent growth in mining activity in the North East Minerals Province, exploration in this area is expected to stimulate increased production of mineral ore and concentrate. The roads in the area are generally not designed for this level of freight and accelerated deterioration is likely along with increased safety concerns.

The long term growth of mining is expected to place significant demands on the transport system, particularly roads, used for transporting ore from mine to processing plant and on designated highways for transport of concentrate or metals to the coast for further processing or export, primarily in Townsville. The rail infrastructure in the province is not sufficiently accessible to mining activity to accommodate the growth of mineral related tonnages. There is concern about the capacity of the current road system to accommodate the existing and potential transport of mineral product. Appropriate planning to address demand is important and should consider all transport modes.

The arterial road network outside of Cairns will be a key component in the management of growth over the next twenty years. In particular, the threshold capacities of the existing Bruce Highway, the Kennedy Highway (Kuranda Range) and Captain Cook Highway are major issues for region. Managing traffic volumes on these and other arterial roads within the region may require an innovative approach to planning, design and funding in order to preserve regional environmental and community values.

The Captain Cook Highway between Palm Cove and Port Douglas is constrained and will continue to be maintained as a major scenic route. The car ferry crossing on the Daintree River will continue to limit development north of the river, while the road between the Daintree and Bloomfield Rivers will continue to be a scenic/adventure drive, adjacent to the Wet Tropics World Heritage area.

The significant biodiversity and scenic values of the Mission Beach area are also recognised. The access roads are adjacent to the Wet Tropics World Heritage area and through roads are adjacent to the Great Barrier Reef Marine Park. These will primarily remain as scenic tourist drives and to service existing residential areas and identified resort areas.

The Department of Main Roads (DMR) intends to undertake sufficient investigation to identify and preserve the available options for transport corridors. Any additional corridors may be very expensive and involve social and environmental impacts. The land use and transport strategies of the regional plan need to be fully implemented, so that the need for any additional corridors is delayed as long as possible.

Kuranda Range Road

Investigations have been undertaken regarding substantially improving the road link between Cairns and the Northern Tablelands. A significant consideration was infrastructure cost and affordability of major infrastructure projects. After extensive investigation, planning and community consultation DMR identified a four-lane surface route with extensive bridging as the best solution, determined the footprint, obtained necessary environmental approvals and revised cost estimates based on these factors. However, in 2007, the upgrade was assessed as being unaffordable in the short to medium term. Improvements to the road will, however, occur in the interim.

Cairns

To ease increasing traffic congestion, Cairns requires well integrated transport options that provide attractive alternatives to private car travel. As the last city on the Bruce Highway supply chain, Cairns is dependent on an efficient transport network to support continued growth in the economy.

The overall efficiency of existing and future transport infrastructure relies on land use options that provide densities of population and intensities of land use activities to make public transport viable. To be successful the public transport system must integrate with surrounding land uses, and provide reliable pedestrian connectivity. The development of future centres within greenfield growth areas, including the Mount Peter Master Planned Area, are likely to play a significant role in achieving this strategic aim and will need to be reflected in consideration of the planning for such centres.

The Cairns Integrated Public Transport Plan 2005 (Queensland Transport, 2005a) recommended:

- the introduction of transit/bus lanes and high-frequency bus services in the medium term
- bus lanes on key corridors and bus priority at busy intersections throughout Cairns and high frequency bus services in the long term.

The Queensland Government has commenced planning for a new transit network for Cairns. The network will identify dedicated public transport spines to connect the length and breadth of Cairns.

The *Southern Cairns Integrated Land Use and Transport Study 2002* (SCILUTS) (Sinclair Knight Merz, 2002) was a priority action of the *Far North Queensland Regional Plan* (2000). SCILUTS made recommendations about land use and transport to meet the demands of urban growth south from Cairns to Gordonvale, subject to targeted land use and transport planning outcomes being achieved, including:

- an upgraded highway with priority for public transport vehicles and off road shared commuter cycle paths in the corridor, plus an advanced public transport system
- the Bruce Highway, and the local road network should include provision for public transport, pedestrian and cycle movements
- in the short to medium term the public transport system is likely to be on-road, bus-based transport. In the long term the road-based system should supplement an advanced public transport system. The available corridors for an advanced public transport system are the main line railway corridor, the Bruce Highway corridor, and sections of the sugarcane railway corridors
- an efficient arterial road network is to be provided from the northern end of the Bruce Highway motorway into central Cairns to provide a high level of connectivity to key freight, employment and service centres
- a high-speed, high-capacity, north–south cycleway is to be provided from Gordonvale to the city centre.

In order to achieve the potential community benefits of this settlement pattern, developers and local and state government agencies must commit to the principles of transit oriented communities in Cairns. It will take time to plan for and achieve public transport networks and residential densities around the transit oriented community, and the early delivery of key transit oriented community sites will require policy and infrastructure support.

Priority actions to achieve the FNQ preferred settlement pattern

Short-term (0–5 years)

In the short-term there will be consolidation of the existing development activities and establishment of a framework for medium and long term development. The following activities need to be achieved in the short term:

- establishing the Regional Plan Implementation Group to support the Regional Coordination Committee
- amending planning schemes to ensure consistency with the regional plan
- preparing an infrastructure plan to support the regional plan
- preparing priority infrastructure plans for priority infrastructure areas
- preparing transport network plans for Tablelands and Cassowary Coast Regional Councils
- monitoring residential land activity
- preparing a structure plan for the Mount Peter Master Planned Area which maximises the ability to walk to activity centres, minimises the need for private vehicle-based travel between centres and facilitates transit orientated communities through the urban design of its centres
- preparing master plans for the first staged release of land in the Mount Peter Master Planned Area
- investigating alternative future urban areas at Atherton and Tolga and reviewing the regional plan and regulatory provisions if necessary
- undertaking further investigation and planning to accommodate growth in Mareeba to support its role as a major regional activity centre, including master planning for the southern growth area
- investigating future urban areas on the northern side of Mareeba and reviewing the regional plan and regulatory provisions if necessary
- preparing a master plan for the Edmonton major regional activity centre
- preparing a master plan for the Smithfield major regional activity centre
- implementing the Industrial Land Demand and Supply Study
- investigating additional industrial land sites at Edmonton, Smithfield and Innisfail
- developing economic and employment strategies for regional activity centres and key industry sectors
- investigating the potential for a transport hub to be located near Innisfail
- establishing an intergovernmental transit oriented communities taskforce to progress the planning of transit oriented communities (see Part E, section 8.1)
- planning for a new or refurbished transit mall in the Cairns CBD
- budgeting* for, and delivering public transport infrastructure in Cairns particularly around key transit oriented communities
- planning and developing increased densities around the proposed public transport nodes at Smithfield and Edmonton (west of the Bruce Highway) to create transit oriented communities
- identifying additional transit oriented communities on the Cairns transit network
- budgeting* for future public transport infrastructure in Cairns
- planning, design and construction of reticulated sewer and sewage treatment plant at Malanda
- developing regional monitoring framework to assess key environmental, social and economic indicators
- investigating opportunities for port activities at Mourilyan.

Medium-term (5–15 years)

In the medium term there will be increasing consolidation of the preferred pattern of development and a focus on developing the regional activity economic strategies. The following activities need to be achieved in the medium term:

- budgeting* for, and delivering the public transport infrastructure around the key transit oriented communities sites at Edmonton, Palm Cove, Redlynch, Earlville and Gordonvale
- planning for and developing future transit oriented communities in Cairns, including at Palm Cove, Redlynch, Earlville and Gordonvale
- ongoing staged release of land in the Mount Peter Master Planned Area
- reviewing the preferred pattern of development for FNQ
- designation and investigation of potential future growth areas.

Long-term (15 years and beyond)

In the long term significant focus on consolidation within Cairns and the major regional towns. Significant decisions will be made about the long-term future regional pattern of development. The long-term strategy includes:

- reviewing the Kuranda Range Road upgrade and Myola proposals
- expanding the urban footprint and designating urban growth areas
- a review of urban structure and form of Cairns and regional activity centres to facilitate consolidation
- reviewing existing and developing new or amended economic strategies.

*Projects are subject to the normal state government budget assessment process.

FNQ regulatory provisions

The FNQ Regional Plan 2009-2031 State Planning Regulatory Provisions (FNQ Regulatory Provisions) have been prepared under part 5C of IPA as a stand-alone document to complement and provide regulatory support to the regional plan and assist in implementing the preferred settlement pattern for the region.

The FNQ Regulatory Provisions, which came into effect when they were gazetted, replace the draft State Planning Regulatory Provisions (Regional Plans) May 2008, which were introduced on 9 May 2008. Any development applications that were lodged between 9 May 2008 and the date that the FNQ Regulatory Provisions were gazetted, will be subject to the draft State Planning Regulatory Provisions.

The regulatory provisions aim to regulate certain land use and development throughout the region and outline aspects of development that may not occur in stated locations. The application and intent of the regulatory provisions are described in detail in the FNQ Regulatory Provisions.

Regional land use categories

The FNQ Regulatory Provisions allocate all land into one of three regional land use categories: regional landscape and rural production area, urban footprint and rural living area. These categories provide the spatial context for the preferred pattern of development in the regional plan. They are shown indicatively on maps 1a to 1k, and in more detail on the regulatory maps (1:50 000 and 1:250 000 scale) and associated online mapping. Regional land use category boundaries are based on cadastral, planning scheme or other defined boundaries.

State legislation, local government planning schemes, other planning instruments and local laws may continue to apply in addition to the FNQ Regulatory Provisions. The FNQ Regulatory Provisions prevail to the extent of any inconsistency with other planning instruments under the IPA.

Regional landscape and rural production area

Intent

The regional landscape and rural production area (RLRPA) includes lands that have regional landscape, rural production or other non-urban values, and protects these areas from encroachment by inappropriate development, particularly urban or rural residential development.

Description

The RLRPA includes land with one or more of the following values:

- good quality agricultural land and other productive rural areas
- natural resources such as mineral and extractive resources and native and plantation forests
- water catchment and groundwater areas
- areas of ecological significance, including
- endangered and of concern regional ecosystems
- Wet Tropics World Heritage Area and protected area tenures

- essential wildlife habitat of the southern cassowary and mahogany glider
- wetlands
- beaches, islands and other coastal areas
- outdoor recreation and regional open space areas
- inter-urban breaks.

FNQ regulatory provisions

The FNQ Regulatory Provisions restrict the following in the RLRPA:

- further fragmentation of land holdings
- urban development, except within specific urban zonings
- residential development associated with tourist accommodation
- expansion of rural residential development.

The FNQ Regulatory Provisions support diversification of rural economies by allowing a range of developments including:

- small to medium scale tourist activities
- small scale industry, business and community activities
- sport and recreation facilities.

Urban footprint

Intent

The urban footprint includes land to provide for the region's urban development needs to 2031.

Description

The urban footprint includes existing urban areas and broadhectare land potentially suitable for future urban development. It will accommodate the full range of urban uses such as:

- housing
- industry
- business
- community facilities
- tourist facilities
- sport, recreation and urban open space.

Inclusion of land within the urban footprint does not imply that it can be developed for urban purposes. The urban footprint includes areas unsuitable for urban development because of values or constraints, including areas of high ecological significance, waterways, hill slopes, scenic amenity, cultural heritage sites, and open space, and land constrained by flooding, bushfire, landslide and projected climate change impacts such as storm surge and sea level rise. It also includes rural zoned land for future urban growth. Local government is required to amend the planning schemes to ensure appropriate future use of these lands.

The FNQ urban footprint focuses urban growth in locations that:

- are identifiable urban areas including cities, towns and some small centres
- have or may have infrastructure such as reticulated water and sewer, a local road network, and social infrastructure
- physically connect with existing urban areas
- address specific land use needs such as industrial land provision.

The urban footprint includes a number of small urban centres. These generally have, or are intended to have, a village type zoning under the local government planning scheme, or primarily contain residential zonings. The level of infrastructure and service provision is generally low, and may be limited to a school, pub and/or shop. These small urban centres have an important in servicing the region's rural communities.

The urban footprint also includes some areas designated or already developed for rural residential purposes that are well located with respect to urban services and facilities. Local government is required to identify potential opportunities to develop or redevelop rural residential areas for urban purposes where this is appropriate. Inclusion of rural residential land in the urban footprint does not imply that it can necessarily be developed for urban purposes as above.

Local government planning schemes and structure plans for declared Master Planned Areas will be the primary mechanisms for establishing the future use of land and preferred timing of development within the urban footprint.

FNQ regulatory provisions

The FNQ Regulatory Provisions restrict urban development that may compromise the future planning intent of a declared Master Planned Area within the urban footprint.

Rural living area

Intent

The rural living area comprises locations currently designated for rural residential development in local government planning schemes where further rural residential development is permitted under the regional plan.

Description

Rural residential areas contained within the rural living area may be developed for rural residential purposes in accordance with the local government planning scheme and other relevant requirements.

Significant areas of land are already developed or allocated for rural residential development in the region. Land for rural residential purposes is to be restricted to the Rural Living Area to ensure future development is appropriately located and access to services and facilities can be provided.

Some areas of rural residential land that are remote from urban communities or are heavily constrained are within the RLRPA.

FNQ regulatory provisions

The FNQ Regulatory Provisions do not prevent land in the rural living area being developed for rural residential purposes but make applications for urban activities impact assessable. Transitional arrangements provide a window of opportunity for landholders to apply to develop rural residential land within the RLRPA.

Urban growth areas

The FNQ Regulatory Provisions also include urban growth areas to provide for an orderly process for investigating, planning and delivering urban development together with the timely development of infrastructure in FNQ.

Urban growth areas are key broadhectare locations for subdivision and development within the urban footprint. The FNQ Regulatory Provisions allow the Minister to declare urban growth areas in the urban footprint as a Master Planned Area under the IPA, thereby triggering the structure planning process of that Act. The Minister can include new areas by notice in the *Government Gazette*. The master planning process is described more fully in Part E, section 4.3.

PART E—Regional policies

This section outlines the fundamental principles, policies and desired regional outcomes that will guide FNQ planning and development assessment. It is recognised that the vision of the regional plan and desired regional outcomes cannot be achieved through land use planning mechanisms alone (i.e. policies implemented through IPA).

Other statutory and non-statutory plans, strategies and guidelines play an equally important role in this regard. Where achieving an outcome also relies on other aligned plans and strategies, this is highlighted in the text.

Underlying principles

Ecological sustainability

Ecological sustainability is defined under IPA as a balance that integrates:

- protection of ecological processes and natural systems at local, regional, state and wider levels
- economic development
- maintenance of the cultural, economic, physical and social wellbeing of people and communities.

IPA seeks to achieve ecological sustainability by coordinating and integrating planning at the local, regional and state level, managing the process by which development occurs, and managing the effects of development upon the environment.

The Queensland Government is also a signatory to the *Intergovernmental Agreement on the Environment 1992 and National Strategy for Ecologically Sustainable Development 1992*. The following principles apply to all public policy making and its implementation within Queensland, including the Regional Plan:

- Integrated and long-term decision making—incorporating long and short-term environmental, economic and social considerations into decision making.
- Inter-generational equity—ensuring that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations.
- Intra-generational equity—ensuring a fair share of resources and opportunity among present generations.

- Precautionary principle—ensuring that, where there are threats of serious or irreversible environmental damage, lack of full scientific certainty is not used as a reason for postponing measures to prevent environmental degradation.
- 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 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.

Ecological sustainability is an underlying principle that will permeate every aspect of the regional plan and its implementation.

Addressing climate change and oil vulnerability (peak oil)

Climate change and oil vulnerability (peak oil) are two critical issues in determining the future ecological sustainability of FNQ. The Queensland Office of Climate Change, Department of Infrastructure and Planning and Queensland Transport have joined in partnership to develop regional planning responses to climate change and oil vulnerability.

Climate change

The available scientific evidence overwhelmingly indicates that climate change is a serious global threat demanding an urgent response. The likely impacts are significant for the FNQ region's environment, economy and communities.

The following climate change projections for FNQ (CSIRO & BoM, 2007) show a number of changes (expressed as a 'best estimate' or median value) compared to the 1990 baseline:

- higher temperatures—annual average temperature is projected to increase by 0.9°C by 2030 (mid-range emission scenario) and to increase by 1.5°C and 2.8°C under the low and high-emission scenarios respectively by 2070.
- more extremely hot days—up from four days over 35°C per year for Cairns to six days per year by 2030 and 10 (low-emission scenario) and 34 days (high-emission scenario) by 2070
- uncertainty about rainfall, with a potential decrease in rainfall overall by 2070
- a decrease of nine per cent in the frequency of tropical cyclones off the East Coast of Australia and an increase in the number of long-lived and severe (category 3–5) eastern Australian tropical cyclones (Abbs et al. 2006).
- global sea-levels could rise from 18–59 centimetres by 2100, with a possible additional contribution from melting ice sheets of 10–20 centimetres (IPCC, 2007). Garnaut (2008, p.94) reported recently that future sea-level rise could be much worse that projected by the IPCC as a consequence of uncontrolled climate change, and could result in global sea-level rise of up to 1.4 metres by 2100.
- The 1-in-100 year storm tide event is projected to increase by 37 centimetres in Cairns. This change in the storm tide height is calculated from the greenhouse-induced estimates of a 30 centimetres sea level rise, a 10 per cent increase in cyclone intensity and frequency, as well as a 130 kilometres shift southwards in cyclone tracks.

The Garnaut *Climate change review report* released in September 2008 warns that FNQ may be one of the most threatened regions in Australia due to the potential impacts on the Great Barrier Reef and Wet Tropics World Heritage areas, and the tourism economy that depends on these two resources. Diversifying the regional economy will help to build FNQ's economic resilience to the impacts of climate change (Garnaut, 2008).

Research overseas and in Australia indicates that there are significant economic benefits in responding early to climate change—both to mitigate climate change (reduce the amount of climate change occurring, by reducing emissions of greenhouse gases) and to adapt to climate change. In simple terms, reducing emissions and adapting to climate change earlier will mean less cost to economic growth and lifestyle.

The Queensland Government has released an Issues Paper on the review of its climate change strategy that contributes to the national and global effort to tackle climate change (Queensland Office of Climate Change, 2008). The strategy will support Queensland's contribution towards the national target to reduce greenhouse gas emissions to 60 per cent of 2000 levels by 2050.

The review will update and consolidate *ClimateSmart 2050: Queensland climate change strategy 2007 and Queensland's ClimateSmart Adaptation 2007–12: an action plan for managing the impacts of climate change* (NRW, 2007a) in light of the latest scientific assessments as well as national and international developments in climate change and climate change policy.

The review will identify programs and policies to support reductions in greenhouse gas emissions and help Queensland adapt to the impacts of climate change.

Climate change will have significant impacts on the region, particularly on its natural systems and unique biodiversity. The tourism industry relies on healthy reef and rainforest environments. Coral reefs are particularly sensitive to temperature increase and climate change induced increases in temperature could cause widespread coral bleaching, with a subsequent impact on specific tourist destinations. The most recent predictions indicate that unless greenhouse gas emissions are mitigated, the Great Barrier Reef could disappear and be replaced by seaweed and soft corals.

Increased temperatures, reduced rainfall, and increased frequency or severity of cyclones could also severely affect the Wet Tropics World Heritage area, with cyclone-damaged rainforests, loss of biodiversity, high levels of extinction and reduced attractiveness to tourists. Changes in temperature or rainfall could also have significant impacts on the cane, dairying and horticulture industries.

People will also be affected, with climatic change causing more heat-related health problems, a higher incidence of mosquito-borne diseases, and increased exposure to catastrophic events, such as cyclones, flooding and droughts.

Climate change is also likely to compound the effects of existing threats, such as development-related habitat loss and fragmentation. It is therefore important to both reduce these existing threats and enhance natural ecosystems and their supporting ecological processes to build their resilience to the expected impacts of climate change.

Oil vulnerability (peak oil)

Oil Vulnerability is the point at which production in an oil well, field or region begins to decline. This point is typically reached when one-third to one-half of the oil in a reserve has been extracted. Decline is inevitable due to the loss in pressure as oil is extracted, even with the advanced drilling and extraction techniques available. Once production peaks, demand for oil will outstrip supply.

Future oil shortages and sustained high fuel prices are realities that Queenslanders must now face. They will impact on virtually every sector of the economy, although the most immediate impacts are likely to be felt in the transport, tourism and agricultural sectors, all of which are particularly reliant on oil.

Given the vulnerability of Queensland's industry and community to sustained high oil prices, the Queensland Government is taking steps to prepare for an oil-resilient future. In April 2007 the Queensland Government released the *Queensland's Vulnerability to Rising Oil Prices Taskforce Report* (Queensland Government, 2007a). The taskforce reported that overwhelming evidence suggests world oil production will peak within the next 10 years. The report noted an increasing reliance on supplies from politically and socially unstable areas, which increases the risk of supply disruptions. Combined with the increasing world demand for oil and oil products, oil prices are anticipated to substantially increase in the future.

The taskforce concluded that Queensland was vulnerable to peaking world oil supplies given supply and demand trends and the regional distribution of the population, tourism and industrial base.

Researchers at Griffith University have assessed the relative vulnerability of households based on the combined impacts of rising fuel prices, higher mortgage interest rates and general price inflation. Higher fuel prices are likely to have most effect on those residents of FNQ who are highly reliant on car transport and lack public transport alternatives. Outer suburban residents in rural or remote communities with average or below average incomes are likely to be the most affected.

The Queensland Government is currently preparing an Oil Vulnerability and Mitigation Strategy and Action Plan and released the Towards Oil Resilience Community Information Paper in September 2008 (EPA, 2008a). The community information paper seeks to involve the community in developing options and strategies to prepare for an oil-resilient future.

An oil-resilient future for Queensland is one where impacts of changing oil supplies and prices have minimal effect on the Queensland economy and lifestyle. To prepare for oil shortages and volatile prices, the information paper proposes three key areas for action:

- creating oil-resilient transport networks
- promoting a sustainable fuel supply
- planning for oil-resilient towns and cities.

While oil vulnerability and climate change are major issues in their own right, they are intricately linked and the combined impacts may be more than the sum of each individual issue. The challenge for the community is to make the transition to a low-carbon economy, reducing atmospheric carbon concentrations and managing the declining availability of oil, which will require a fundamental lifestyle change for the entire community.

Given the community's growing energy consumption and dependence on vehicular transport, the reliance of the region's economy on tourism and agriculture, and the possible severe impacts on these industries from climate change and peak oil issues, it was imperative they be addressed in the regional plan.

Mechanisms to respond to the joint challenges of climate change and oil vulnerability were considered in establishing the preferred settlement pattern for the region and are incorporated throughout the following policies.

1. Natural environment

Desired regional outcome

The region's terrestrial and aquatic natural assets, which include the Wet Tropics and Great Barrier Reef World Heritage areas, are protected and enhanced to increase their resilience to the impacts of climate change.

The natural environment underpins the regional economy and FNQ lifestyle. The natural beauty of the landscape, relaxed outdoor living, and availability of nature-based recreation and open space are also vital components of the FNQ character and lifestyle. Nature-based tourism and agriculture rely heavily upon high-quality natural areas.

The region includes extensive areas of the Wet Tropics and the Great Barrier Reef World Heritage areas (see map 2). The Wet Tropics World Heritage area is a recognised centre of outstanding biological diversity that is unparalleled on the Australian continent. The Great Barrier Reef World Heritage area is the largest and most diverse coral reef system on the planet and features outstanding biodiversity of international significance.

These areas represent a major stage of the earth's evolutionary history and are an outstanding example of ongoing ecological and biological processes. They contain superlative natural phenomena, and are some of the most important natural habitats for conservation of biological diversity world-wide.

Rapid urban growth and climate change pose immediate and significant threats to the region's natural assets. The Great Barrier Reef, coastal plain, upland ecosystems, and endemic rainforest species are particularly vulnerable to climate change. Decisive action is required to retain these valuable natural resources and enhance the connectivity of native vegetation and wetlands, reduce threatening processes and reverse the decline in water quality, biodiversity and the natural values of the coast. Ecosystem resilience will be critical in mitigating and adapting to climate change, and the region's subsequent ecological sustainability.

1.1 Biodiversity conservation

While much of the region is protected in national parks, marine parks and declared fish habitat areas, there are many areas of ecological significance that fall outside these protected areas. These areas are likely to be most threatened by further urban development. In particular, the coastal lowlands and the Atherton Tablelands have been severely affected by past development. Setting an urban footprint provides an opportunity to control the encroachment of urban development into areas of high ecological significance.

Clearing of remnant vegetation for rural development is regulated under the *Vegetation Management Act 1999* (VMA). While broadscale clearing of remnant vegetation for agricultural purposes was phased out in 2006 under the VMA, clearing for urban purposes is not currently subject to the same level of control. The biodiversity conservation policies focus on protecting ecological values from potential adverse impacts of urban development.

Local governments will need to amend their planning schemes to reflect the biodiversity conservation policies and mapping. Detailed codes and guidelines will need to be prepared to assist local government.

Objective

- Protect, manage and enhance the extent, diversity, condition and connectivity of the region's natural areas to maintain ecological integrity and processes, reverse biodiversity decline and increase resilience to the expected impacts of climate change.

Land use policies

1.1.1 Urban development within the regional landscape and rural production area is located outside of areas of high ecological significance (see map 3).

1.1.2 Urban development within the urban footprint or rural living area within an area of high ecological significance (see map 3) is located, designed and operated to avoid impacts on ecological values, or where avoidance is not possible, minimise impacts and then offset residual impacts so there is a net gain of the impacted values.

1.1.3 Urban development adjacent to areas of high ecological significance (see map 3) is located, designed, operated and setback to avoid adverse impacts on the area's ecological values.

1.1.4 Urban development in or adjacent to areas of general ecological significance (see map 3) is located, designed and operated to avoid or, where avoidance is not possible, minimise any adverse impacts on ecological values where possible.

1.1.5 Urban development on a lot that is within a strategic rehabilitation area (see map 3) results in improved ecological connectivity or habitat extent within that lot.

1.1.6 Offsets requiring revegetation that cannot be achieved on the development site should be focused within strategic rehabilitation areas (see map 3) where appropriate.

Aligned strategy

1.1.A Revegetation and ecological rehabilitation programs are prioritised and undertaken within strategic rehabilitation areas (see map 3) or degraded areas of high ecological significance. This is to be done using local native species in a mix that enhances ecological and habitat function while ensuring that rehabilitation does not negatively affect neighbouring agricultural use or other development types.

Explanatory notes

The regional plan aims to manage the impacts of urban development upon areas of high ecological significance, general ecological significance and strategic rehabilitation areas. Decision making processes under IPA must take account of short and long-term environmental effects of development at local, regional, state and wider levels. They must also apply the precautionary principle and avoid, if practicable, or otherwise lessen any adverse environmental effects of development. The preservation and maintenance of key regional environmental resources is an important element of the regional plan.

What are areas of ecological significance?

Areas of high ecological significance are considered to be of international, national, state or regional significance and include:

- Protected areas—land managed under the *Nature Conservation Act 1992* including national parks, conservation parks, forest reserves, state forests and timber reserves.
- World Heritage areas—the Wet Tropics World Heritage area, which is managed under the *Wet Tropics Management Plan 1998*
- Wetlands
  - in Great Barrier Reef (GBR) catchments, including wetlands of very high or high significance identified using Aquatic Biodiversity Assessment and Mapping Method (AquaBAMM), (EPA, 2006a)
  - in non-GBR catchments, including wetland aggregations mapped in the Directory of Important Wetlands, specifically the Spring Tower Complex and Mitchell River Fan Aggregation
- Terrestrial area—habitat of rare or endangered species, including
  - essential habitat of the southern cassowary and mahogany glider, which are endangered species protected under the *Nature Conservation Act 1992*
  - regional ecosystems with a Vegetation Management Status of *endangered* (less than 10 per cent of original extent remains) or *of concern* (between 10 and 30 per cent of original extent remains) and 'non woody' regional ecosystems
  - significant coastal dune systems detailed in the Wet Tropics and Cardwell Hinchinbrook Regional Coastal Management Plans
  - data from the Einasleigh Uplands bioregion terrestrial biodiversity planning assessment.

Areas of general ecological significance are areas of remnant vegetation of local conservation significance and include:

- Wetland areas
  - In GBR catchments, wetlands identified from AquaBAMM (excluding wetland areas of high ecological significance and artificial and modified wetlands)
  - in Gulf catchments, water bodies from the 1:250 000 topographic mapping series (excluding wetland areas of high ecological significance)
- Terrestrial area—remnant vegetation (excluding areas of high ecological significance)
- Local conservation corridors.

Strategic rehabilitation areas are areas where rehabilitation would result in strategic outcomes for the long-term conservation of biodiversity. They include a mixture of remnant vegetation, regrowth and cleared land, and represent current significant gaps in habitat continuity. Strategic rehabilitation areas are, or may in future be, important links in wildlife corridors that connect core areas of remnant vegetation, including east-west or north-south connections of both state and regional significance. The mapping is based on the following data sources:

- Landscape linkages identified in the draft Wet Tropics Regional Vegetation Management Plan under the VMA
- Corridors identified in *Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management*
- Corridors identified in State Biodiversity Planning Assessments
- Cassowary corridors identified by Biotropica for the Australian Rainforest Foundation
- Regional cassowary corridors identified by the Commonwealth Department of Environment, Water, Heritage and the Arts.

Strategic rehabilitation areas have been mapped to cadastral boundaries to provide certainty about the areas the land use policies apply to. Mapping of these areas has only been completed for the eastern part of the region; however, there is the potential to map more specific, non-cadastral areas in response to future rehabilitation works.

The state government has identified areas of ecological significance using scientifically robust methodologies. It is acknowledged that much of the mapping is broad scale, and that a site inspection will generally be required to confirm the specific type and location of ecological values. It is also acknowledged that ecosystems are complex and dynamic over time and space. The mapping will be reviewed and updated as part of future plan reviews to reflect the most up-to-date information.

These land use policies do not affect existing use rights or apply to operational works for agriculture (see Schedule 9 of IPA) or domestic activities, such as building and plumbing works; cultivation; drainage works; and building farm houses, sheds and associated structures. Neither do the land use policies apply to a change from one form of agriculture to another, such as a change from grazing to cane, or cane to tree crops or plantation forestry.

However, these land use policies do apply to a change from an agricultural use to an urban development within areas of high ecological significance, general ecological significance or strategic rehabilitation area. There are potential opportunities to locate urban developments outside areas of ecological significance (see map 3).

The intent of policy 1.1.1 is to avoid locating urban developments within areas of high ecological significance in the regional landscape and rural production area. Essential community infrastructure, such as power lines and telecommunication towers may be permitted in areas of high ecological significance, subject to adverse impacts being avoided or mitigated, including the use of offsets (see policy 6.1.B). Nature-based tourist attractions, such as the Kuranda Skyrail or MaMu rainforest canopy walkway, may also be permitted provided the facility is established to provide managed visitor access for the purposes of promoting an understanding of ecological values in the area (see policy 5.5.4).

The regional plan acknowledges that areas of high ecological significance may be located within existing urban zoned land. These areas should be managed so that development avoids adversely impacting the ecological values or, where this cannot be practicably avoided, impacts are minimised and any residual impacts are offset. The Queensland Government Environmental Offsets Policy (EPA, 2008b) guides decision making by Queensland agencies in regard to offset requirements. A detailed biodiversity offsets policy will be published in 2009 outlining the methodology for calculating biodiversity offset requirements.

The areas of high ecological significance includes potential habitat of a range of species protected under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). Areas outside this may contain other matters of national environmental significance protected under the EPBC Act. Development proponents should consider the EPBC Act in its entirety prior to taking any action.

The EPBC Act regulates activities (described as actions) that may have a significant impact on a matter of national environmental significance. Matters of national environmental significance include:

- listed species and ecological communities
- listed migratory species
- wetlands of international importance
- the Commonwealth marine environment
- World Heritage places
- national heritage places
- nuclear actions.

Further information about the EPBC Act can be obtained from the Department of Environment, Water, Heritage and the Arts.

The protection and rehabilitation of ecosystem connectivity, including strategic rehabilitation areas, is vital to the long-term protection of the region's biodiversity. Scientific research indicates the region's biodiversity is highly vulnerable to projected climate change, particularly in the low lying coastal areas and elevated mountain ranges. Large, connected vegetation remnants may recover more effectively from disturbances, such as tropical cyclones, compared to small, isolated or fragmented patches. The condition of the Wet Tropics World Heritage area and other areas of high ecological significance strongly depends on appropriate connectivity.

Landholders make an invaluable contribution to biodiversity conservation in the region. The strategic rehabilitation area includes a range of agricultural lands, many of which are already being managed for biodiversity outcomes. Any rehabilitation works under aligned strategy 1.1.A are intended to be entirely voluntary, and will only occur through landholders' involvement and agreement. Voluntary agreements may be prepared to reflect and protect their significant interests.

Including land within a strategic rehabilitation area may provide strategic short and long-term advantages for landholders in terms of access to funding from natural resource management bodies and offset programs. The latter includes an emerging range of carbon and biodiversity offsets, which in turn may lead to economic diversification opportunities and stronger rural economies.

Any revegetation within a strategic rehabilitation area should use an appropriate mix of local native species that enhances the area's ecological value.

The policies included in the regional plan provide a practical response to the expected impact of climate change on nature in the region. At a broad level the climate change response strategy is designed to protect a diversity of habitats, maintain or improve natural values of areas outside the reserve network, and maximise the resilience and connectivity of natural areas. A number of core areas of significant biodiversity are located within the protected area estate, and protecting and enhancing habitats and corridors between these core areas is an essential policy outcome for the regional plan.

Maintaining the region's natural environment must be tackled on many fronts, and cannot be achieved through IPA alone. Efforts need to be directed on both public and private lands, through a combination of voluntary and regulatory mechanisms.

There are many other programs and strategies, all of which help to achieve the desired regional outcome. Several of the most relevant plans and strategies include:

- *Sustaining the wet tropics: a regional plan for natural resource management 2004–2008 and associated biodiversity conservation condition report* (FNQ NRM Ltd et al 2004)

- *Wet tropics management plan* (WTMA,1998)
- *Wet tropics conservation strategy* (WTMA, 2004)
- *Southern cassowary recovery plan* (EPA, 2004b)
- Declared fish habitat area management policies and guidelines (Department of Primary Industries and Fisheries)
- Commonwealth and state marine park zoning plans
- *Commonwealth Hinchinbrook plan of management*
- *Queensland Government environmental offset policy* (EPA, 2008b)
- *Reef water quality protection plan* (Queensland Government et al, 2003)
- Coastal protection and management plans under the *Coastal Protection and Management Act* 1995.

These programs and strategies sit within a broader policy framework for biodiversity conservation at the state (e.g. *Queensland biodiversity policy framework: sustaining our natural wealth, Environmental Protection Agency—back on track species prioritisation framework*), national (e.g. *National strategy for the conservation of Australia's biodiversity, National Representative System of Marine Protected Areas*) and international level (e.g. World Heritage Convention).

Protecting endangered species

The southern populations of the southern cassowary (*Casuarius casuaris johnsonii*) and mahogany glider (Petaurus gracilis) are listed as endangered species under the *Nature Conservation Act 1992 and the Environmental Protection and Biodiversity Conservation Act 1999*.

Both taxa are national and state priorities for recovery actions. Southern cassowaries are large animals requiring large areas of habitat and access to clean water. They are also major long distance dispersal agents for large fruited rainforest trees and considered a keystone species. Mahogany gliders occur in coastal lowland habitats, many of which are endangered from past clearing. While these two species are Wet Tropics icons, conservation of FNQ biodiversity cannot be dependent solely on the implementation of protection measures for these animals alone.

Mission Beach and hinterland, southern Atherton Tablelands, and Daintree to Cape Tribulation are considered as priority areas for biodiversity conservation (DCILGPS, 2000). In the Mission Beach area, urban development is contributing to significant ongoing decline of the small cassowary population. Current urban impacts upon cassowaries and their habitat—especially increasing losses due to road traffic and dog attacks—are not believed to be sustainable. These areas are not considered appropriate for high-density urban development.

1.2 Coastal management

The natural values of the region's coast, including its sandy beaches, abundant native plants and animals, tropical rainforests, extensive coastal wetlands and part of the world's largest coral reef, all contribute as natural capital to the region's economic wealth, and attract new business enterprises, new residents and tourists. Careful management of the coast is required to ensure the region's coastline continues to contribute to the livelihoods and lifestyles of residents and visitors, and to ensure its most valued elements are protected and conserved.

Objectives

- The region's natural coastal resources, including the foreshore, coastal wetlands, marine ecosystems and dunes are protected, managed and are able to accommodate the impacts of climate change.
- The coast is managed to allow for natural fluctuations—including any that occur as a result of climate change and sea level rise—and to protect human life and property from the hazards of storm tide inundation or shoreline erosion.

Land use policies

1.2.1 Coastal development is located, designed and managed to first avoid and then minimise or offset adverse impacts on coastal resources and ecologically significant coastal areas, as shown on map 4.

1.2.2 Development in Declared Fish Habitat Areas, as shown on map 4, is avoided. Where there are no alternatives, impacts are minimised or offset in accordance with the relevant fisheries management policies and guidelines (see section 5.4).

1.2.3 Development does not occur within an erosion-prone area that is also within a coastal management district; or within a storm tide inundation hazard area, as shown in map 4, except in accordance with relevant policies of the state and regional coastal management plans.

1.2.4 Planning schemes and development proposals must be consistent with the zoning plans and management plans of the Queensland Great Barrier Reef Coast Marine Park and the Commonwealth Great Barrier Reef Marine Park.

1.2.5 Development ensures there is no net loss of public access to the foreshore or use of coastal waters, and public access is designed and maintained to conserve coastal resources and maintain public safety.

1.2.6 Local governments identify erosion-prone areas and storm tide inundation areas within their planning schemes.

Aligned strategies

1.2.A Coastal processes in areas demonstrating degradation from unintended, consequential or past alterations to the coast are targeted for rehabilitation when works are undertaken in the coastal zone.

1.2.B Areas that provide for the landward retreat of coastal habitats and species threatened by sea level rise are identified and protected where possible.

1.2.C Coastal development and maritime infrastructure are designed and located to minimise interactions with protected marine wildlife.

Explanatory notes

Many changes to the coast's foreshore are natural in origin, such as sediment transport along the coastline and fluctuations to the location and form of the coast as a result of natural physical interactions between the coast and the sea. However, the coast is also experiencing increasing pressures from climate change, and urban and other development. Impacts include:

- sea level rise and increased shoreline erosion
- increased flooding caused by higher mean sea levels and changes to runoff rates
- increased frequency and intensity of extreme events, such as tropical cyclones and storm surges
- increased coral bleaching events due to rising water temperatures and increased acidity
- changes to natural ecosystems.

Protecting the coast requires a joint community effort and cannot be achieved through IPA alone. A combination of voluntary and regulatory mechanisms needs to be directed on both private and public land. There are many programs and strategies that assist in achieving the desired regional outcome. Several of the most relevant plans and strategies include:

- Great Barrier Reef Marine Park and the state's Great Barrier Reef Coast Marine Park zoning plans
- State Coastal Management Plan (EPA, 2001a)
- Wet Tropical Coast Regional Coastal Management Plan (EPA, 2003a)
- Cardwell–Hinchinbrook Regional Coastal Management Plan (EPA, 2003b)
- Fish habitat management operational policies and guidelines (Department of Primary Industries and Fisheries).

The Great Barrier Reef Marine Park and the state's Great Barrier Reef Coast Marine Park zoning plans protect a significant portion of the region's wetlands and influence where development may occur in these areas. Map 4 shows marine park zones. Certain developments, such as aquaculture or infrastructure, may be restricted in specific zones.

The *state coastal management plan* and regional coastal management plans have the effect of state planning policies under IPA. Policies under Chapter 2.2 of the State coastal management plan provides more detailed direction to ensure development on the coast is not subsequently threatened by natural coastal processes.

The EPA has prepared guidelines to support the implementation of the coastal plans, including:

- Mitigating the Adverse Impacts of Storm Tide Inundation (storm tide guideline), which provides guidance on how to appropriately reflect the coastal hazard (storm tide) policy in planning schemes and development assessment (EPA, 2007a)
- State and Regional Coastal Management Plans—Queensland's Coastal Policy Implementation Guidelines for Development Assessment and for Planning Schemes (EPA, 2007b).

In addition, the *Coastal Protection and Management Act 1995* provides that land within the erosion-prone area may be surrendered to the state as a condition of a lot reconfiguration approval and be reserved under the *Land Act 1994* for beach protection and coastal management purposes under local government trusteeship. Erosion prone areas that lie within coastal management districts are shown on map 4.

In assessing development proposals on land in low-lying coastal areas (below the two-metre contour above the highest astronomical tide), an assessment of the storm tide inundation hazard risk is to be undertaken to avoid placing people and property at risk. Only development that can be abandoned (e.g. sporting fields), easily relocated or is temporary can be undertaken in areas at risk from storm-tide inundation. Guidelines (mentioned above) provide details of the government's risk-assessment methodology to be applied in such situations.

Fish habitat areas are managed to protect important near shore marine environments that are critical to sustaining populations of commercial and other marine species. The areas are established and regulated under the *Fisheries Act 1994*. Section 5.4 provides further explanatory notes in relation to policy 1.2.2 above and management of fish habitat areas generally. Land use planning is to accommodate appropriate buffer widths between existing fish habitat areas to allow for climate change with landward shifts of estuarine and marine fauna and flora communities.

Coastal development near estuaries, waterways and drains should be designed and located to minimise the risk of residents interacting with hazardous wildlife, such as crocodiles (see section 4.7). Potential impacts on protected marine wildlife, for example turtles and dugongs, should also be considered in the siting and design of marine infrastructure.

1.3 Air and acoustic environment protection

FNQ is generally considered to have good air quality. This is primarily due to the extent and health of its natural environment as well as the lack of major industrial development when compared to other Australian cities. Nevertheless, issues of air and noise pollution do occur in localised areas of the region. Excessive noise is the most widely reported form of pollution in Queensland and is known to affect various sections of the community. While generally considered a nuisance, noise can reach a level where it becomes harmful, resulting in decreased quality of life.

Concentrations of pollutants in the ambient air in FNQ are generally below concentrations permitted in national air quality standards. However, issues may arise where industrial pollution or uncontrollable events, such as fire, leaks or explosions, cause air-quality indicators to exceed ambient air-quality standards.

Several measures are available to manage the impacts of noise and air emissions. These range from the use of planning tools such as setback areas to design and management measures including the installation of emission-reduction devices to help reduce or avoid exceeding levels specified in standards. This means going over the legal levels, i.e. if they are exceeded then leave as is. Each of these measures acts to reduce the potential impacts of emissions on sensitive land uses with the implementation of separation distances being the preferred method.

Objective

- Development is located and managed to maintain or enhance air and the acoustic environment to maintain the health and wellbeing of the community and the natural environment.

Land use policies

1.3.1 Urban design, industrial and residential subdivision layout, building design and operational practices are adopted that act to minimise air and noise emissions and the impacts of emissions on sensitive land uses

1.3.2 Development that generates emissions must be adequately separated or planned, designed, constructed and operated to ensure the impacts of air and noise emissions on sensitive land uses meet the objectives of the Environmental Protection (Air) Policy and the Environmental Protection (Noise) Policy.

1.3.3 Sensitive land uses should be separated from activities that generate noise and air emissions including commercial, recreational activities such as motor sports, intensive agricultural land uses, major transport facilities and industrial developments to ensure that existing air and noise emitters are not affected by the encroachment of sensitive land uses.

1.3.4 Noisy outdoor recreational activities, such as motor sports, are designed and located to avoid conflicts with adjacent residential areas.

Explanatory notes

Eliminating the impacts of air and noise pollution is not always possible. Providing separation distances between industry and other sensitive activities 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 land uses, or major transport routes. Air and noise pollution is currently managed through:

- *Environmental Protection Act 1994*
- *Environmental Protection Regulation 1998*
- Environmental Protection (Air) Policy (EPP Air)
- Environmental Protection (Noise) Policy (EPP Noise)

This legislation establishes local, regional or state standards for air quality and acoustic quality. A State Planning Policy for Air/Noise (SPP) is currently being developed by the EPA. The SPP is expected to contain a hierarchy of planning and management tools to protect sensitive land uses from the impacts of air and noise emissions and also to protect land uses that are known to produce emissions from the encroachment by sensitive land uses.

As far as possible, permanent facilities for noisy outdoor recreational activities, such as motor sports, should be located away from residential areas. However, some facilities, such as showgrounds, may already be located close to residential areas. These facilities may enjoy existing use rights for a range of outdoor recreational activities. Similarly, temporary events may sometimes occur close to residential areas.

2. Regional landscape and natural resources

Desired regional outcome

The environmental, cultural, social and economic features that comprise the region's unique tropical and rural landscapes are identified, maintained and managed sustainably and are more resilient to the impacts of climate change.

The forested hills, rural landscapes and abundant, tropical greenery make the region's scenery special and distinct from other parts of Australia. The region's landscape also supports areas of international conservation renown and important primary production. It provides a backdrop for tourism, outdoor recreation and spiritual and cultural pursuits.

2.1 Regional landscape values

The region's natural areas are characterised by their high biodiversity, agricultural and fisheries productivity, and scenic amenity. The natural environment is also a major economic asset; it contributes substantially to the tourism and natural resources industries, as well as to residents' and visitors' quality of life and to recreational and scenic opportunities. The region's landscapes and natural areas also have important cultural significance for the region's Indigenous and non-Indigenous communities. FNQ's landscape has:

- areas of high ecological significance
- areas of good quality agricultural land
- areas of high scenic amenity
- extractive and mineral resource areas
- potential renewable energy resource areas
- cultural heritage areas
- outdoor recreation areas
- areas that form inter-urban breaks
- water catchment areas
- coastal waters and foreshores.

Awareness of the value of the region's rural and open spaces in addressing climate change impacts and in reducing greenhouse gas emissions through renewable energy production or carbon sequestration in forested areas is now growing.

Objective

- The region's landscape values are identified, protected and managed through an integrated planning approach.

Land use policies

2.1.1 The value of the landscape for nature conservation, primary production, renewable energy resource areas, priority carbon sequestration, cultural heritage, outdoor recreation and scenic amenity is given appropriate recognition in land use planning and development assessment.

2.1.2 The significance of cultural landscapes is given appropriate recognition in land use planning and development assessment.

2.1.3 Development and infrastructure provision north of the Daintree River is managed to protect the significant biodiversity, scenic and ecological values of the area.

Aligned strategies

2.1.A A consistent methodology for identifying and valuing regional landscape values is developed and applied across the region.

2.1.B The value of sustainably managed agricultural land for food production, ecosystem services and contribution to the social character of the region is recognised and supported through appropriate land management practices and incentive programs.

2.1.C The ferry crossing at the Daintree River is maintained to protect the World Heritage and scenic values of the area north of the Daintree River.

2.1.D The roads between Palm Cove and Port Douglas, and Daintree River to Bloomfield River are maintained as scenic routes.

Explanatory notes

Landscape values often exist on different tenures of land and no single jurisdiction is responsible for their protection and management. For example, scenic landscapes can occur on both public and private land. Important conservation corridors that link areas of high ecological significance may be found on privately owned farm land. The responsibility for preserving landscape values needs to be shared across all levels of government, community and industry. State and local governments must work together to improve integration of land use planning and management processes in order to address land-based issues and conflicts that may diminish landscape values.

Existing data on landscape values is often difficult to locate and may cover only a portion of the region. Methodologies used to collect, analyse and present data are often incompatible; therefore, information cannot be readily shared between management agencies. While there is much information available on the conservation and agricultural values of the region, there is little available on the region's scenic amenity or cultural heritage attributes.

A regional data collation and information exchange framework is needed based on a regional geographical information system to collate and present data. Using a consistent methodology, regionally significant landscape values can be defined. This information could be used to develop state and local government planning policies to protect and manage the area's landscape values.

Governments must work with Indigenous Traditional Owners and native title holders to protect and manage landscape values. The state has signed Indigenous Land Use Agreements (ILUAs) with the Eastern Kuku Yalanji people to cooperatively manage natural and cultural values on land in the Daintree area, and with the MaMu people for the MaMu rainforest canopy walkway west of Innsifail (see section 3.8).

The landscape and scenic elements of the former Douglas Shire are considered by many residents and visitors as being regionally significant. The policies included in this section protect these values of the area by:

- limiting urban growth and development north of the Daintree River
- designating the area between the Daintree River and the Bloomfield River as a regional landscape and rural production area
- maintaining existing policies to maintain a the car ferry crossing on the Daintree River
- maintaining the roads between Palm Cove and Port Douglas, and the Daintree River to Bloomfield River as scenic routes.

It is important that development north of the Daintree River remains low key and sustainable to protect the scenic and World Heritage values and character of the area. The existing access configuration and lack of mains power are two major reasons why the area north of the

Daintree River has remained in a relatively undeveloped state. They are also the reasons why the area has maintained its heritage status and attractiveness to tourists. The Douglas Shire planning scheme provides for limited infrastructure provision north of the Daintree River, with a strong preference for self-sufficiency using sustainable technologies. The regional plan supports these elements of the scheme.

The Daintree River ferry crossing is an important element of the tourist experience and tourism economy, creating a sense of destination and emphasising the isolation and significance of the area. The ferry limits the number of vehicles that can travel into the area during peak periods, which serves to limit undesirable crowding on roads and at visitor facilities. In this regard, maintaining a car ferry, as opposed to constructing a bridge crossing, remains a policy for the region.

The region is very vulnerable to rising fuel prices due to its heavy reliance on air and vehicle-based transport for the import and export of goods and services. The wet tropics area, with its rich soils, favourable climate and high rainfall, has significant potential for sustainable food production, which would secure food supplies for the region and build the region's resilience in the face of climate change and peak oil impacts. Appropriate incentives are needed to encourage landholders to take up sustainable farming practices and natural resource management measures.

2.2 Natural resource management

The region's natural resources include rainforests, marine and freshwater wetlands, agricultural land, native plants and animals, minerals, air and water. Natural resources underpin the region's major economic activities, such as tourism, agriculture, mining, forestry and fisheries. Most natural resources are limited and some are non-renewable. Population growth in the region will place increased pressure on the region's natural resources.

Objective

- The economic, environmental, tourism, social and cultural values and functions of the region's natural resources are recognised, valued and managed to achieve ecological sustainability and resilience to climate change.

Land use policy

2.2.1 Local government planning schemes take into account natural resource management plans and the impacts of climate change on natural resource management.

Aligned strategies

2.2.A Integrated management of land within the regional landscape and rural production area is achieved through a partnership approach between federal and state agencies, local government, regional natural resource management bodies, Traditional Owners, land holders and the community.

2.2.B Natural resource management plans for the Wet Tropics and Northern Gulf are recognised in managing natural resources in the FNQ region, particularly outside the protected area estate.

2.2.C *The Wet Tropics Management Plan 1998* and associated strategies are recognised in managing the Wet Tropics World Heritage area.

2.2.D Opportunities to use alternative approaches within the agricultural sector to meet both economic and environmental outcomes are explored such as carbon trading, ecosystem service payments and environmental offsets.

2.2.E Agriculture and rural land use are managed to minimise FNQ's contribution to climate change and increase resilience to its impacts.

2.2.F Pest plants and animals on all land tenures are managed through natural resource management plans and in accordance with the appropriate land protection legislation.

Explanatory notes

The region comprises a range of different land tenures, from national parks, private land and leasehold grazing properties (see map 5). Improved management practices are required across all land to prevent overuse or degradation of natural resources. Natural resource management groups and state agencies are working closely with landholders and industry to improve catchment management techniques to reduce the impact of sediment and nutrient runoff on waterways, and ultimately on the Great Barrier Reef. Many programs to control feral plants and animals are also underway. Much of this work is currently occurring and will continue to be implemented through the natural resource management bodies for FNQ and the Gulf. Strategic direction is provided in the natural resource management plans for the region: *Sustaining the wet tropics—a regional plan for natural resource management 2004–2008 and Northern gulf regional natural resource management plan 1995*. The wet tropics management plan 1998 and associated strategies also provide direction for management of the Wet Tropics World Heritage area. The control of declared pests is managed by Biosecurity Queensland under the *Land Protection (Pest and Stock Route Management) Act 2002*.

An important component of resource management and resource allocation decisions is the identification of resource availability and development opportunities. Significant land use assessment work has already been undertaken in the region to identify natural resources such as good quality agricultural land, areas of high ecological significance, fish habitats and forestry plantations.

Further assessment will continue to analyse and map natural resources in the region. The impacts of climate change and rising fuel prices on natural resource availability and subsequent effects on industry and the community will also need to be considered. Opportunities may exist to benefit from the region's ecosystem services through carbon sequestration and carbon trading, as well as through environmental offsets. Opportunities for ecosystem service payments and others mechanisms to assist landholders in maintaining environmental assets on their property should be further explored (see section 1.1).

Most resource management actions take place at the landowner and community level. Sustainable natural resource and environmental management relies on statutory and non-statutory mechanisms and can only be achieved through the commitment and involvement of community and industry groups. To achieve this, there needs to be effective communication in the development of strategies, regulations, policies and management practices relating to the management of the region's natural resources.

2.3 Scenic amenity, outdoor recreation and inter-urban breaks

The region has a diverse range of outstanding landforms and seascapes. The features which combine to create the region's visual imagery include mountain ranges, coastal escarpments, beaches, rivers, valleys, agricultural land, creeks, rainforests, wetlands, estuaries and islands. Scenic values are an integral part of the World Heritage significance of both the Great Barrier Reef and Wet Tropics World Heritage areas.

A particular landscape feature that is highly valued in the region is its hill slopes. Inappropriate subdivision on hill slopes has affected visual amenity and a number of developments on hill slopes are prone to landslide. This type of development will no longer be permitted in the urban footprint and rural living areas unless the area has a gradient less than1:4, or there is an overriding need in the public interest. Public utilities, such as telecommunication towers or power transmission lines, would be allowed, however they should be designed and located to minimise the impacts on scenic amenity. Outside these areas, development on slopes with a gradient greater than 1:6 should ensure development is sympathetic to the landscape values of the area.

Outdoor recreation activities are also highly valued by residents and tourists and commonly rely on natural settings. These activities include bush walking, white water rafting, diving, photography, fishing, bird watching, camping, rock climbing, bike riding, horse riding and scenic flights.

Inappropriate development has the potential to diminish the region's outstanding scenic and recreational values.

Objectives

- The visual amenity of the region's natural landscapes, seascapes and productive rural lands is protected and enhanced.
- The region's tropical outdoor lifestyle is valued, protected and managed to provide a range of experiences which enhance liveability.

Land use policies

2.3.1 The visual amenity of the region's landscapes and seascapes is protected and enhanced by assessing proposed developments on landscapes that are vulnerable to visual impact due to their prominence, topography or degree of naturalness.

2.3.2 On coastal hill slopes and headlands contained between the boundary of the Wet Tropics World Heritage area to the west and the Great Barrier Reef lagoon to the east; and from the Daintree River to the north and Cardwell Gap to the south:

a) in the urban footprint and rural living area, reconfiguring a lot and other development inconsistent with a council planning scheme avoids slopes greater than 1:4 or upwards to and including the ridgeline unless there is an overriding need for essential community service infrastructure.

b) in the regional landscape and rural production area, development inconsistent with a council planning scheme avoids slopes greater than 1:6 or upwards to and including the ridgeline.

c) community consultation is undertaken for development on slopes greater than 1:4 and upward in the urban footprint and rural living area and on slopes greater than 1:6 and upward in the regional landscape and rural production area.

2.3.3 Coastal local governments identify areas likely to have hill slopes of gradient 1:4 and 1:6 within their planning schemes.

2.3.4 Public access to significant popular viewpoints is retained, and views protected from development that diminishes the scenic values.

2.3.5 Outdoor recreation development considers climate change impacts on public health, safety and access including from heatwaves, bushfires, flooding and coastal inundation.

2.3.6 A regional network of roads, bicycle and pedestrian trails is provided to ensure good connection between urban areas and regional open space resources.

2.3.7 Major urban areas, towns and villages are separated from regional landscape and rural production areas by inter-urban breaks that protect the character and identity of regional communities.

Aligned strategies

2.3.A A range of outdoor recreation opportunities is available within and outside the protected area estate to meet the diverse needs of the community whilst maintaining the landscape values of the region.

Explanatory notes

The region has outstanding scenic landscapes and seascapes, including the Cairns scenic rim, the rainforested hill slopes which form a backdrop to the coastal lowlands, the rocky headlands and the seascapes of the Great Barrier Reef lagoon and the spectacular panoramas or ranges and valleys associated with the Atherton Tablelands. These and other visual features are widely used to promote the region, and are important to the tourism industry and the general quality of life. Many landscapes also hold important cultural, spiritual and aesthetic values, particularly for the region's Indigenous peoples.

Some scenic landscapes are highly vulnerable to visual impact due to their prominence, topography or degree of naturalness. Inappropriate or poorly designed urban and infrastructure development has, in the past, led to degradation of these natural landscapes. These areas need to be rehabilitated and future impacts on scenic landscapes avoided.

State Planning Policy1/03: *Mitigating the Adverse Impacts of Flood, Bushfire and Landslide* (Department of Emergency Services, 2003) outlines measures to reduce the risk of landslide on slopes of a gradient greater than 15 per cent (see section 4.7). Policy 2.3.2 provides additional guidance to developers and local government on minimising the visual impact of development on slopes with a gradient greater than 16 per cent (1:6) and steep slopes with a gradient greater than 25 per cent (1:4). The policy applies only on coastal hill slopes and headlands between the Daintree River to the north and Cardwell Gap in the south of the region.

Several of the region's roads are recognised for their scenic qualities. For example, the Captain Cook Highway between Palm Cove and Port Douglas, and the Daintree River to Bloomfield River Road are major scenic drives. Road maintenance and upgrades should seek to maintain these scenic qualities (see section 2.1).

Assessment of hill slope development by local government should focus on siting and design measures to protect and enhance the visual amenity of the landscape and on input from the community. Consideration should be given to the use of appropriate colours, materials, architectural design, landscaping, retention and revegetation of native vegetation to protect and enhance the natural scenic amenity of the landscape or seascape. These provisions should be reflected in the planning schemes of coastal regional councils.

The region needs to provide for a wide range of outdoor recreation activities for residents and tourists on a sustainable basis, recognising and protecting the natural environment values of the area. Development of outdoor recreation opportunities on private land outside the protected area estate will reduce pressures on these areas while also contributing to the diversification of the economy.

Recreation areas need to be integrated with urban communities in a way that improves linkages between the urban footprint and outdoor recreation environments and encourages accessibility to outdoor recreation opportunities from existing and new development areas.

FNQ has a network of many interconnected urban areas that are separated by rural or natural land, each with its own special identity, character and role. These urban areas are contained within urban footprint areas and framed by the regional landscape and rural production area. The area that distinguishes one footprint from another is referred to as an inter-urban break and is located within the regional landscape and rural production area. These areas are protected from inappropriate urban development and subdivision through the FNQ Regulatory Provisions and play an important role in maintaining regional character and identity.

The Wet Tropics Management Authority has developed a series of plans and strategies that aim to protect and manage use of the Wet Tropics World Heritage area, whilst maintaining scenic values and outdoor recreational opportunities. Examples include:

- *Wet Tropics Management Plan* (WTMA,1998)
- *Wet Tropics Nature Based Tourism Strategy* (WTMA,2000)
- *Wet Tropics Walking Strategy* (WTMA, 2001)
- *Wet Tropics Conservation Strategy* (WTMA, 2004).

2.4 Primary production and Fisheries

Agriculture, forestry and fisheries are major contributors to the regional economy and are dependent on the use of its natural resources. FNQ is fortunate to have large areas of good quality agricultural land which provide the basis for its extensive agricultural, horticultural, dairying and grazing industries (see map 6). Besides these areas mapped, other areas of agricultural land are valuable for a range of purposes in maintaining the viability of many agricultural industries. Preserving suitable and accessible agricultural land is the key to enhancing the long-term viability of the region's agricultural industries.

Encroachment of urban, rural residential and non-agricultural activities on agricultural land poses a major threat to the region's economic future. The regional plan, by setting an urban footprint area and controlling further subdivision in the regional landscape and rural production area will contribute towards protecting rural land for on-going agricultural production.

Management of the state's forestry and fisheries resources is undertaken through specific legislation—the *Forestry Act 1959, Forestry Plantations Queensland Act 2006 and the Fisheries Act 1994*. The interface with IPA generally only occurs indirectly, where forestry or fish habitats may be impacted by development. Management of fish habitats under the *Fisheries Act 1959* is a state interest under IPA.

While much of the region's rainforest is protected within the Wet Tropics World Heritage area, there is still potential for a viable forestry industry in the region, Opportunities exist for the expansion of plantation forestry in appropriate areas, along with limited harvest of native timber outside the World Heritage area.

The commercial and recreation fishing industry provides significant economic value to the region through direct employment, processing fish products and support services. Fisheries activities in the region include commercial fisheries, game fishing, aquarium, recreational, traditional and aquaculture. Increased population, coastal development and climate change impacts have the potential to place these fisheries resources under a high degree of stress.

Objectives

- Good quality agricultural land is identified and protected for on-going and future agricultural production.
- The region's forestry resources are identified, and sustainably managed to maximise benefits to the community.
- The region's fishery resources and fish habitats are identified, and sustainably managed to maximise benefits to the community.

Land use policy

2.4.1 Good quality agricultural land is protected from urban development outside the urban footprint.

2.4.2 Appropriate buffer distances between incompatible uses and agricultural operations on good quality agricultural land are provided through sensitive land use planning in accordance with State Planning Policy 1/92 (see policy 1.3.3).

2.4.3 New or intensified development in or adjacent to fish habitats or key fishing grounds is avoided through appropriate buffers and code provisions (see policy 1.2.2).

2.4.4 Marine, estuarine and freshwater habitats are protected, enhanced and managed to maintain sustainable fish stock levels, maximise fisheries' production for the on-going benefit of the community (see section 1.1).

Explanatory notes

Good quality agricultural land

Some loss of agricultural land is inevitable, given the shortage of land along the coast and in other areas suitable for urban development. However, it is in the best interests of economic, social and community well-being of the region that agricultural land is protected wherever possible and only utilised where there is an overriding need. This approach has been taken in determining the preferred settlement pattern for FNQ and in setting urban footprint areas. Once designated for urban development within the urban footprint, areas of good quality agricultural land are no longer shown on map 6.

The state government has an interest in the protection of good quality agricultural land as currently reflected in State Planning Policy 1/92: *Development and Conservation of Agricultural Land*. Local governments are required to take this interest into consideration and using local knowledge, determine appropriate mechanisms to be imbedded into local government planning schemes that ensure the following:

- good quality agricultural land is identified and mapped in local government planning schemes
- farming activities with no specific requirement for good quality agricultural land, such as intensive animal husbandry, are discouraged from utilising good quality agricultural land
- good quality agricultural land is not severely fragmented as to make viable primary industries unviable (see section 2.6)
- family transfers are managed to prevent fragmentation of the agricultural land holdings
- incentives for land-holders are developed and maintained to retain good quality agricultural land for productive agricultural use
- consideration is given to economic aspects of agricultural industries and good quality agricultural land in planning and development decisions
- mechanisms to resolve conflicts between agriculture and urban land use activities are established.

State Planning Policy 1/92 Guideline 2—*separating agricultural and residential land uses* (DPI et al, 1992) includes recommended separation distances. Additionally, rolling or sequential buffers can be employed as farm land (designated for future urban use) is developed in stages with lots for new houses set back from continuing cropping).

Forestry

Forestry is a form of agriculture, albeit one with a long crop rotation cycle. There is a need to identify and target land suitable for forestry production, having regard to a range of environmental, social and economic factors. Forestry operations can assist in meeting environmental objectives through reforestation and rehabilitation of natural areas and sustainable harvesting practices. Forestry can also play a part in the reduction of greenhouse gas emissions through carbon sequestration.

In the context of the State Planning Policy 1/92: *Development and conservation of agricultural land*, plantation forestry projects do not alienate land from other agricultural uses in the future; and therefore plantation forestry is considered compatible with the objectives of the State Planning Policy.

Fisheries and fish habitat

The commercial and recreational fishing industries provide significant economic value to the region directly through employment and indirectly through fish processing and marketing, support services such as boat supplies and services and bait and tackle suppliers. Fisheries activities in the region include commercial trawling, netting, reef line fishing, crabbing, aquarium fish collection and recreation harvest and sport fishing. Fishing is also a vital part of the culture and a significant source of food for Indigenous people in the region.

The region has high accessibility for fishing, which places pressure on available fish stocks. Increased conflict between commercial, recreational and tourist fishing is likely to arise as the region's population increases, particularly in the Cairns and Port Douglas areas. Opportunities for sustainable aquaculture to supplement the region's native fisheries should be encouraged and development assessment processes streamlined to better reflect the level of environmental risk.

Accelerated climate change has emerged as a key threatening process with implications for existing tidal fish habitats. Climate change is already impacting on natural systems and is likely to impact further on ecosystems worldwide. Tidal fish habitats that support fish stocks on which Queensland's fisheries rely are amongst the most susceptible to climate change.

At the interface between land and sea, tidal fish habitats, already stressed as a result of human-induced or other disturbance, are particularly vulnerable to climate change impacts. Additional pressures of climate change are likely to further alter the distribution and function of these key habitats. Fish and marine plants in relatively pristine fish habitats may also be particularly vulnerable if barriers to landward or poleward migration are present.

A broad range of fish habitat management responses are require to effectively deliver on the objective of sustaining the function and diversity of fish habitats to accommodate climate change:

- preserving intact natural habitat (seen as the least expensive and most effective response)
- understanding the inter-annual climate variability and its implications
- developing adaptation programs for landward and poleward habitat shifts
- establishing buffers between fish habitats and coastal development
- adaptive management through review and refinement of practices.

Given the potential scale of climate change and the likely shifts in species' climatic distributions, substantial increases in connectivity across tidal profiles and latitudes may be required through large scale buffer corridors and patches of fish habitat. The essential feature is adequacy of inter-connected fish habitats for large-scale ecological processes to continue. This will be achieved through coordination of habitat management across land tenures and uses (e.g. Declared Fish Habitat Areas and adjacent vegetation) and across scales (e.g. connecting remnants at one scale or biographic regions at another scale) (refer section 1.1).

The Department of Primary Industries and Fisheries has developed a range of policies and strategies to guide sustainable management of the region's forestry and fishery resources. Examples include:

- Queensland plantation strategy (in preparation)
- policies, codes and guidelines on the management of fish habitats
- sustainable land-based aquaculture policy.

2.5 Extractive industries and mineral resources

The region's quarry and extractive products of sand, gravel and quarried rock are of considerable importance to regional industries, particularly the construction industry (see map 7).

The availability of extraction sites on the coast is becoming more restricted due to environmental constraints and expansion of urban areas. Consequently, extraction industry operations on the Tablelands are becoming increasingly important.

State Planning Policy 2/07: *Protection of Extractive Resources* (DME, 2007a and b) identifies the location of extractive resources of state or regional significance as key resource areas. These areas indicate where extractive industry development is appropriate, and aims to protect those resources from development that might prevent or severely constrain current or future extraction when the need for the resources arise. The location of key resource areas has been a consideration in setting the boundaries of the urban footprint areas.

Minerals exploration and mining activity is focussed in the North East Mineral Province, which extends from Charters Towers to north of Atherton Tablelands and west to the Georgetown–Croydon area. Exploration for base metals, tin, molybdenum, gold and tungsten is rapidly expanding into areas with younger cover rocks, as the potential of these areas to host significant mineralisation is identified through advances in exploration technology and geological understanding.

The region also has identified geothermal energy potential that may encourage expanded exploration activity in the future.

Objective

Extractive industries and mineral resources, and associated transport routes and buffers are:

- identified
- protected for potential future extraction
- managed to minimise the impacts on environmental values.

Land use policies

2.5.1 Key resource areas and associated transport infrastructure are protected in accordance with State Planning Policy 2/07.

2.5.2 Extractive industries avoid loss or degradation of environmental values. Where loss cannot be avoided, impacts are minimised and mitigated.

2.5.3 Where extractive resources are removed from agricultural areas, the impacts of extractive activities on primary industries should be minimised and locations rehabilitated where appropriate for agricultural use.

2.5.4 Construction of temporary accommodation camps to support mining activity authorised under the *Mineral Resources Act 1989* may be permitted in a regional landscape and rural production area.

Explanatory notes

Extractive industries can generate substantial noise, dust and traffic movement. Conflicts can be created if urban development is located in close proximity to extractive industry sites. The location of key resource areas and associated buffer zones and transport routes has been considered in determining areas for future growth, so that such conflicts are avoided in the future (see policy 1.3.2). New urban development should not be permitted within identified separation areas of key resource areas, in accordance with State Planning Policy 2/07.

Within key resource areas there may be state or regional biodiversity or good quality agricultural land values. While utilisation of the extractive resources in the mapped key resource areas take precedence, any adverse impacts on those other values should be avoided or mitigated to the greatest practicable extent.

The region includes historic tin and gold mining areas, many of which are now within the Wet Tropics World Heritage area, where applications for new exploration and mining tenures are not accepted. Mining operations and leases are dealt with under the *Minerals Resources Act 1989*—outside IPA process—and administered by the Department of Mines and Energy. Key mineral resource areas will continue to be identified and should be protected from inappropriate development by local government planning schemes.

Mineral deposits are known to exist in the region and some are commercially viable at present. Current mining activity is likely to result in growth in mining operations in the west of and to the north of the region (DME, 2007c). Mareeba is well placed to act as an important service centre for the mining industry. The provision of freight and port infrastructure to support future mining activities within or adjacent to the region needs to be considered in infrastructure planning (see policy 8.3.1).

Much of the current mining activity in the North East Mineral Province is serviced by mining company employees who are not resident to the region, but fly-in and fly out on a rostered basis. Temporary accommodation for employees may be located on-site within the mining lease, or within or in close proximity to existing towns. The Kagarra Zinc mining camp located on the outskirts of Chillagoe will house several hundred employees when fully operational. The FNQ Regulatory Provisions do not preclude the development of such temporary miner's accommodation camps in the regional landscape and rural production area.

2.6 Rural subdivision

The land tenure pattern of farm lands in Far North Queensland differs across the region. The land is heavily fragmented on the coast and Tablelands, with many farmers holding multiple small lots less than 40 hectares in size. Further west, large leasehold lots predominate. This pattern of development has a historical context, being the result of a combination of factors, including land tenure, early soldier settlement schemes, planning scheme provisions, family lot excisions, and quality of the soils.

Far North Queensland has experienced rapid growth since the early 1990s. This has spurred on urban development on the fringes of existing towns and the establishment of many rural residential subdivisions throughout the rural landscape.

The regional plan introduces controls on subdivision of rural zoned land in the regional landscape and rural production area. These controls serve two purposes—to maintain larger lots sizes to ensure the economic viability of rural land holdings and to protect important agricultural lands and areas of ecological significance from encroachment by urban and rural residential development.

Objective

- The region's rural production areas and natural resources are protected by limiting land fragmentation.

Land use policies

2.6.1 Further fragmentation of agricultural land in the regional landscape and rural production area is avoided to maintain economically viable farm lot sizes.

2.6.2 Boundary realignments are only permitted in the regional landscape and rural production area where it can be demonstrated that a realignment of the property boundaries would

a) improve agricultural efficiency

b) facilitate agricultural activity or conservation outcomes or

c) resolve boundary issues where

(i) a house or structure is built over the boundary line of two lots

(ii) a lot has been intersected by the compulsory installation of infrastructure such as a road or electricity line.

2.6.3 Boundary realignments should allow for enough space within the newly created lots to accommodate buffers from adjoining land uses to mitigate adverse impacts and should not prevent existing industries from expanding or new agricultural enterprises from being established.

2.6.4 Boundary realignments should not be permitted to create new small lots for rural residential or rural lifestyle purposes (see section 4.6).

Explanatory notes

Past settlement patterns and subdivision approvals have resulted in a highly fragmented rural landscape, with up to 82 per cent of lots across the region being less than 40 hectares in size. In some locations, such as in the former Johnstone Shire, this figure is as high as 92 per cent (see Part D).

Land fragmentation has accumulative impacts which may contribute adversely to the region's economic potential, environmental health and community wellbeing. Issues include:

- fragmentation causing loss of good quality agricultural land
- declining economic viability of small cane farms
- reduced viability of sugar mills due to loss of cane lands to urban development or other uses
- fragmentation of wildlife corridors and areas of ecological significance
- land use conflicts between agricultural practices and urban living
- restrictions on access to and use of non-renewable resources
- infrastructure and servicing costs.

The FNQ Regulatory Provisions establish a minimum lot size of 60 hectares for subdivision in the regional landscape and rural production area to prevent further fragmentation of rural zoned lands. The minimum lot size in the rural areas is aimed at maintaining lot sizes that are more likely to maintain agricultural, economic viability and preventing residential or rural residential development outside designated urban footprint or rural living areas (see section 4.6).

The minimum lot size is based on an analysis and assessment of:

- land tenure and size of rural lots in the FNQ region
- minimum lot sizes in local government planning schemes
- number and tenure of lots impacted by a minimum lot size.

Boundary realignments allow for rearrangement of existing property boundaries to provide the flexibility to enable landholders to respond to changing circumstances. Local government should only approve boundary realignments where it can be demonstrated that the realignment of boundaries does not result in an additional lot and is needed to:

- improve agricultural efficiency (i.e. leads to a more efficient layout or more practical rural operation, such as separating productive from non-productive lands or shifting boundaries to include all irrigated lands on the one title)
- facilitate agricultural diversification (i.e. allowing smaller lots for high value crops)
- resolve land tenure issues (such as a house built across a boundary) or
- facilitate conservation outcomes (i.e. to separate a nature refuge from the remainder of the property).

Where boundary realignments are permitted, resulting lot sizes need to be appropriate to the surrounding rural production area and should not prevent existing industries from expanding or new enterprises from being established.

Boundary realignments also need to allow for sufficient space to accommodate buffers so that adjoining land uses such as residential activity are not adversely affected.

Boundary realignments should not be used to create new rural residential or rural lifestyle lots. Where there is an existing house (pre 9 May 2008), the proposed lot must be of a sufficient size to contain adequate buffers from agricultural uses.

Individual new lots created should not be split across road reserves or other tenures.

2.7 Rural precincts

The regional plan protects regional landscape and rural production values from the encroachment of urban activities through the designation of regional landscape and rural production areas. In these areas urban development and fragmentation is controlled. However the region has not yet reached its full economic potential and opportunities to grow and prosper—particularly in the diversification of the primary industries sector—should not be unduly restricted.

New opportunities to maximise the economic potential, provision of service facilities, and long-term sustainability of rural areas are likely to emerge in the future. Initiatives that may lead to improving prosperity within the region and which are not likely to adversely impact on regional landscape and rural production values should have a framework in place which enables their consideration. The declaration of a rural precinct is a mechanism that can be used to facilitate such initiatives where they would otherwise not be permitted under the regulatory provisions.

Objective

- Rural precincts achieve regionally significant economic, environmental and social gains.

Land use policies

2.7.1 Rural precincts encourage and support appropriate regional landscape, rural economic and social development opportunities.

2.7.2 Development within a rural precinct should complement and enhance the regional landscape values.

Explanatory notes

Rural precincts will enable the regional planning Minister to exempt development from the FNQ Regulatory Provisions to facilitate innovative economic or social development opportunities to effectively maintain regional landscape and rural production values.

A rural precinct covers land endorsed by the regional planning Minister in a gazette notice as a rural precinct for a specific use or a range of uses. The process of designation is described in the *FNQ Regional Rural Precinct Planning Guideline*.

Rural precincts may be designated for a number of purposes, including but not limited to:

- primary industry
- intensive animal production
- rural industry
- community facilities
- tourism and ecotourism
- Indigenous land use
- extractive resources
- forestry
- water supply
- nature conservation
- outdoor recreation and open space.

Before designating a rural precinct, the Minister must be satisfied that an exemption from the FNQ Regulatory Provisions was necessary in a particular instance to implement the regional plan's desired regional outcomes. Proponents of the rural precinct would need to demonstrate the need for and regional benefits of the exemption.

A rural precinct would usually cover a geographic area at a local or district level and is not intended to be used to initiate a review of the urban footprint or rural living area boundaries. The use of this provision is expected to be rare and limited to exceptional circumstances which the Minister is of the opinion may provide some significant benefit to the region which the regulatory provisions would otherwise exclude. The declaration of a rural precinct does not grant a development approval and will not preclude consideration of a proposal in terms of relevant local planning scheme provisions.

3. Strong communities

Desired regional outcome

The region's communities are vibrant, safe and healthy and resilient to climate change, and diversity is welcomed and embraced.

The FNQ region has been identified as having one of the fastest growing populations in Queensland (DIP, 2008c), which creates continuous change and challenges for communities. Rapid urban growth may bring prosperity to the region, but can cause disadvantage to some sections of the community if the growth is not well planned.

Building strong communities in FNQ will be assisted by improving the quality and safety of the built environment through sensitive urban design, strengthening regional activity centres, ensuring housing meets demand, and adequately planning for community services and facilities.

The government's vision for Aboriginal and Torres Strait Islander Queenslanders is to have their cultures affirmed, their heritage sustained and to have the same prospects for health, prosperity and quality of life as other Queenslanders (ATSIP, 2005).

Indigenous people are an integral part of, and make a major contribution to the FNQ regional community, sharing and contributing to the region's culture, economic and social development. The regional plan provides opportunities for Indigenous Queenslanders to be involved in planning processes and have input into decision making and management processes.

3.1 Social planning

Social planning is an essential component of all land use planning and should be integrated into rural precinct planning, structure planning, master planning and infrastructure planning processes. It can help identify necessary community facilities and services, and help designate land for community uses in planning schemes (see also sections 4.2 and 4.5).

Social planning can also be used to identify community and social issues and impacts in the planning and development process, and mitigate potential adverse social impacts of growth and development in the region, including climate change and oil vulnerability.

Consideration of socio-demographic trends and population shifts such as sea change, tree change and the grey nomad tourist movement helps to inform planning for future growth and infrastructure provision. For example, consideration of the grey nomad movement has, in some cases, led to the retention of existing caravan parks as a means of providing tourist and affordable accommodation. An ageing population has implications for a range of planning and design matters, such as residential design and provision of transport, and community and health services.

Objective

- The social needs of the community are appropriately considered in planning and development processes to maintain and enhance quality of life.

Land use policies

3.1.1 Land use planning and development decision-making processes incorporate social planning considerations.

3.1.2 Socio-demographic information is used to identify the effects of growth and change on regional communities and to inform social infrastructure planning.

3.1.3 Planning and development of new residential areas provides equitable access to services and avoids creating areas of disadvantage.

3.1.4 Greenfield communities and redevelopment areas are integrated with existing or adjacent communities to encourage social cohesion.

3.1.5 Appropriate levels of infrastructure and services are provided to rural towns and villages, consistent with the preferred settlement pattern and network of regional activity centres for FNQ (see Part D and section 4.2).

3.1.6 Planning and development urban design principles are adopted to ensure communities are resilient to the impacts of climate change and adapt in ways that minimise the region's contribution to the causes of climate change (see section 4.7).

Aligned strategies

3.1.A Social impact assessments are undertaken when new and expanding mining developments are proposed.

Explanatory notes

Demographic trends for the region suggest the proportion of older people in the population will increase considerably over the next 20 years and more people, both young and old, will live alone. This has implications for the way cities and towns are planned, and how housing and services are provided.

Older people will need housing within walking distance of shops and public transport. As the population ages and people live longer, residents will increasingly need options to stay in the community. Consideration of accessibility to services and infrastructure is also vital for other vulnerable persons with complex service needs such as people with a disability, people with short or long term illnesses. The Department of Communities Strategic Plan 2008-12 aims for better collaboration between government sectors when planning for and addressing issues relating to vulnerable and disadvantaged individuals, families and communities living in Queensland.

Climate change and oil vulnerability will also affect the way people live. Housing should be designed to cope with increased temperatures, potential flooding and more intense cyclonic events. Increases in petrol prices will place higher demands on public transport services. The Queensland Government's ClimateSmart Living campaign aims to help people understand how they can minimise and adjust to the impacts of climate change.

Resource developments, such as mining, can bring benefits to communities through the creation of new employment opportunities and stronger economies. The government, in partnership with industry and local government is strengthening social assessment within existing environmental impact processes. The *Sustainable Resource Communities Policy–Social Impact Assessment in the Mining and Petroleum Industries* (DTRDI, 2008a) recommends a range of measures to improve social impact assessment of mining proposals, including stronger linkages between social impact assessment and regional planning.

3.2 Social infrastructure

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

- facilities and services such as education, training, health, open space, recreation and sport, safety and emergency services, religious, arts and cultural facilities and community meeting places
- lifecycle-targeted facilities and services, such as those for children, young people and older people
- targeted facilities and services for groups with special needs, such as families, people with a disability, Aboriginal and Torres Strait Islander peoples and people of culturally and linguistically diverse backgrounds.

Additional community services and facilities will be required to meet the needs of an increasing regional population, and respond to changing community needs over time (see also sections 6.1 and 8.1).

Objective

- The current and future needs of the community are met through coordinated and sequential provision of appropriate social infrastructure.

Land use policies

3.2.1 The coordination of community services and facilities is considered and incorporated in land use planning.

3.2.2 Accessible social infrastructure that is resilient to the impacts of climate change is provided that is well located in relation to transport, residential areas and employment, in accordance with the regional activity centres network (see section 4.2).

Aligned strategies

3.2.A Planning and delivery of social infrastructure is improved by developing and linking with existing collaborative working relationships.

3.2.B Hubs of co-located multipurpose community facilities and services are provided, which can respond to changing and emerging community needs.

3.2.C Community inclusion is promoted by providing an equitable, affordable and appropriate public transport system in the principal regional activity centre.

3.2.D New and expanding mining developments prepare and/or review local area plans outlining implications and impacts on community infrastructure and services.

Explanatory notes

While social planning considerations should form an integral part of all land use planning, the delivery of social services is outside the scope of IPA. Collaborative partnerships are required between land use planners and service providers to ensure the desired regional outcome is achieved.

Social infrastructure should be provided in appropriate locations, consistent with the network of regional activity centres (see policy 4.2) and should be accessible to all residents of FNQ, including those in urban fringe areas, rural communities, and more remote Aboriginal communities. Social infrastructure should be provided in sequence with new residential development, particularly in greenfield areas located in outlying and fringe localities with high service and transport needs.

Where possible, opportunities to co-locate services, such as health practices or cultural and arts facilities, should be explored to enhance community access and use. The development of multi-purpose community spaces and facilities which can respond to changing and emerging community needs over time is also encouraged.

The provision of human services and associated infrastructure should acknowledge and account for the movement of people within FNQ—for example between Cairns and rural centres and between FNQ and adjacent regional areas such as Cape York, Torres Strait and the Gulf region.

Communities that benefit from resource developments through creation of new employment opportunities and stronger economies may also experience an increase in social infrastructure pressures such as access to housing and community services.

Several strategies and programs that can inform social planning and social infrastructure provision are:

- *Social Infrastructure Planning, Implementation Guideline No.5* (Department of Infrastructure, 2007a)
- *Land Use and Public Transport Accessibility Index* (Queensland Transport, 2005b)
- *Edmonton Sport and Recreation Facility Needs Study* (Final Report) (Cairns Regional Council, 2008a)
- *Gordonvale Sporting Precinct* (Cairns Regional Council, 2008b)
- *Open Space for Recreation and Sport, Planning Principles, A Guide for Local Government* (Department of Tourism, Sport and Racing, 1998)
- *Department of Communities Strategic Plan 2008-12* (Department of Communities, 2008).

3.3 Healthy and safe communities

Maintaining healthy communities is a key theme of the Queensland Government's Q2 vision for Queensland (Department of Premier and Cabinet, 2008). There are key links between urban planning practice and health determinants in a community. Research shows evidence of key links between the health of a community and a range of factors including:

- social disadvantage
- population characteristics
- social cohesion and sense of community
- access to social infrastructure
- safety and perceptions of safety
- housing affordability and housing density
- accessibility and transport
- physical activity and availability of public space and open space
- civic participation
- climate change and energy consumption
- water demand management (Queensland Health, 2005).

Urban planning and design play a crucial role in the development of safe and healthy communities. Urban design strategies are highly relevant in building safe communities and involve consideration of:

- good access and connections to places
- variety of place
- access to urban open space and natural areas
- adaptability and versatility
- pedestrian focused approaches
- sight lines and surveillance
- appropriate lighting
- space and place making.

Objective

- Communities are well designed, safe and healthy local environments that encourage active community participation and healthy lifestyles and prevent crime.

Land use policies

3.3.1 Crime prevention through environmental design principles are considered in the design and layout of greenfield communities and redevelopment areas.

3.3.2 State and local government and developers consider community health and safety issues in the planning and development of new urban areas and redevelopment sites including from the impacts of climate change.

3.3.3 Developments are designed, located and operated to mitigate the health impacts of biting insects.

Aligned strategies

3.3.A Community health and safety in urban and rural environments is improved by providing appropriate social infrastructure, places for community activity, and involving local communities in planning processes.

3.3.B Best practice urban design is utilised to create built environments that enhance community health and safety (see section 4.5).

Explanatory notes

The regional plan is based on the premise that all people have a right to access and use of public space. The provision of public and community space is essential to support community activity and wellbeing, particularly in newly developing and redeveloping areas. Provision of a range of places for community activity is important in fostering physical and mental health and wellbeing.

Open space, sport and recreation spaces and facilities, and walking and cycling paths are crucial in contributing to the physical and mental health and wellbeing of a community, particularly in greenfield development. New development should be planned and designed for accessibility, particularly for people with a disability and for our ageing population.

Principles of crime prevention through environmental design (CPTED) (Queensland Police Service, 2007) should be used to design new places and spaces which enhance community safety. Other relevant guidelines include:

- *Strong Communities Handbook* (Department of Communities et al, 2006).

The health impact of biting insects to residents and tourists in localised areas can be significant. Good urban planning and design can play an important role in minimising the potential risks to the community (see section 4.7). Strategies to mitigate the health impacts are provided in Queensland Health's *Guidelines to minimise mosquito and biting midge problems in new development areas* (Queensland Health, 2002).

3.4 Community engagement and capacity building

Regional planning is not just about land use planning. It is about building new communities, and integrating them with existing communities. The development of new communities involves not only the built environment, but also how people live and work together, the relationships that are formed in that community, how the community develops over time, and its capacity to deal with and respond to change.

Community engagement relates to the decision making processes involving government and community interactions, ranging from information sharing to community consultation, and in some instances, active participation in government decision making processes. This requires a good understanding of the special needs and interests of different sector groups within the community.

Strong community engagement practice enables strong community support and ownership of the outcomes. Community capacity is the set of skills, relationships and networks that collectively exist in a community. These provide social support, especially when people need assistance. The more capacity a community possesses, the more likely it is to be able to take part in and influence decisions and processes for change.

Objective

- Engage the community and build community capacity through the planning and development of future communities.

Land use policies

3.4.1 Community engagement is recognised as an essential part of planning processes, enabling local communities to identify, articulate and enhance their sense of place and wellbeing.

3.4.2 Community engagement and community capacity building programs are implemented when planning for greenfield developments and redevelopment projects.

Aligned strategies

3.4.A Traditional Owners are recognised as stakeholders in land use planning processes and their relationship with the land, sea and natural resources is respected.

3.4.B The special interests of Indigenous people are taken into account in the management and development of the region.

Explanatory notes

Community capacity is particularly important in newly developed areas and areas undergoing significant change and redevelopment. Capacity building events and activities can develop social capital and help to create a strong sense of identity and belonging in a community.

A framework for effective engagement with Traditional Owners should consider regional, subregional and local levels of planning. Traditional Owners are building capacity to engage in these planning processes through a culturally appropriate engagement framework. They have expressed a desire for proper acknowledgment, respect and commitment to progress their interests and responsibilities through planning processes.

When engaging Aboriginal and Torres Strait Islander communities, it should be recognised that both Traditional Owners and historical and contemporary residents are important stakeholders with differing needs and aspirations. The Strong Communities Handbook (Department of Communities et al, 2006) provides guidance in community capacity building.

3.5 Sense of community, place and identity

A sense of place and local identity can be found in the distinctive features of an area's physical landscape, built environment, population characteristics, economy, arts and cultural heritage. It can also be based upon the relationships, networks and connections between the people who live and work in a community. This sense of place and local identity is important in the building of new communities, and sustaining existing communities (see section 2.1).

Objective

- Manage urban and rural growth and development to create, maintain and enhance a sense of community, place and local identity throughout the region.

Land use policies

3.5.1 Adequate provision is made for public spaces and places for community activities when planning and designing greenfield developments and infill areas (see policy 3.6.2).

3.5.2 Protect and enhance existing local and regional open spaces when designing and redeveloping greenfield, infill and new areas.

3.5.3 Plan for new open spaces when designing and redeveloping greenfield, infill and new areas both locally and regionally.

3.5.4 Local character and identity is reinforced through planning and development of regional activity centres, rural towns, greenfield developments and infill areas.

3.5.5 Indigenous people's strong connection to land and sea is recognised and respected when planning for development of regional activity centres, rural towns, greenfield developments and infill areas.

Explanatory notes

FNQ has a unique tropical character which can define an individual's sense of place (see section 4.5). Developing a sense of place is particularly important in greenfield development. Community engagement can inform planning for new development by identifying key local characteristics that define a place and the elements of a place that are important to local people. Community engagement can also result in greater community ownership of planning and design outcomes.

The provision of open spaces, public spaces and places, used for a range of community activities, are an essential component of any greenfield, infill or redevelopment process. The Queensland Government has set a target to protect 50 per cent more land not only for nature conservation but also for public recreation: this is an integral part of the unique Queensland lifestyle (Department of Premier and Cabinet, 2008). Retaining the character and sense of place of existing rural communities in FNQ is also vital.

Aboriginal and Torres Strait Islanders have strong family and cultural ties that are closely connected to the land and sea. Maintaining the connection with their land is important for social and cultural well being. Respecting these strong connections to the land and sea is important for the on-going survival of their culture.

3.6 Arts and cultural development

FNQ has a diverse range of cultures, involving the unique customs, beliefs, values, knowledge, heritage, traditions and way of life of this area. New residents will bring new ideas, innovation and fresh energy to the region, ensuring its vigorous multicultural and international focus will continue to develop and prosper.

Cultural spaces, centres, and facilities play an important role in providing a place for community events, functions, meetings, and festivals, used by a range of different cultural groups. Maintaining and establishing regionally significant infrastructure for cultural events, entertainment, sport, and conventions will foster creative art, recreation and leisure industries that will stimulate wealth and job creation (see section 3.5).

Objective

- Support cultural development and the arts through the planning and provision of cultural infrastructure and spaces.

Land use policies

3.6.1 Provision of public spaces for cultural activities, events and festivals, including cultural precincts where appropriate, is considered when planning communities, particularly in greenfield development.

3.6.2 New developments incorporate arts and cultural infrastructure and facilities at a scale that is consistent with the scale of the development.

3.7 Cultural heritage

Cultural heritage places and landscapes are places (either natural or built) which are important to the community because of their cultural heritage significance. The regional plan recognises the significance of different cultures and the importance of conserving Indigenous and non-Indigenous, natural and cultural heritage.

Aboriginal and Torres Strait Islander cultural heritage places and landscapes are especially important in FNQ. Indigenous cultural heritage may include significant areas, objects or places with evidence of archaeological or historic significance of Aboriginal or Torres Strait Islander occupation.

Intangible aspects such as language, song, stories and art are part of the Aboriginal and Torres Strait Islander peoples' strong sense of heritage as well as physical places and objects. Protecting knowledge and information associated with cultural heritage places is as important as the physical protection of a place.

Objective

- Identify, protect and manage the region's unique cultural heritage, including historic places and landscapes of significance to the community.

Land use policies

3.7.1 Queensland heritage places and local heritage places are identified in local government planning schemes.

3.7.2 Development in or adjacent to Queensland heritage places and local heritage places does not compromise the cultural heritage significance of those places.

3.7.3 Indigenous cultural heritage in the form of landscapes, places and objects is protected, managed and conserved through local government planning instruments

Aligned strategies

3.7.A Where the knowledge is available, and it is culturally appropriate, places of significance are added to the Aboriginal cultural heritage register.

3.7.B Local governments are encouraged to identify local heritage places of cultural heritage significance through a heritage survey utilising key historical themes for Far North Queensland.

Explanatory notes

The protection, conservation and management of Aboriginal and Torres Strait Islander cultural heritage is undertaken through the *Aboriginal Cultural Heritage Act 2003* and *Torres Strait Islander Cultural Heritage Act 2003*. These laws establish a duty of care for all land users regardless of tenure which extends to all levels of government as well as developers. It requires that all reasonable and practicable measures are taken to ensure activities do not harm cultural heritage. For some activities a cultural heritage management plan is required, such as those developments requiring an environmental impact study. The legislation establishes a cultural heritage register that records significant sites along with guidelines that set out reasonable and practical measures to avoid harming cultural heritage. This helps Queenslanders to meet their duty of care.

Non-Indigenous cultural heritage includes artefacts, places and buildings that are commonly of European origin. Historic cultural heritage also covers shipwrecks and artefacts from pre-colonial occupation, such as visits by Indonesian fishermen to Northern Australia prior to 1788.

The major piece of historic cultural heritage legislation is the *Queensland Heritage Act 1992*. The Act makes provision for the conservation of Queensland's cultural heritage by protecting all places and areas entered in the Queensland Heritage Register. The register now comprises state heritage places, archaeological places and protected areas. Development of a place registered under the Act is assessable development.

The Act also requires a local government (unless it has been exempted) to keep a local heritage register of places of cultural heritage significance in its local government area. The *Queensland Heritage Regulation 2003* includes a local heritage place code—an IDAS code for development on a local heritage place. The *Queensland Heritage Regulation 2003* also includes a list of local governments for which the local heritage provisions do not apply, as their planning schemes are determined as having satisfactorily identified and provided for the conservation of heritage places in its local government area.

The EPA is currently undertaking a statewide survey of Queensland's heritage places. Key historical themes that are relevant to the different regions of Queensland have been identified in the *Queensland Cultural Heritage Places Context Study—Report to the EPA* (Blake, 1996). These themes should be utilised by a local government when undertaking a local heritage survey of its area.

Historical themes for FNQ (non-Indigenous)

Peopling places

- The role of Chinese in mining industry and commerce
- The role of Chinese, Japanese, Italians and South Sea Islanders in development of agriculture
- The presence of Afghans on the mining fields and the use of camels to transport
- ore prior to railways

Exploiting, utilising and transforming the land

- Mining, in particular development of tin mining in Herberton district and copper around Chillagoe
- Primary industry (cane growing) focussed on Tully, Innisfail, Babinda, Cairns and Mossman
- Primary industry (horticulture and grazing), particularly in the Innisfail district and on the Atherton Tablelands
- Primary industry (forestry) on the Atherton Tablelands
- Development of hydroelectricity schemes on the Barron and Tully rivers

Developing secondary industries

- Tourism industry centred on the Great Barrier Reef and the Tablelands with Cairns as the focal point

Moving goods, people and information

- Development of transport routes to the Atherton Tablelands—both road and rail

Maintaining order

- The use of the far north in World War II

3.8 Strengthening Indigenous communities

It is critical that Aboriginal and Torres Strait Islander Queenslanders share the benefits of the Smart State to the same degree as other citizens. While Aboriginal and Torres Strait Islander peoples make up around one eleventh of the population in FNQ, collectively they are the most disadvantaged. They generally live about 20 years less than other Queenslanders and their babies die at a higher rate than the rest of the population. The Queensland Government is looking at different ways of working with Aboriginal and Torres Strait Islander peoples to ensure they have the same rights and opportunities as other Queenslanders, and enjoy comparable standards of living.

The Queensland Government is committed to ensuring there are no systemic barriers preventing any group of Queenslanders from having an equal share in the State's prosperity. Where barriers do exist, the government and communities share responsibility for breaking them down or finding ways to overcome them.

Within the FNQ region there are two Aboriginal council areas—Yarrabah to the east of Cairns and Wujal Wujal on the northern boundary of the region. Aboriginal councils take responsibility for a broad range of activities within communities, not just municipal functions. They build, operate and maintain a range of infrastructure, as well as providing housing and social services that are beyond the scope of mainstream local government. Whilst these councils also aim to provide services such as road building and maintenance, rubbish removal and many of the services that mainstream councils provide, they are disadvantaged by not having the same major income stream from levying rates. Consequently most of the Aboriginal councils' income is reliant on grants from both federal and state government.

Objectives

- Regional planning processes recognise and facilitate the need to increase Indigenous economic and housing opportunities.
- Indigenous local government areas meet best practice land use planning and local administration frameworks, which provide equitable access to infrastructure and services for all community members.
- Regional planning processes recognise and facilitate implementation of Indigenous Land Use Agreements.

Land use policies

3.8.1 IPA planning schemes are prepared for Wujal Wujal and Yarrabah local government areas.

3.8.2 The special requirements of Indigenous people wishing to live on land held in trust is considered as part of the development of local land use planning frameworks.

Explanatory notes

In 2004, wide ranging legislative reform was initiated by the Queensland Government to transition Aboriginal community councils to full shire council status by 2008. January 2007 saw the final transition of Aboriginal councils to full shire council status and the councils are working towards developing planning schemes that are compliant with IPA. In the meantime the assessment manager for development in these areas is determined under Schedules 8 and 8A of IPA and Schedule 2 of the *Integrated Planning Regulation 1998*.

The *Partnerships Queensland: Implementation Progress Report 2006* (Department of Communities et al, 2007) confirms the government's continued commitment to improved governance for Aboriginal and Torres Strait communities. Partnerships Queensland is the Queensland Government's primary policy initiative for Indigenous Queenslanders and provides advice and support to local government in establishing successful partnership arrangements. Aboriginal and Torres Strait Islander peoples' involvement seeks to empower their community to identify its own issues, strategic directions and solutions.

The *Community Governance Improvement Strategy* is a major initiative under the government's *Meeting Challenges, Making Choices* strategy to build capacity and strengthen the standard of corporate governance in Aboriginal shires. It is a comprehensive package of activities aimed at improving the standard of local government in Aboriginal and Islander communities.

Capacity building of councils is one component of a whole-of-community need. A strong, autonomous and capable local government network is fundamental in addressing disadvantage in a broad range of cultural, economic, social and physical indicators in Queensland's Aboriginal and Torres Strait Island communities.

State and local governments responsible for planning and land management must gain an enhanced appreciation of the valuable contribution that Aboriginal and Torres Strait Islander peoples can provide. For land use planning processes to adequately address the needs of the Aboriginal and Torres Strait Islander community they must include appropriate involvement mechanisms that recognise the diversity within this community.

Indigenous Land Use Agreements

An Indigenous Land Use Agreement (ILUA) is an agreement between a native title group and others about the use and management of land and waters. ILUAs can be made separately from the formal native title process but they may also be part of a native title determination.

Some practical outcomes Indigenous groups have gained include the establishment of cultural centres or education trust funds, co-management of national parks, commitments to Indigenous employment and the creation of parks and reserves.

ILUAs in the FNQ region provide for Aboriginal land ownership and living areas, conservation areas, extended national parks, public access to designated tourist sites, some grazing areas and restrictions on the hunting of rare and threatened species.

Under the Cape York welfare reform trials the Commonwealth and Queensland Governments have agreed to work together to improve the level of co-ordination and co-operation in the delivery of services in Indigenous communities. This framework aims to place a priority on increased law enforcement, enhanced financial incentives, improved health outcomes, child safety, youth and family support, diversionary activities, improved education opportunities and better housing. Initiatives within the housing stream of the Welfare Reform Action Plan aim to assist individuals and families to purchase their own home. Other projects in this stream are implementing mainstream tenancy agreements and encouraging families to take pride and responsibility for the condition of their homes and backyards.

One method for improving levels of Indigenous home ownership has eventuated through amendments to the Indigenous Land Acts. The amendments in the *Aboriginal Land Act 1991* aim to:

- enable home ownership and provide leases for housing
- provide greater certainty of tenure in townships and to assist the transfer process for Deed of Grant In Trust (DOGIT) land areas outside of townships
- encourage economic development in Indigenous communities
- facilitate the construction of public infrastructure.

One of the Queensland Government's current priorities is strengthening Indigenous communities, this is happening through a number of initiatives focussing on normalising housing arrangements to improve prosperity and quality of life. However, the differing land tenure arrangements on many Indigenous communities pose a significant challenge to achieving this goal. Often the land where Indigenous people live is held in a trust arrangement which does not allow normal freehold title for each house. Alternate mechanisms are required to facilitate the desired housing outcomes.

To assist these initiatives the regional plan designates an urban footprint around several Indigenous communities, such as Mossman Gorge and Jumbun (south west of Tully). This will allow for further subdivision of large lots, thus facilitating the creation of individual titles for existing and proposed housing in the future.

Areas needing further investigation have also been identified. These are where some form of residential development is intended on lands held in trust by Indigenous communities, often as a result of an Indigenous Land Use Agreement (ILUA), but the detailed community development planning has not yet been undertaken. In these situations the land remains in the regional landscape and rural production area land use category until such time as adequate investigations into the land's capability and suitability, and infrastructure requirements have been undertaken. A change to a more appropriate regional land use category may be required to facilitate implementation of the ILUA once agreement has been reached between all parties to the ILUA.

Indigenous Land Use Investigation Areas

The Queensland Government and the Eastern Kuku Yalanji People have signed a series of Indigenous Land Use Agreements to resolve native title issues over lands between Mossman and Cooktown in Far North Queensland, within the traditional country of the Eastern Kuku Yalanji people. The agreements recognise the native title rights of the Eastern Kuku Yalanji people. They provide for Aboriginal land ownership and living areas, conservation areas, extended national parks, public access to designated tourist sites, some grazing areas and restrictions on the hunting of rare and threatened species.

The region is of international significance as a large part incorporates the Wet Tropics World Heritage area as well as state reserves and roads. The negotiated agreements provide a platform for land tenure and management frameworks that will protect the outstanding environmental values of the Wet Tropics.

The agreements identify a "pink zone" as part of a Cooperative Management Agreement between the Eastern Kuku Yalanji people, Wet Tropics Management Authority and the State of Queensland. The pink zone is Aboriginal freehold (freehold tenure under the *Aboriginal Land Act 1991*, held in trust).

Lands subject to the pink zoning have been agreed to after extensive negotiation between all parties. The areas were identified after significant research into the environmental and accessibility values of the various areas.

Most of the pink zone is located in the Wet Tropics World Heritage area (WTWHA), and all of the pink zone in the WTWHA will be subject to the Cooperative Management Agreement with WTMA. This balances the aspirations of the Yalanji to reside on their traditional lands with the World Heritage values of the area; the focus of the agreement is on planned community development.

An investigation area has been allocated over the pink zone of the Kuku Yalanji Indigenous Land Use Agreement. It is not envisaged that the whole investigation area is suitable or will be developed. Further investigation of the area identified will be required as the community development planning process identifies land use constraints, infrastructure requirements and the precise areas to be developed over time.

In the south of the region near Cardwell a small amount of land that is part of the Girramay ILUA has also been identified as an investigation area. The Traditional Owners, state agencies and Cassowary Coast Regional Council will need to work together to determine the future configuration of this parcel of land and any subsequent requirements for planning scheme amendments or changes to the regional plan land use categories (see map 8).

4. Urban development

Desired regional outcome

The region has an interlinked network of well planned, discrete, sustainable urban centres which reflect best practice urban and tropical design and offer convenient and accessible residential, employment, transport and other service opportunities.

The anticipated growth across the region will vary, with Cairns as the principal urban centre growing more rapidly than the region as a whole. Such growth will place high demand on urban systems, infrastructure and services.

The development of the region's urban centres is influenced by tourism, agriculture, mining and service industry activity. Tourism is a prominent influence on Port Douglas, Kuranda and Mission Beach. Other centres such as Atherton, Mareeba and Innisfail rely heavily on primary industries and their role as service centres for surrounding districts. Centres on the Tablelands are also experience growth related the increase in mining activity in the North East Mineral Province.

The location, layout, land use mix and operational aspects of the region's urban areas can have a significant influence on accessibility, cost-efficiency, community quality of life and opportunities for economic activities. Urban growth must be well planned if the region's desired regional outcomes are to be achieved.

The tropical FNQ region is particularly vulnerable to potential disasters. Climate change, oil vulnerability and natural hazards and their effects must be considered in land use planning. Planning responses should address natural hazard risks such as the threat of cyclones and tsunamis, bushfire, drought, storm surge, sea level rise and flooding, which may intensify with climate change.

4.1 Compact urban form

Current population and household size projections indicate that another 50 000 new dwellings will be needed across the region by 2031 to address housing needs. Continuing to provide a high proportion of dwellings in low density developments on the urban fringe will not match the changing structure of households or meet the needs of a growing population. Providing a compact urban form with mixed use and a high quality living environment can help create more active, stronger communities.

One of the key challenges in managing population growth is avoiding urban sprawl. Urban sprawl is the spread of urban suburbs into rural areas such as farmland, forests and coastal lands that lie on the outer edges of towns and cities. In other words, urban sprawl is characterised by development that increases the distance between the city centre and its outer edge. Urban sprawl typically involves uniformly low density residential development on greenfield land with limited community services. Many rural residential developments match this description. Low density developments on the edge of urban areas can constrain future urban growth.

Urban sprawl can have a range of adverse impacts upon the community. Residents will generally need to travel large distances for a range of activities and rely heavily upon individual car transport. Cars are a major contributing cause to climate change, and reliance on this mode of transport makes communities vulnerable to peak oil. The larger distances tend to result in higher infrastructure costs, lower infrastructure efficiency due to maintenance costs, and in many cases, a higher living cost. Urban sprawl can also result in the loss of biodiversity, agricultural land, scenic amenity and personal health which are valued by the broader community.

To ensure sustainable development, future urban growth needs to be contained within the urban footprint and managed in a way that:

- uses land efficiently
- minimises transport demands
- encourages the cost effective provision of infrastructure and services
- mitigates and adapts to projected climate changes
- is consistent with the community's economic, social, cultural and environmental values
- creates towns with their own character and identity
- promotes and supports viable activity centres that offer a range of services and maximises local employment opportunities
- fosters a sense of departure and arrival to and from urban areas.

This is achieved through identifying a preferred pattern of development and regional land use categories (see Part D) which provide certainty for government, the development industry and the community about areas where urban development may occur and those which are to be maintained to protect and enhance natural and rural values.

Targets

- 40 per cent average of new dwellings constructed in Cairns are from infill and redevelopment by 2031
- 20 per cent average of new dwellings constructed in Atherton, Mareeba and Innisfail are from infill and redevelopment by 2031
- 15-20 dwellings per hectare average net dwelling density is achieved within the Mount Peter Master Planned Area by 2031
- 15 dwellings per hectare average net dwelling density is achieved in new greenfield developments in Cairns by 2031
- 12 dwellings per hectare average net dwelling density is achieved in new greenfield developments in Atherton, Mareeba and Innisfail by 2031.

Objective

- Urban development is consolidated and compact to facilitate land use and infrastructure efficiencies, conserve regional landscape and rural production land, and promote a range of other community benefits.

Land use policies

4.1.1 Urban development is contained within the urban footprint (maps 1a–1k).

4.1.2 Urban development is sequenced to ensure logical and orderly land use and infrastructure delivery.

4.1.3 Development within the key regional growth areas achieves the strategic planning intent of the subregional narratives (Part D).

4.1.4 Higher dwelling densities are achieved within appropriate areas.

4.1.5 Mixed use and transit oriented development are focused in and around regional activity centres (map 9) and public transport nodes (map 17).

4.1.6 An increasing proportion of dwellings are supplied from infill and redevelopment within appropriate areas.

4.1.7 Buildings heights are limited within village activity centres to maintain the village character and scenic amenity.

4.1.8 Activity centres are provided with growth areas, notably the Mount Peter Master Planned Area, that maximise local employment opportunities, availability of services, promote walkable neighbourhoods, and the use of alternative forms of public transport through transit orientated communities

Aligned strategies

4.1.A An urban land monitoring program monitors residential land and housing activity including dwelling density targets.

Explanatory notes

All land in FNQ has been designated into either the urban footprint, rural living area or regional landscape and rural production area (refer to Part D). The urban footprint sets a clear boundary for urban growth. This is an important step in facilitating urban consolidation, compact form, and protection of the region's significant regional landscape and rural production values.

Urban development is best located within or adjoining existing urban areas where greater land use synergies can be achieved. This includes social infrastructure such as educational facilities (e.g. schools, universities) and health facilities (e.g. hospitals, retirement villages, aged care). These facilities can act as community anchors and should generally be located within the urban footprint to facilitate access and infrastructure efficiency. In some instances this may not be possible, for example, where small primary schools are located in or near small urban centres within the regional landscape and rural production area.

Appropriate sequencing of development is essential for orderly and efficient land use and infrastructure delivery. Subregional narratives, priority infrastructure plans and planning schemes may provide sequencing intent. Development should extend from existing developed areas rather than create disjointed developments. Development between existing urban areas should extend from the area better serviced by infrastructure, usually the larger area, or result in significant community benefit. Structure plans will need to provide greater direction on sequencing requirements.

The intent of land use policies 4.1.2 and 4.1.3 is also to avoid development of rural zoned land within the urban footprint until planning scheme amendments and infrastructure planning have been undertaken. Not all rural zoned land included in the urban footprint is likely to be suitable for urban development. Development should be contained within the existing appropriately zoned land unless there is an overriding public need, additional areas are assessed as being suitable for development with no adverse physical or environmental constraints, and such development can facilitate further urban consolidation. Rural zoned land in the urban footprint should not be developed before an appropriate urban zoning is in place in the planning scheme.

The regional plan seeks to develop walkable neighbourhoods with defined centres (refer to sections 4.2 and 8.1). The highest densities and mixed uses should be focused in the core of the centre. Lower density housing may be suitable on the edges of the neighbourhood with increasing density towards the centre.

The dwelling density targets are forward looking and relate primarily to the four largest urban areas, Cairns, Innisfail, Mareeba and Atherton. The targets are not intended as a fixed target for individual development proposals. Rather, they are intended to be achieved through detailed strategic planning, as part of local government planning schemes. Achieving a greater mix of housing will also require the commitment of land owners and developers and adaptation by the community.

The dwelling density targets represent an annual average of new dwellings constructed in broad-hectare, infill and redevelopment sites in low, medium and high rise buildings where appropriate. The targets are not meant to be reached by uniform density, such as all high rises or all low rises, but by an appropriate mix of housing types. This includes secondary dwellings, caretaker facilities, multiple dwellings, boarding houses, aged care facilities and nursing homes. The intention is also not to create increasingly smaller lots with increasingly larger houses. The Queensland Development Code sets a limit on site coverage for detached houses.

Higher dwelling densities will need to be achieved in transit oriented communities (see section 8.1). Transit oriented communities are currently being investigated at Palm Cove, Edmonton, Smithfield, Redlynch, Cairns CBD, Earlville and Gordonvale (map 17). Other potential transit oriented communities, such as Mount Peter, will be investigated through the Cairns Transit Network (under preparation) and structure plan. Planners, developers, and the community will need to consider the role of proposed activity centres and changes to existing activity centres in the achievement of transit oriented communities in the assessment of any such proposals. Master planning of these communities will help achieve the desired outcomes expressed in tables 8 and 9.

Medium and high dwelling densities may not be appropriate in all locations and may require significant infrastructure investment or highly sensitive design and construction, for example where sites contain:

- cultural heritage or character values
- biodiversity or other natural values
- scenic amenity values
- natural hazard risks e.g. landslide, bushfire, flooding
- climate change risks e.g. storm surge, sea level rise
- infrastructure constraints e.g. age, condition, capacity.

Land use policy 4.1.7 seeks to protect the values and character of village activity centres. Village activity centres such as Kuranda and Mission Beach have a strong village feel and linkages with regional landscape and rural production values. Building heights should generally be limited to two storeys in these and other village activity centres.

Planning scheme proposals to increase density at specific localities must ensure that an appropriate balance of regional planning objectives can be achieved. This includes maintaining the valued FNQ lifestyle and character, tropical urban design and open space. Both on and off-site impacts will need to be assessed, including potential environmental impacts. For example it would not be appropriate to allow higher dwelling densities at Mission Beach than those identified in the current planning schemes due to the serious threat that increased traffic would have on the endangered southern cassowary. Similarly, it is not intended that dwelling densities increase in the area north of the Daintree River.

Dwelling density

Dwelling density is the number of dwellings compared to an area of land. The regional plan uses net dwelling density. Net dwelling density includes residential zoned land, local roads and parks. Gross dwelling density includes the residential zoned land, land zoned for other purposes (e.g. industrial, commercial) and regional and local roads and parks. At the other end of the scale, net dwelling density including only residential zoned land.

Gross dwelling density is lower than net dwelling density as it includes a larger area of land allocated for non-residential use.

Indicative meanings of high medium and low density and high medium and low rise building scales are provided in tables 5.1 and 5.2. These are approximations only for FNQ and are not necessarily comparable to metropolitan areas. While related, density and scale are not always on par. For example, a low rise building can achieve medium density.

The key focus of the dwelling density targets is to provide an appropriate housing mix that meets the needs of the region's growing population while avoiding urban sprawl and environmental and economic impacts.

Gross dwelling density

Net dwelling density

Table 5.1: Net dwelling density

Density	Net dwellings density (dwellings per hectare)
High density	Over 50
Medium density	15–50
Low density	Under 15

Table 5.2 Development scales

Scale	Building height
High rise	Over 10 storeys
Medium rise	Between 4 and 10 storeys
Low rise	Up to 3 storeys

4.2 Regional activity centres

Regional activity centres support a concentration of activity including business, employment, research, education, services and higher density living. They are typically centred upon the Central Business District (CBD) of a city, and the business district or main street/s of a town, and provide a range of essential urban services and facilities such as retail, commercial, government, community, cultural, entertainment, recreation, health and educational facilities.

Regional activity centres are vital to the delivery of a sustainable settlement pattern. They are economic engines and focal points for social interaction and public life, contributing greatly to local identity, sense of place and lifestyle. The concentration and co-location of goods and services, facilities, jobs and housing in highly accessible locations facilitates multi-purpose trips and alternative modes of transport such as walking and cycling. This is a key strategy for reducing travel demand in response to oil vulnerability and climate change.

Far North Queensland contains an inter-connected network of regional activity centres. The function and scale of these centres and associated levels of service varies considerably across the region. Regional activity centres have been designated in accordance with the scale and type of activity, population and urban structure, and infrastructure, and include a principal regional activity centre, major regional activity centres, district regional activity centres, village activity centres and rural activity centres (see table 6 and map 9).

The primary purpose of the regional activity centre network is to identify the future centre hierarchy in the preferred pattern of development. Centre vitality and viability can be facilitated by avoiding competition between lower and higher order centres, and at a finer scale, by avoiding out-of-centre development. This will need to be balanced by the other objectives of the regional plan which seek to maximise local employment opportunities (i.e. self containment) and access to a broad range of services to minimise the need for car based travel to other centres in the region.

Objectives

- To identify a regional network of activity centres to support the preferred pattern of development and promote self-containment.
- To promote regional activity centre vitality and viability via a proactive plan-led approach to land use and infrastructure allocation.

Land use policies

4.2.1 Regional activity centres are identified and operate as a network in accordance with the regional hierarchy (see table 6 and map 9).

4.2.2 Development of regional activity centres results in consolidation in the central core and surrounding frame, is of appropriate type and scale, and is accommodated by efficient use of land and buildings.

4.2.3 Regional activity centres provide for mixed use with a high quality pedestrian environment and public spaces that are accessible, safe, active, and encourage walking and social interaction.

4.2.4 Development within regional activity centres conserves or enhances the local character and sense of place, existing activity generators, and landscape values.

4.2.5 Active street fronts are maintained in regional activity centres in the form of non-residential uses on ground level and street-fronting layouts.

4.2.6 Centre activities are encouraged within regional activity centres and should only occur outside of such centres where:

(a) there is a demonstrated public need and sound economic justification

(b) there are no alternative sites in-centre

(c) there would not be an adverse impact upon the functionality of surrounding centres, infrastructure delivery, traffic congestion, and amenity of any adjoining residential areas

(d) the site is readily accessible by a range of transport modes including public transport (where available), walking and cycling.

4.2.7 Local activity centres are generally located within 400 metres of population catchments in highly accessible locations within the urban footprint.

Aligned strategies

4.2.A Government investment in infrastructure and service delivery is guided by the regional activity centre network.

Explanatory notes

The regional activity centre network only includes regional activity centres. Local governments may additionally designate local activity centres in planning schemes. The regional activity centres are based upon existing centre localities, except for Edmonton which will be located on vacant land known as Mann's Farm (map 9). New regional and local activity centres are expected to play a major role in delivering the objectives of the regional plan in the Mount Peter Master Planned Area and will need to be identified through the structure planning process.

There are differences in the scale and function of regional activity centres both across the hierarchy and within each centre type. For example, Cairns central business district is the principal regional activity centre whereas Chillagoe is a rural activity centre. Mossman and Port Douglas are both district regional activity centres. Mossman largely has an administrative and rural services role, whereas Port Douglas has a strong tourism focus.

The regional activity centre network is dynamic. There may be a need to signal future centre regeneration by expanding the urban footprint, promotion of centres to a future higher order function, and designation of new centres. Any changes in the regional activity centre hierarchy will be identified by the regional plan rather than development or planning scheme proposals. The intended future role and function of regional activity centres is identified in Part D subregional narratives. section 5.1 also contains descriptions of economic activity centres.

A regional activity centre core is intended to be developed as the physical, social, commercial and functional focus for a city, town, or village and surrounding areas and include a combination of buildings, landscaped areas and streets which provide for major social, cultural and economic needs of the population.

The regional activity centre frame is intended to provide support facilities and services to the activity centre core, and to provide a transition between the activity centre core and the urban residential areas. The activity centre frame accommodates higher levels of activity than the surrounding land use elements but a slightly lower level of activity than the activity centre core. This differentiation will be reflected in the spatial arrangement, type and intensity of land uses and the physical form of development. The overall emphasis in the development of the activity centre frame is flexibility, accessibility and integration of activity and the built form with the activity centre core, transport system, open space and the path network.

The main centre activities to which the land use policies apply include:

- retail, including large format retail, warehouses and factory outlet centres
- leisure, entertainment facilities and intensive sport or recreation uses such as cinemas, restaurants, bars, pubs, night-clubs, casinos, health and fitness centres, indoor bowling centres and major sports facilities
- health, education, justice and emergency facilities
- arts, culture and tourism theatres, museums, galleries and concert halls, hotels and conference facilities
- regional open space such as beaches, esplanades, botanical gardens, parks and malls
- community facilities such as libraries, halls and churches
- higher density housing
- major trip generators such as food markets.

Growth of regional activity centres should to be accommodated by efficient use of land and buildings in the activity centre core and frame wherever possible. It is acknowledged that in some instances this is not always possible. The preferred approach should be to locate centre activities based on the following order:

1. locations within the centre where suitable sites or buildings for conversion are, or are likely to become, available, taking account of an appropriate scale of development in relation to the role and function of the centre; and then

2. on the edge of the centre locations, with preference given to sites that are or will be well-connected to the centre; and then
3. outside of the centre locations, with preference given to locations which are or will be well served by a choice of transport modes and which are close to the centre and have a high likelihood of forming links with the centre.

Development outside of the centre is inconsistent with the strategic intent of the regional plan as it can diminish regional activity centre vitality and detract from economic growth by diluting public and private investments in centre-related activities, facilities and infrastructure.

Planning for regional activity centres will need to address relevant regional planning objectives. Local governments play an important role, and will need to amend planning schemes and other strategic local planning documents to:

- reflect the regional activity centre network designations
- spatially define the regional activity centre boundaries
- identify the current and future role and function of regional activity centres
- ensure an appropriate zoning mix and other planning provisions to achieve the regional planning intent
- ensure adequate provision for local activity centres.

The creation of compact, self-contained, diverse and inter-connected centres will be vital for creating efficient transport systems and walkable, healthy communities. Density, housing choice and affordability, and urban design and character are key components (see sections 4.1, 4.3 and 4.4). The intent of 4.2.3 and 4.2.4 is to ensure that centres are planned as regional activity centres, not just shopping centres for example, contain mixed uses, and provide diverse employment and housing opportunities.

Consumer demand is not sufficient grounds for only increasing the retail area of shopping centres. An appropriate land use mix will need to be demonstrated that achieves broader community and economic aspirations.

Regional activity centres are to be located and developed to achieve a sense of community and community place and space—somewhere that people live, conduct business, learn and play, rather than just pass through to shop or work. Higher densities will be promoted in appropriate localities within the regional activity centres within Cairns, Mareeba, Atherton and Innisfail (see section 4.3). Future development of the higher order principal and major regional activity centres should also include adequate provision for small business, and the maintenance of market-places in locations that best serve the needs of residents.

Table 6: FNQ regional activity centres network Description

Regional activity centre	Description
Principal regional activity centre	The Cairns central business district is the region's principal regional activity centre. It contains the largest and most diverse concentration of urban activities. For some activities it has an international function particularly in the tourism sector. It is the key regional focus of employment, government administration, retail, commercial and specialised personal and professional services. It accommodates significant cultural, entertainment, health, education and public transport facilities. It also has the highest population density, greatest concentration of mixed use developments, and most diverse dwelling mix in the region, including areas of medium and high rise buildings. This centre is supported by key regional infrastructure including the Cairns Base Hospital, Cairns Seaport and Cairns International Airport.
Major regional activity centre	FNQ's major regional activity centres contain a major concentration of business, employment and population. These centres generally provide a range of retail and services, local and/or state government administration, and important health, education, cultural and entertainment facilities. Some major regional activity centres are serviced by public transport and supported by hospitals, tertiary education institutions and an airport or seaport. Multiple dwellings in mixed use low and medium rise buildings may be present within the centre core.
District regional activity centre	District regional activity centres contain a reasonably large concentration of business, employment and population. They provide a range of convenience retail and urban services and may contain a small district or branch offices of government and other government services such as police, fire and ambulance. These centres may also contain a hospital, secondary school and provide a range of cultural and entertainment facilities such as a museum, sports parks, café and community hall. Some above-shop and attached dwellings may be present in the centre core.
Village activity centre	Village activity centres are distinct communities in rural areas that have a strong village character and links with the rural production and regional landscape values. They contain a concentration of business and employment that primarily service tourism and/or primary production industries. Village activity centres may contain some retail, government services, entertainment and community facilities. Any future growth of these centres will need to maintain the unique village character.
Rural activity centre	Rural activity centres are small, relatively remote centres in rural areas with small populations and concentration of business and employment. Rural activity centres may have services disproportionate to the current population given population fluctuations associated with resource extraction and distances from other centres. Future service provision may change, for example due to improving technologies. Despite their small size rural activity centres have an important role in servicing rural communities and provide a focal point for business, community events and social interaction.

4.3 Urban structure and master planning

Planning for the future structure, or land use mix, of the region's urban areas can provide significant positive community benefits in terms of improved accessibility to services, cost-efficiencies in the provision of infrastructure, quality of life, opportunities for employment and economic activities and protection of regional landscape and rural production values.

Urban development includes more than housing. Land use allocations need to facilitate developments which provide a range of uses and activities to support the community and higher levels of self-containment, including retail, commercial, industrial, government, community, cultural, education, health, sport and recreation, entertainment, and other leisure activities.

The regional land use categories identify the regional land use structure at regional level. Local government planning schemes furthermore identify an urban structure, or land use mix, at local level. Future land use mixes within the urban footprint will need to cater for changes in urban form, population demographics and community needs while protecting the valued FNQ character and lifestyle. Strategic land use and infrastructure planning will be vital components of delivering an appropriate land use mix within the urban footprint. This involves making plans upfront about the type and sequencing of land uses and associated infrastructure. A prioritised, plan-led approach will be a crucial aspect of the long term planning for the region's main growth centres.

Structure planning provides an opportunity for local and state government to work collaboratively in establishing a framework to guide preferred development and infrastructure provision. There are formal structure planning processes under IPA for declared Master Planned Areas and informal processes which may be local government or developer driven.

Objective

- The urban footprint contains an appropriate land use mix to create a stronger, more liveable and sustainable community.

Land use policies

4.3.1 Local government planning schemes ensure an appropriate land use mix is provided to accommodate future growth within the urban footprint.

4.3.2 A structure plan is prepared for regionally significant growth areas prior to urban development occurring.

4.3.3 A master plan is prepared for identified transit oriented communities.

Aligned strategies

4.3.A Planning schemes, local laws and other local planning instruments ensure that existing open space and conservation areas are protected from urban encroachment.

Explanatory notes

The urban footprint provides sufficient land for growth of a wide range of urban land uses to 2031 including residential, commercial, industrial, sport and recreation, and other non-residential land uses (refer to intent statement Part D). The amount and location of specific land uses varies across the region.

Not all rural zoned land included within the urban footprint is suitable for or meant to be used for residential development. Local government planning schemes will be amended as a high priority to identify appropriate future land uses and protect these areas from premature or inappropriate development (refer to section 4.1). The intent of land use policy 4.1.1 is to ensure that land use within the urban footprint addresses the future needs of the local and regional community. Not all greenfield land is intended to be used for residential development, and existing urban land uses may change. For example, some rural zoned land included within the urban footprint is intended to be used for industrial, commercial and open space and parks.

An important component of the region's character and lifestyle is the availability of green open spaces and conservation areas within the urban footprint. Local government will need to protect these areas from urban encroachment using local laws or other local planning mechanisms. Redevelopment within the urban footprint that results in increased density will need to provide additional areas of open space, and in particular cater for the needs of families and children.

Changes to the land use mix may be accommodated via development on greenfield sites, and through infill and redevelopment. An increasing proportion of future residential and commercial growth will need to be accommodated from infill and redevelopment within the larger regional centres (see section 4.1).

Local government planning schemes will need to anticipate and cater for the needs of the FNQ community in 2031, including:

- mitigation of, and adaptation to, climate change and oil vulnerability
- self-containment, particularly development of localised economies based on regional activity centre and transit oriented community development
- changes in urban structure and form e.g. increased need for open space associated with increased dwelling density
- population demographics e.g. increasing need for social infrastructure to support the ageing population

In general terms master planning is an integrated planning process used to identify the preferred future spatial structure and land use planning intent of an area. Master planning can be undertaken on greenfield, infill and/or redevelopment sites. The term is sometimes used by developers, but has particular meaning in relation to declared Master Planned Areas under IPA.

A declared Master Planned Area is one which has been declared under IPA where state and local government work together to achieve long term planning for the area in a structured and coordinated way. The Mount Peter Master Planned Area is the first Master Planned Area to be declared in Queensland.

Master plans provide for more detailed local area planning, often for large greenfield development sites. A structure plan is prepared for the entire Master Planned Area. This plan sets out the broad environmental, infrastructure and development intent to guide further detailed planning in the area. After a structure plan has been finalised it is incorporated into the local government planning scheme and location-specific master plans will be produced where necessary.

Master planning allows for state and local policy issues to be proactively resolved during plan preparation, rather than reactively during development assessment. This is expected to make the development assessment process more efficient and have a positive impact on housing affordability. It can also be used to facilitate agricultural diversification in the regional landscape and rural production area, to amend the effect of FNQ Regulatory Provisions.

Transit oriented communities have a key role in the preferred pattern of development. The exact location of transit oriented communities will be investigated through the Cairns Transit Network (under preparation) and structure plans. Once identified, transit oriented communities will need to undergo integrated planning in future (see section 8.1 and map 17). This may occur through a declared master planned process or other integrated planning process, as appropriate. Integrated planning activities would be staged over time and be based on priorities identified by state and local government. The resulting plan will ensure that transit oriented development is initiated and occurs in sequence with planned state and local infrastructure delivery.

Mount Peter Master Planned Area

Facilitating growth in Mount Peter is one of the strategic directions of the regional plan. Mount Peter is part of the Southern Growth Corridor, which was identified in FNQ2010 as a future urban area. A structure plan is currently being prepared for Mount Peter by Cairns Regional Council in consultation with a consortium of landholders, the community and relevant state government agencies. The Mount Peter Master Planned Area was declared on the 9 May 2008.

The main components of Mount Peter shown on map 10 are:

- the area between Edmonton and Gordonvale, generally west of the Bruce Highway. This area is intended to contain a mix of urban uses including regional and local activity centres, mixed dwelling densities, open space and sport and recreation areas
- an area on the eastern side of Edmonton is also part of the Master Planned Area. This area is intended to be developed for industrial and logistic uses.

The master planning will need to achieve the relevant policy objectives of the regional plan. This includes, for example:

- protection of areas of ecological significance, waterways and other natural values
- avoidance of natural hazards including flooding and acid sulfate soils
- protection of cultural values, local identity and sense of place
- appropriate dwelling densities and housing mixes
- open spaces that are linked where possible to maximise their function as wildlife corridors and for outdoor recreation
- provision of a range of economically viable activity centres of a scale that will maximise the availability of local employment opportunities and available services
- an efficient public transport network, with higher housing densities and mixed use developments within transit oriented communities.

A mix of housing including higher dwelling densities will:

- enable efficient infrastructure and services, including public transport, recreational space, community facilities and the retention of green spaces within the corridor
- reduce the need for future urban areas to be developed, for example on good quality agricultural land.

An ultimate population capacity of up to 50 000 will need to be planned for in the Mount Peter Master Planned Area in the longer term. The full development of Mount Peter is likely to go beyond the life of this regional plan.

4.4 Housing choice and affordability

Access to appropriate housing is an important component of social and economic wellbeing. A range of housing options are needed to meet the need of the current and future community in FNQ. Housing options include multiple dwellings, detached houses, nursing homes, boarding houses, hostels and shelters. Housing need is influenced by a range of factors including changing life-cycle needs, socio-economic circumstances and occupations, specific needs of people with a disability, and the needs for short-term and emergency accommodation.

Housing needs are changing in the region. Some areas are experiencing rapid population growth whereas others are declining. Household size is decreasing, the population is ageing, and housing affordability has been declining. Traditional households of couples with children are decreasing and the number of people living alone without children, or as lone parents is increasing.

A significant proportion of residential dwellings in the region are currently single detached houses on individual allotments. There has also been an increasing trend towards larger houses on smaller lots. This can result in lower building energy efficiency, loss of character, and social isolation. A greater range and mix of dwellings is needed to create a more liveable, stronger community.

Objective

- A variety of housing options are provided to facilitate housing choice and affordability to meet diverse community needs.
- Sufficient land is made available to meet longer term regional housing needs for a minimum of 15 years.

Land use policies

4.4.1 An appropriate range and mix of dwelling types and sizes are provided in new residential developments.

4.4.2 Land use planning assessments for state land consider the potential for land allocations to deliver housing options and affordability outcomes that address gaps in community need.

Aligned strategies

4.4.A The urban land monitoring program monitors housing choice and affordability.

4.4.B Opportunities to provide affordable and universal housing are investigated in declared Master Planned Areas and major residential developments.

4.4.C Affordable and universal housing design initiatives are supported and encouraged.

Explanatory notes

Providing diverse and affordable housing options is an important issue and key challenge both nationally and in FNQ. A range of housing options can help create more diverse communities and avoid social polarisation and displacement.

All new residential developments in the region will need to provide an appropriate range and mix of dwellings. These factors are likely to vary in accordance with:

- housing needs assessment
- dwelling density targets
- urban character and design
- land use constraints.

A housing need assessment may be undertaken in particular local government areas by the Department of Housing to implement the *State Planning Policy 1/07 Housing and Residential Development*. This includes local governments that have 10 000 or more people within at least one urbanised area and a minimum average dwelling approval rate of 100 dwellings per year over the latest five year period. In FNQ this includes the former Cairns City local government area.

A housing need assessment has recently been undertaken for the Mount Peter Master Planned Area. This will inform development of the structure plan and identification of preferred housing options for Mount Peter.

Local governments should ensure that planning schemes deliver an appropriate range and mix of housing relevant to local and regional needs, including providing for vulnerable persons. Social infrastructure should generally be accommodated within the urban footprint, and higher dwelling densities will need to be concentrated in and around various regional activity centres and transit oriented communities (see section 4.1). Housing choices should be increased in these areas over time to increase opportunities for different age groups to live, work and interact together. Urban design and character will play an important role in creating attractive, high quality places and spaces, particularly in higher density developments (see section 4.5).

Universal housing design aims to provide flexible housing that is suitable for people with varying abilities and at different stages of their lives. It avoids building physical barriers for people living in or visiting the home and can be readily adapted to meet changing needs. Some of the key features are:

- absence of barriers and sharp turns in approach areas
- wide hallways and doorways
- bathroom/toilet and one bedroom accessible for a person with limited mobility or in a wheelchair
- simple logical layout without obstructions, hazards or steps
- lever door handles
- gently sloping footpaths and driveways

Housing affordability issues generally affect new home buyers and low to middle income households. All new residential developments should consider the retention and provision of a minimum level of affordable housing to cater for both the entry buyer and low income housing market.

The *Queensland Housing Affordability Strategy* (DIP, 2007i) aims to ensure that Queensland's land and housing is on the market quickly and at the lowest cost. This should help reduce the timelines and associated holding costs of bringing new housing onto the market.

The Urban Land Development Authority has been established as part of the Strategy. Other relevant strategies include simplifying the infrastructure charging process across Queensland, identifying appropriate, under-utilised government land for urban proposals, designating land for housing, reviewing greenfield land to identify parcels which can be developed ahead of time, and enabling local governments to facilitate private sector infrastructure financing.

Regional planning policies can influence the supply of affordable housing in FNQ by ensuring sufficient land is available for development within the urban footprint. The urban footprint is expected to provide for approximately 20 years supply of residential land. There are a range of other factors which impact on housing affordability, such as market influences, interest rates and mortgage deregulation, over which the regional plan has little or no influence. The Department will monitor aspects of housing choice and affordability to inform future policy development.

4.5 Sustainable buildings and tropical design

The regional plan recognises the highly valued tropical character of the region and the built environments and lifestyles that have evolved because of it. Building design from southern parts of Australia are not suited to a tropical climate. There is a need to adapt to provide better opportunities for enjoying the tropical lifestyle. Tropical design principles underpin and reinforce good sustainable design. Incorporating tropical design principles into future development at the building, neighbourhood, suburb, town and city level will respond more effectively to the region's tropical character and identity.

The older suburbs of the FNQ region contain many homes and buildings rich in character. As the demand for units and other high density residential houses increases, particular care must be given to protecting and maintaining these homes and planning and designing new buildings to ensure the style and character of the area is retained rather than eroded.

Although the whole region is classified as tropical, it is recognised that there are subregional variations such as coastal, range, tableland, rural and river valley, which each have different built forms and lifestyles that respond to local climates. Maintaining this unique built form strengthens the local sense of place and identity.

Objective

- Urban development recognises the unique tropical character of the region and is designed and constructed to facilitate a sustainable lifestyle.

Land use policies

4.5.1 Urban development reflects and reinforces the distinct tropical lifestyle of the region, is responsive to climate and encourages the sustainable use of natural resources.

4.5.2 Sustainable building and tropical design principles are incorporated in urban planning and development including orientation, siting and passive climate control.

4.5.3 New urban developments are built to withstand potential impacts from climate change including more intense cyclones, higher temperatures and flooding impacts (see section 4.7).

4.5.4 New urban developments provide accessible public open spaces and places that incorporate tropical design features (see section 3.5).

4.5.5 Subregional variations in built form, design and lifestyle are identified and maintained.

Explanatory notes

Urban development should be based on tropical design principles and incorporate or contribute to:

- public and private open space and/or recreational facilities
- attractive streetscapes with shade trees and awnings
- cultural and social values
- water and energy efficiencies
- sustainable buildings that respond to the local vernacular
- mitigation and adaptation to climate change.

Tropical design principles for FNQ include:

- incorporating wide verandas, ceiling fans and indoor outdoor connections to allow for natural ventilation and reduce use of air conditioners
- using lighter building materials such as timber and steel
- retaining mature trees where appropriate, and provide additional planting, to provide shade areas
- providing shaded open space areas, streets and pedestrian pathways with continuous vegetation and large shade trees
- providing covered walkways for major pedestrian routes to accommodate wet season rains
- integrating water and energy saving devices in housing design
- incorporating local vegetation in planned and existing transport corridors including all roads, and bicycle and pedestrian routes
- creating an open and permeable built environment where design allows for the presence of nature, water and a sense of openness and movement
- developing outdoor centres for dining, entertainment and recreation, and
- provide sheltered access to public services and facilities, such as public transport stops
- protecting the integrity and character of the hills, mountains and ridgelines which frame and define the tropical environment
- integrating natural elements and the natural environment with development of the built environment.

Sustainable housing is designed with people in mind, is efficient in the use of energy and water, seeks to minimise waste, is safe and secure, and incorporates universal design principles. A sustainable house is more cost-efficient over time, comfortable, cheaper to maintain and helps us enjoy our unique environment. This includes mitigating and adapting to climate change.

Climate responsive building, or passive climate control, involves using natural methods to reduce energy consumption by designing, constructing and using methods appropriate to the tropical climate.

Improvements in sustainable house design are primarily achieved through the building standards in the Queensland Development Code. This includes measures for water and energy efficiency. All new houses in Queensland will be required to achieve a minimum 5 stars (out of 10) energy equivalent rating from early 2009 under new sustainable housing provisions. These include better recognition of outdoor living areas, 4-star toilets, 3-star tapware, 80 per cent energy-efficient lighting in new houses and units, prevention of residential estate covenants that restrict the use of energy efficient design and fixtures, prevention of the sale and installation of inefficient air-conditions and sustainability declarations when a home is sold.

A number of key initiatives, such as mandating 4-star energy efficiency in new commercial buildings and phasing out electric hot water systems in existing homes at the time of replacement from 2010, have also been announced in the ClimateSmart 2050 strategy.

The Queensland Government discussion paper on improving sustainable housing in Queensland (DIP, 2008e) provides useful information on sustainable housing solutions.

Urban design principles suitable for FNQ can also be found in:

- Cairns City Council—Cairns Style Design Guide
- Department of Public Works—Smart Housing
- Queensland Government—ClimateSmart 2050 Strategy
- Queensland Building Code—Sustainable Buildings

- Transit oriented community principles (see section 8.1)
- Queensland Police Service—Crime Prevention Through Environmental Design Guidelines.

The challenge for councils, the building industry, designers, developers and owners is to provide housing that is tropical, sustainable, climate responsive and affordable. Initiatives to develop guidelines and codes for improved urban character and design are supported and encouraged.

The overall attractiveness of an area as a place to live and is a key reason why people move to and stay in FNQ. People are attracted to the character of the urban form, which is the relationship between buildings, public and private spaces, local streets, neighbourhoods and natural landscapes, and to the general aesthetics and feel of the urban environment (see section 3.5).

Rapid urban growth can swamp existing urban values and lead to a loss of local amenity, community identity and cultural heritage. The objective of the sustainable housing, urban character and tropical design policies is to achieve a built environment that retains the character and quality of life while achieving sustainable outcomes through effective and innovative design.

State and local governments should lead by example through the design of public buildings that reflects the region's character and climate and complements the surrounding urban, rural and natural environment. All new development, redevelopment and design of public areas, urban neighbourhoods and civic buildings should enhance the tropical character and identity of the region.

4.6 Rural residential development

The creation of compact, well serviced urban areas is an important component of achieving sustainable growth. Locating residential developments close to regional activity centres and public transport nodes can improve access to employment opportunities, services and facilities and facilitate cost-effective infrastructure provision. Consolidating growth in existing centres also helps avoid fragmentation of rural lands and protect regional landscape values.

Rural residential development is large lot residential subdivision in a rural, semi-rural or conservation setting. Allotments usually have a power supply but a limited range of other services, such as reticulated water and sewerage.

The area of land required for rural residential development is significantly greater than conventional urban development. Rural residential developments have low to very low density and subsequently take up significant areas of land to house relatively small populations. The relatively inefficiency of land use results in additional pressure for urban areas to expand and can have a range of adverse economic, social and environmental impacts, including:

- higher proportional cost of road construction
- higher transport costs
- fragmentation of land
- potential pollution over time through inefficient on-site effluent disposal
- weed proliferation due to high cost of land maintenance
- potential cross-subsidisation of services by urban residents.

Objective

- Manage rural residential development to prevent fragmentation and alienation of agricultural land and loss or degradation of areas of high ecological significance and ensure efficient use of land and cost-effective delivery of services and infrastructure.

Land use policies

4.6.1 New rural residential development is located in rural living areas.

4.6.2 Future demand for rural residential housing is provided from within the existing stock of land zoned for this purpose.

4.6.3 Construction of residential dwellings and ancillary structures within rural residential zoned land is confined to a building footprint which reduces the exposure to natural hazards and avoids and minimises the loss of native vegetation through locating structures in existing cleared areas and co-locating service corridors.

4.6.4 Rural residential subdivision along watercourses should be designed to minimise the impact of rural residential water use on current and future water resources.

Explanatory notes

Rural residential development has emerged as a major component of the housing market in FNQ over the last two decades. Large rural residential estates have established near Cairns, Mareeba, Atherton, Herberton, Ravenshoe and various other centres. There is additionally a significant, as yet undeveloped, supply of broadhectare rural residential zoned land (see Part D).

Significant areas of rural residential development have taken place on good quality agricultural land or in areas of high ecological significance. Few rural residential developments are currently being used for farming in FNQ and there is often a strong reliance on private car travel to nearby centres for employment and services. The limited access to employment and social infrastructure in these areas can result in a number of adverse economic and social impacts on these communities. As rural residential communities develop, pressure often grows for additional services and facilities which are difficult to provide in a cost effective manner.

Rural residential development will be limited to the existing appropriately zoned areas to ensure that a range of regional planning objectives can be achieved. An adequate supply of broadhectare rural residential zoned land for the preferred pattern of development in FNQ has been provided as part of this plan.

Most rural residential zoned land has been included in the rural living area. Some areas that are well located with regard to urban services and facilities have alternatively been included in the urban footprint. Local governments will assess potential opportunities to increase density in these areas (see section 4.1).

Rural residential zoned land that is significantly constrained, for example by lack of appropriate infrastructure or areas of ecological significance, or located in small isolated patches, are contained in the regional landscape and rural production area. The FNQ Regulatory Provisions apply to applications for rural residential purposes on rural residential zoned land in the regional landscape and rural production area (see Part D).

Future development of rural residential zoned land should ensure that it is managed appropriately to maintain environmental and landscape values. This includes management of pest plants and animals (see section 2.2), and mitigating potential risks from flooding, bush fires, landslides and other hazards (see section 4.7).

Management of rural residential developments includes minimising the impacts upon waterways (see section 7.1) and rural water supply (see section 7.6). Rural residential developments can place additional demands on rural water usage and create competition for limited water supplies with primary producers. Rural residential development should be set back from watercourses to avoid the creation of water entitlements for urban uses.

4.7 Mitigation of hazards

Various parts of the FNQ region are at risk from natural hazards such as cyclones, floods, storm tide inundation, landslides and bushfires. These hazards are expected to pose a greater risk as a result of climate change and will create challenges for emergency response planning and management. Impacts of climate change that are likely include:

- more intense summer rain
- towns, infrastructure and resorts in low-lying areas being vulnerable to higher flood or storm surge levels
- higher risk of Cairns being inundated by 1-in-100 year storm surge
- changes in rainfall and hotter temperatures increasing the risk of water, food and vector borne diseases (see policy 3.3.3).

Development in natural hazard prone areas is a significant community health and safety issue. The expense of the repercussions of developing in these areas is a significant burden on government, business, industry and individuals. Most significantly, individuals can be severely impacted by the loss of homes and personal possessions when natural disasters occur.

Population growth, lifestyle changes and increased economic activity are generating pressure for development in these areas. In particular, this is occurring along the coast and waterways, in bushlands and on steep slopes. These areas are particularly vulnerable to the impacts of climate change and further development in these areas exposes the community to risks and should be avoided.

Objective

- Development minimises the potential adverse impacts of natural, industrial and climate change induced hazards and increases the resilience of people, environments, locations and economic sectors leading to a safer community and better quality of life.

Land use policies

4.7.1 Measures to mitigate potential adverse impacts of floods, storm tide inundation, bushfires, cyclones and landslides are implemented through identifying natural hazard management areas in planning schemes and appropriate planning scheme strategies and measures.

4.7.2 New development located in infill areas likely to be severely affected by storm tide inundation is adequately planned to manage these hazards (see section 1.2).

4.7.3 The potential adverse impacts of hazardous and high impact industries is addressed by identifying:

- high impact industry areas
- planning scheme strategies and measures
- development assessment (see policy 1.3.2).

Aligned Strategies

4.7.A Emergency service and disaster management needs are addressed in land use planning, regional infrastructure planning and development.

4.7.B Regional data sets require a coordinated and a consistent approach applied in identifying natural hazard areas and associated risks to inform land use planning, development assessment and disaster management plans.

4.7.C Increase the resilience of at-risk communities by raising their awareness and preparedness for more frequent extreme weather events, and ensure that disaster response plans and services and community recovery plans take into account the increased severity of extreme weather events.

Explanatory notes

The preferred approach to dealing with natural hazards is to avoid future development in hazard prone areas. In developing the preferred settlement pattern for FNQ, natural hazards were considered a constraint to future development. This will ensure that future urban areas are not located in areas that are currently at risk from natural hazards or likely to be at risk in the future as a result of climate change.

Most local government authorities in FNQ have addressed disaster management in some way, as required under the *Disaster Management Act 2003*. However, state and local governments need to coordinate regional data sets and apply a consistent approach in identifying natural hazard areas and associated risks. This can inform land use planning, development assessment and disaster management plans. Once identified, these areas are to be mapped in local government planning schemes. Conditions should be placed on development where appropriate.

There are a number of existing urban settlements in the FNQ region that are susceptible to the potential impacts of natural hazards. In these areas an adaptation approach will strengthen the community's overall resilience to potential impacts. This involves improved prevention, detection, response and recovery systems to protect the community, environment, businesses and infrastructure from the threat of disasters. New development in existing centres will need to incorporate design mechanisms to mitigate the effects of natural hazards and disasters (see section 1.2).

Regional infrastructure facilities and services should be strengthened where appropriate. These can be addressed through local government planning schemes and structure and master planning. Land use planning in these areas should ensure new development and redevelopment minimises risk to people, property and the environment and mitigates the cost of recovering from natural disasters.

Planning decisions for housing and infrastructure needs for the entire community require consideration of changing climatic conditions. Transport infrastructure, such as roads, bridges and railways are particularly vulnerable to extreme weather events. Design criteria for extreme events will need to allow for such events to be exceeded more often. Temperature increases and high intensity rainfall events are both likely to increase maintenance costs and reduce the lifespan of infrastructure (EPA, 2008b).

The potential of major emergency events requires a land use planning approach to ensure efficient delivery of emergency services to the community and evacuation of residents and visitors in affected areas. The provision of a world-class emergency and disaster management service will result in a safer community and better quality of life for FNQ residents, particularly in coastal areas where risks are high.

The Queensland Government has a number of existing policies to assist in the management of natural hazards, including:

- *State Planning Policy 1/03: Mitigating the Adverse Impacts of Flood, Bushfire and Landslide (Department of Emergency Services, 2003)*
- *Guide for the State Coastal Management Plan: Mitigating the Adverse Impacts of Storm Tide Inundation (EPA, 2007a).*

Major emergency situations including floods, fires, chemical hazards and traffic accidents and the associated necessary response by emergency services need to be considered when planning new development. Useful references include the district disaster management plans and disaster district community recovery plans for the Cairns, Mareeba and Innisfail districts.

In addition, the Department of Infrastructure and Planning, in partnership with the Australian Building Codes Board and James Cook University, is investigating the effects of cyclones and climate change on buildings. This will better inform government on whether current building codes are sufficient to resist potential climate change impacts. The department is also working on improving State Planning Policy 1/03 with respect to bushfire prone areas.

5. Economic development

Desired regional outcome

A strong, ecologically sustainable and diversified economy, building on new and existing regional and subregional competitive advantages and specialisations.

FNQ has a vibrant economy that has demonstrated strong growth over time. The strength of the region's economy lies in the quality and depth of its primary and tourist industries, which underpin economic activity. The region's close proximity to many of Australia's trading partners in Asia and the South Pacific presents many opportunities for greater economic activity. FNQ has the potential to be a leader in tropical and climate change expertise, building on its developing resource base in knowledge and service industries.

The continuing movement of people into the region will drive employment forward. The region's capacity to create employment and support the preferred pattern of development requires specific subregional strategies focusing on:

- preserving the region's natural economic and environmental advantages
- diversifying the region's economic base
- continuing to provide suitable and appropriately located land for industry and economic activity
- continuing to support primary industries in rural locations
- developing skills to support industry and regional growth.

Other factors that support economic growth and development include providing infrastructure and services, such as transport, freight and information and communication technology, education and research institutions, and water and energy.

The region is an attractive place to live and work, with its tropical lifestyle and high quality of life. Maintaining this attractive lifestyle will be important in attracting skills and investment for a sustainable economy.

5.1 Economic growth and diversification

FNQ has a growing economy traditionally based on agriculture and tourism industries. There are areas of good-quality agricultural land surrounding Mareeba–Dimbulah, Atherton, the southern Tablelands, the coastal plain between Cairns and Cardwell and the Mossman area. Tourism is based on the Wet Tropics and the Great Barrier Reef World Heritage areas. Potential for mining activities is increasing, particularly in the Mount Garnet and Chillagoe corridor.

Continued diversification of the region's economic base is important to minimise the effects of global trends and major events—including from climate change—on the region's overall economy. The natural and rural values provide great economic opportunities and further economic pursuits must ensure those values remain. However, this relatively narrow economic base places the region in a vulnerable situation. Tourism, mining and to a lesser extent primary industries, are susceptible to external influences such as international trends and commodity markets. The region's economic base needs to be diversified in order to develop greater robustness. This will provide a wider range of employment and economic opportunities for the community.

Cairns is the major commercial, business and service centre for FNQ, Cape York, the Gulf of Carpentaria and Papua New Guinea. Cairns accommodates key regional infrastructure such as an international airport, seaport, HMAS Cairns naval base and a campus of James Cook University. Innisfail, Tully, Atherton and Mareeba are major regional activity centres that provide commercial, business, retail and services for the urban community and surrounding rural areas.

The region's employment opportunities are largely concentrated in Cairns. A greater range of employment options should be encouraged outside of Cairns in locations convenient to residential areas to ensure employment options and diversity are available across the region.

The regional plan supports the expansion of established areas of economic activity and identifies areas of emerging and future employment (see maps 11 and 12).

Objectives

- A diversified regional economy characterised by industries and economic activity centres, which build on existing regional and subregional competitive advantages and specialisations.
- The region's economic base diversifies, based on industries and activities, which complement the significant environmental values of the region.
- Economic development minimises the region's contribution to the causes of climate change and ensures industries are resilient to its impacts.
- An adequate supply of suitable and appropriately located commercial and industrial land is available to support the diverse range of businesses and industry sectors needed for regional economic development and developing liveable and sustainable communities and activity centres.

Land use policies

5.1.1 Land use planning and development activities provide opportunities for diverse and innovative economic growth.

5.1.2 Strategically located land and buffers are secured to meet the current and future requirements of locally and regionally significant business and industry uses, including long-term provision beyond the timeframe of the FNQ Regional Plan.

5.1.3 Commercial and industrial sites and areas with identified potential for local and regional economic development are protected from incompatible development, when deciding planning scheme amendments and development applications.

5.1.4 Job creation and employment diversification opportunities are maximised in centres of economic activity, as indicated in maps 11 and 12.

5.1.5 Self-containment throughout the region is promoted through the integration and co-location of a mixed range of employment opportunities with residential development.

5.1.6 Economic growth occurs in a sustainable manner that protects ecological processes and maintains cultural, physical and social wellbeing of people and communities.

5.1.7 Economic activities with a direct connection to the rural, natural or resource value of the surrounding area are encouraged in regional landscape and rural production areas, provided they do not include permanent residential development and are of an appropriate scale.

5.1.8 Adequate strategic port land at Cairns and Mourilyan is made available for coastal uses, such as commercial fishing, other land based marine activities and logistics (including bulk sugar terminal, live cattle or forestry cargo handling facilities).

Aligned strategies

5.1.A Opportunities for economic development in Indigenous communities are investigated and provided.

5.1.B Economic data is regularly updated, particularly following release of census data, to assist economic planning and development for the region.

5.1.C An education/industry/government partnership is developed to support and promote research and development on measures to increase industry's resilience to climate change and to capitalise on business opportunities, including a local biofuels industry and potential renewable resource areas.

5.1.D The impact of climate change on the region's economy is assessed and industry sectors assisted to adapt.

5.1.E Economic development strategies are developed for Centres of Enterprise such as marine, aviation and other industry sectors such as international education.

Explanatory notes

Diversifying the regional economy is a primary aim of the Queensland Government's Centres of Enterprise initiative. The initiative aims to grow FNQ's aviation and marine services sector and develop commercial opportunities across a range of other sectors that enhance specific expertise developed in the tropics.

Under the initiative, industry stakeholders implement action plans that develop export opportunities, build industry capacity and attract business, to achieve critical mass in the sector. Economic development strategies already exist or are being developed for some of the subregions and existing local government areas. Climate change and its potential impacts need to be considered when developing economic strategies. The potential impacts may provide threats to the tourism industry and opportunities for the agricultural industry. The increasing role of Cairns as a regional, domestic and international airport hub is likely to increase employment opportunities in aviation and related industries. This will include expansion into more sophisticated services of the education and training, finance, brokerage, insurance, aviation and marine industries.

Economic development strategies already exist or are being developed for some of the subregions and existing local government areas. Climate change and its potential impacts need to be considered when developing economic strategies. The potential impacts may provide threats to the tourism industry and opportunities for the agricultural industry.

The increasing role of Cairns as a regional, domestic and international airport hub is likely to increase employment opportunities in aviation and related industries. This will include expansion into more sophisticated services of the education and training, finance, brokerage, insurance, aviation and marine industries.

There is a potential shortfall of industrial land in the Cairns urban area in the long term, despite the overall adequate supply of industrial land across the region to meet economic growth in the medium term. Additional industrial land will be needed in Cairns in the long term to support regional economic growth and the population growth predicted for Cairns.

The time frame for the potential deficit depends on the use of existing (zoned and vacant) industrial land and designation of additional industrial land to provide for the predicted future demand. Matters affecting the existing supply of land include specific site constraints limiting the developable footprint, loss of land to competing uses (residential, commercial and community) and landowners' willingness to develop lots for industry rather than higher order commercial uses.

Given there is very little suitable land available in the Cairns northern corridor for industrial development and the predicted population growth for the southern corridor of Cairns, most of the industrial land shortfall to service the Cairns urban area and regional economic growth will need to be provided in the southern growth corridor.

The longer term supply of industrial land in Cairns, particularly in the southern corridor, will need to be further investigated and monitored, to secure a suitable supply of industrial land for regional economic development in proximity of the region's future workforce and supply and demand chains.

A range of criteria will need to be considered when locating regionally significant industrial land, including access to major transport networks, appropriate infrastructure provision and the need to buffer medium–high impact and large-footprint industry from residential or sensitive land uses. Strategically located land in areas with suitable regional arterial, port, airport or rail access should be secured for business and industry serving the wider region or importing and exporting goods and services outside SEQ.

In the interim, the Queensland Government has developed the Woree Business and Industry Park. The estate is largely made up of larger footprint and regionally significant industrial businesses. The estate is zoned General Industry and is suitable for a wide variety of industries.

Given the shortage of industrial land to service the growing population in the Cairns northern corridor, opportunities to secure additional industrial land for

appropriate low-impact industry should be identified as part of the Smithfield Town Centre planning process. Providing industrial land at Smithfield will require the support and commitment of the relevant landowners and developers.

Across the region there may be a requirement for amendments to local planning schemes to secure an appropriate supply of industrial land to match the predicted demand. Zoning of additional or alternative land parcels for industry may be necessary to address:

- the predicted long-term minor deficit in industrial land supply (Atherton)
- imbalances in the supply of land across the region (e.g. Cardwell–Tully and Malanda Millaa–Millaa) as a result of changes in industry sector requirements.

Further investigation may also be required regarding the suitability and availability of some land already zoned for industrial purposes in Innisfail.

Emerging major employment and economic activity opportunities include:

- future industrial land at Edmonton, east of the current Bruce Highway
- Edmonton major regional activity centre, west of the current Bruce Highway
- industrial land at Mareeba and Woree
- mining and extractive industries in the Mount Garnet to Chillagoe corridor
- tourism on the Atherton Tablelands.

Mixed-use development at Edmonton will contribute to a vibrant and sustainable town centre, which balances key economic and community goals. The Edmonton major regional activity centre will be positioned around the proposed Edmonton public transport station and will integrate multiple modes of transport including bus services, taxis, cycling, walking and private vehicles. The Edmonton major regional activity centre will grow into a transit oriented community providing a range of local job opportunities for residents in Edmonton and the southern corridor.

Areas west of the Atherton Tablelands (part of the North East Minerals Province) have known and potential minerals deposits. Following the recent growth in minerals exploration this area is expected to stimulate increased production of mineral ore and concentrate in the long term.

Defence is a strong employment contributor, and stimulates the economy by providing employment and services to the region. Planning needs to carefully consider the needs of Defence to ensure facilities are protected from incompatible land uses.

To provide employment close to where people live, existing major employment and economic activity areas will also need to grow or diversify. These include:

- Cairns central business district
- Cairns International Airport
- public and private hospitals in Cairns
- entertainment, cultural and convention centres in Cairns
- educational and research centres at James Cook University
- major activity centres at Smithfield, Earlville, Westcourt, Innisfail, Tully, Atherton and Mareeba
- Cairns and Mourilyan seaports and HMAS Cairns naval base
- industrial land at Bungalow–Portsmith, Manunda, and Innisfail
- sugar mills at Tully, South Johnstone, Babinda, Gordonvale, Mossman and Ariga and the dairy factory at Malanda
- tourist nodes at Cairns central business district, Cairns North, Cairns northern beaches and Port Douglas.

Employment and economic activity centres in FNQ are indicated on maps 11 and 12.

Sustainable economic development and employment have been identified by the Queensland Government as a priority for Aboriginal and Torres Strait Islander communities including:

- assisting Indigenous people to increase their economic independence and employment opportunities
- improving their quality of life by building local and regional business capacity.

An Indigenous Business Development Grant Scheme has been established for this purpose.

5.2 Industry and business development

The FNQ region is in a strong position to build on its natural competitive advantages, which are centred on tourism and primary industries. In addition, key specialised industries that have arisen in the region include aviation, marine services and tropical expertise. There is significant potential for the region to expand business opportunities into new areas to capitalise on the region's strengths.

Objective

- Promote and expand business activity, increase business competitiveness and encourage regional exports and import replacement.

Land use policies

5.2.1 Future mining and extractive industries and associated processing operations are protected from conflicting land use and supported by appropriate infrastructure.

5.2.2 An adequate supply of land to accommodate future growth in operations, and suitable facilities to support diversified aviation and marine trades and services, are provided at air and seaports.

5.2.3 Use of existing infrastructure to support industry development is maximised and new infrastructure supports industry requirements and is planned in line with industry demand.

5.2.4 Opportunities for expansion of business and industry are facilitated and promoted through the identification, protection and planning (including reuse and rehabilitation) of suitable sites.

5.2.5 New business and industry initiatives, including home-based business, that build on local strengths and opportunities are facilitated and supported in rural towns and villages.

5.2.6 Planning should consider the needs of specialised industries, such as Defence, to avoid encroachment from conflicting land uses.

Aligned strategies

5.2.A Raise business competitiveness by using the Queensland Government's export, business improvement, sectoral development, and education and skills programs.

Explanatory notes

The government has named Cairns and the FNQ region as centres of enterprise for regional aviation, tropical expertise and marine. The initiative works to build the economic strength of Queensland's regions.

A wide range of programs support economic and business development. These include:

- the Queensland Investment Incentives Scheme
- Significant Regional Projects Scheme
- Business and Industry Transformation Incentives Scheme
- an industry and sectoral projects scheme (DTRDI, 2008b).

These programs are aimed to encourage:

- innovation
- greater productivity
- growth in exports
- stronger regional economies
- new investment
- improved business capability.

Manufacturing in the region is associated with the processing of primary products and providing equipment and engineering services to agriculture, mining and tourism. The region has a diverse manufacturing sector that includes industries such as food and beverage, biotechnology, aviation, marine, electronics, general light manufacturing, steel fabrication and boat building. With close proximity to Papua New Guinea and other Pacific markets, the sector is well positioned for the future.

Marine tourism and commercial and recreational fishing are significant economic activities for the region, recognised nationally and internationally. The marine industry is well established and supplies products and services to defence, recreational and commercial

markets. The diversity of coastal conditions allows every aspect of sea training to be undertaken. Cairns is a major supplier of marine training in the state, and this sector is growing rapidly.

Mining in the region has re-emerged on the wave of a global resource boom. This has stimulated exploration and mine development. Herberton has become a major zinc producer and Mareeba has considerable metallic and non-metallic mineral diversity. There is also considerable activity in the adjacent Etheridge Shire that could generate downstream activity in service centres in the region. This broader area is part of the North East Minerals Province. The region has strong links to external mining activities as a base for fly-in/fly out mining operations in remote areas.

Providing services to the mining industry is important to the regional economy and may provide opportunities for future economic diversification and growth.

Construction, wholesale and retail, finance and business services are also significant industries primarily based on supporting primary industry, tourism and the needs of a growing regional population. Investment in buildings, equipment and infrastructure is expected to continue to drive growth of industry in the region. Future growth opportunities include growing service areas nationally and internationally, and providing support for the growing biotechnology industry.

Knowledge and service industries cater to an emerging world market, particularly in developing nations. These industries include education, research, training, health and professional services.

5.3 Innovation and technology

The region has potential to become an internationally recognised centre of tropical expertise. Scientists and practitioners are developing unique knowledge through adaptation to the local environment in areas such as tropical health, environmental management, primary industries, and tropical living—encompassing Aboriginal and Torres Strait Islander culture, built environment, disaster management, tourism and education.

Excellent educational institutions—from primary to tertiary levels—and vocational centres serve the region. Domestic and international demand continues to grow.

The international education industry is a major contributor to the local economy.

The Australian Government's announcement of funding to establish a School of Tropical Dentistry will provide a boost to James Cook University and to the dental workforce in northern Australia in the long term. Other initiatives such as this in the future could foster innovation and provide regional benefits.

The ongoing development of the James Cook University Smithfield campus will be a key factor in diversifying economic activity and increasing access to education and training in the region.

A key issue for industry is developing the skill base and critical mass required to meet the increased demand for services. In many industries there is currently a shortage of skilled and experienced workers. The reasons for skill shortages are complex and varied. They are likely to be symptomatic of economic conditions, demographic change, cyclical changes in labour demand, emerging demands of new technology and regional issues.

The development of enabling technologies is crucial for innovation. Building capacity in enabling technologies ensures the creation of new employment opportunities, causing traditional industries to become competitive in rapidly changing global markets. The convergence of technologies, such as Information Communication and Technologies, biotechnology, environmental management, manufacturing and mining technology, when combined with creativity is pivotal to providing the foundation for future productivity gains. Developing these technological capabilities in the region will enhance both existing and emerging industries.

Objective

- Foster innovation and develop technological capabilities in the region to enhance existing and emerging industries.

Land use policy

5.3.1 The development of a range of regional education and training infrastructure that is accessible and attractive to the community and international students and supports skills development in the workforce is provided for in the principal and major regional activity centres (see section 4.2).

5.3.2 Sites are identified for the development of mixed-use business parks and knowledge precincts in principal regional activity centres and major regional activity centres and collaborative planning approaches promoted to ensure the development of world class facilities where opportunities arise.

Aligned strategy

5.3.A Research and innovation infrastructure is developed in the region.

Explanatory notes

James Cook University delivers world-class education and research outcomes across a range of disciplines, with particular emphasis on subjects of special relevance to the tropics and its location in Australia and the Asia–Pacific region. Currently there are 3200 students in Cairns, but there is potential for this number to grow.

The Australian Tropical Forest Institute is housed on the James Cook University Cairns campus, and features the Tropical Landscapes Joint Venture and Australian Tropical Herbarium. This combines collections from the Australian National Herbarium in Atherton, the Queensland Herbarium in Mareeba and the university campuses with state-of-the-art molecular science laboratories essential for modern plant research. It is also home to the Reef and Rainforest Research Centre.

Tropical North Queensland TAFE provides vocational education and training for more than 13 000 students annually from campuses located at Cairns, Innisfail, Tully, Atherton, Mareeba and Mossman.

A new agri-science hub is being developed at Mareeba that will focus on research, development, extension, education and training. This will bring together the regional scientific capacity of the Department of Primary Industry and Fisheries in one location. The Australian Agricultural College Corporation's Mareeba campus will also be relocated and incorporated into the hub.

There are a number of private English language schools in Cairns catering for international students.

The Cooperative Framework on Tropical Science, Knowledge and Innovation was formally entered into by the governments of the Northern Territory, Queensland and Western Australia in 2004. This 10-year agreement expresses the desire and commitment of the three governments to work together to:

- realise the potential of tropical science, knowledge and innovation to enhance the economic performance of northern Australia and the nation as a whole
- protect the unique tropical landscapes
- improve the quality of life of people living in the tropics of Australia and other nations.

5.4 Primary industries

Primary industries form a significant sector of the economy. Activities include agriculture, horticulture, dairy farming, fishing, aquaculture, mining and forestry. These industries have benefited from high-quality natural assets including agricultural land, water, forests and fisheries resources.

There are substantial differences in production areas and crops within the region. Sugar and banana production dominates coastal areas while dairying is the major farming activity on the Tablelands. Primary agricultural products include vegetables, tropical fruits and beef.

Fish habitats form the basis of the commercial, recreational and Indigenous fisheries in Queensland. These three fishing industry sectors are important from an economical, social and cultural perspective.

The commercial fishing catch is worth $15–20 million annually to the regional economy, while recreational fishing is a popular leisure activity with ongoing economic benefits from local and tourist participation. These fisheries have significant flow-on benefits for regional and national economies. Fishing also has significant cultural heritage value to the Indigenous communities in FNQ. Other marine-related industries include the aquaculture farming of redclaw, prawns, fish and crocodiles.

Objective

- Maintain a profitable and sustainable agricultural sector in rural areas and fishing industry adjacent to coastal areas, producing and marketing a diverse range of products for domestic and export markets.

Land use policies

5.4.1 Sites and corridors for infrastructure that supports agricultural development, are identified, maintained and protected to support the operation of those facilities and the ongoing operation of agricultural industries.

5.4.2 Threats to primary production from incompatible development are identified and managed through land use planning and where appropriate, by developer-established buffers.

5.4.3 Potential conflict between primary industries and urban activities is managed through land use planning and, where appropriate, developer-established buffers.

5.4.4 Areas for permanent or periodic food markets that increase access to fresh produce and support regional and local primary producers and food industries are planned, supported and maintained.

5.4.5 Value adding of primary products is encouraged close to the source of production to diversify farm and local economies and reduce transport requirements.

Aligned strategies

5.4.A Opportunities to develop regional and local food economies are investigated and collaborative efforts to promote local food consumption are supported.

5.4.B Long-term food supply needs are considered in land use, resource and infrastructure planning by conserving and enhancing productive land, water supply and transport routes.

5.4.C Alternative agricultural land use options are investigated to promote diverse, efficient, resilient and strong rural economies.

5.4.D Climate change considerations are included in farm management and risk planning in the agribusiness sector.

5.4.E A sustainable fishing industry located adjacent to coastal areas is facilitated, producing and marketing a diverse range of products for domestic and export markets.

5.4.F Strategically and historically important fishing grounds are identified and maintained for current and future fish harvesting commensurate with ecological sustainability.

Explanatory notes

State Planning Policy 1/92: *Development and Conservation of Good Quality Agricultural Land* protects agricultural land as an economic resource. The Department of Natural Resources and Water has mapped areas of good-quality agricultural land that support the agricultural industry (see map 6). Detailed maps of good-quality agricultural land can be viewed at Department of Natural Resources and Water offices. Planning Guideline *Separating Agricultural and Residential Land Uses* (Department of Natural Resources et al, 1997) provides guidance on establishing buffers to minimise conflicts between agricultural operations and incompatible urban activities.

The Department of Primary Industries and Fisheries has delegated responsibility under the *Environmental Protection Act 1994* for assessment and approval of intensive animal industries (feedlots and piggeries) and can provide advice on appropriate separation distances between sensitive land uses.

There are considerable opportunities to enhance the region's agricultural industry through expansion of existing activities, development of value-adding processes and the introduction of new crops.

The local and regional food movement is a collaborative effort to build more

self-reliant local and regional food economies. This involves integrating food production, processing, manufacturing, distribution and consumption to enhance the ecological sustainability of localities and regions. It also promotes diverse, efficient, resilient and strong rural economies. Access to fresh produce also provides a range of health benefits for the community.

Management of fish habitats is delivered through the *Fisheries Act 1994*. The key provisions deal with marine plants and other fish habitats, declared fish habitat areas and waterway barriers. Marine plants include salt marsh, mangrove and seagrass communities and may include *Melaleuca* and other tidal plant species. Private development extending onto fish habitats is to be avoided.

Where there are no locations for constructing new public infrastructure other than on fish habitats, the development impacts should be temporary or minimised through design, scale of development, and best management practice during construction and operation phases.

Where development impacts to fish habitats are likely, appropriate offset and onsite mitigation measures are to be addressed and implemented. Offsets may include land exchange of fish habitats, greater security for existing fish habitats, restoration of degraded fish habitats and funding of fish habitat research to facilitate better management (see sections 1.1 and 1.2).

Department of Primary Industries and Fisheries policies, codes and guidelines on the management of fish habitats document in detail the specific management principles and technical considerations for:

- marine plants
- declared fish habitat areas
- insect control
- dredging and extractive activities
- offsets
- mitigation
- waterway barriers
- restoration
- buffers
- ponded pastures
- erosion
- beach replenishment.

5.5 Tourist development

Tourism has been the fastest growing industry in FNQ over the past three decades and provides significant employment benefits for the region. The development of the Cairns international airport, improved access to high-quality natural attractions such as the reef and rainforests, and increased global travel has contributed to this growth.

The region's tourism industry is predominantly based on natural and cultural features. Tourist activities are primarily concentrated between Mission Beach and Cape Tribulation along the coast, and those areas of the Great Barrier Reef with direct access from Cairns, Port Douglas and Mission Beach. Key visitor attractions include the Great Barrier Reef, the Wet Tropics rainforest, scenic landscapes, natural areas and a tropical climate. Protection of the natural attractions and character of the region is important to the sustainability of the tourism industry in the region.

Although the tourism industry is looking to diversify into areas such as cultural and business tourism, nature-based activities are expected to remain the major drawcard and the focus of product promotion for the region. Sustainable opportunities must be identified and developed to cater for nature-based tourism needs over the long term. Future opportunities in the tourism sector lie in:

- the potential to increase the region's business tourism market
- ecotourism with the presence of two World Heritage listed sites located side by side in the region
- the expansion of cultural tourism.

Objective

- FNQ's international reputation as a world-class destination for nature-based and sustainable tourism is maintained and enhanced.

Land use policies

5.5.1 Tourist development that incorporates a permanent residential component may be undertaken only within the urban footprint.

5.5.2 Tourist development, including development that incorporates short-term accommodation for tourists, may be undertaken within the regional landscape and rural production area where there is an identified need in a subregion and the accommodation:

(a) is of a nature and scale that is sympathetic to the maintenance of the regional landscape and rural production values

(b) minimises the impact on good-quality agricultural land

(c) avoids areas of high ecological significance and coastal hill slopes and headlands (see sections 1.1 and 2.3).

5.5.3 Where tourist development is located within a strategic rehabilitation area, the development should result in an increase in ecological connectivity or habitat extent through rehabilitation of native vegetation cover.

5.5.4 Tourist attractions (that do not include residential or tourist accommodation) may be developed in the regional landscape and rural production area where such development:

(a) is of an appropriate scale for the locality

(b) is a facility functionally dependant on being linked with the rural, ecological or resource values of the locality

(c) where located in areas of high ecological significance, provides opportunities to present and interpret the ecological values of the area and is designed and operated to have no more than a minor or inconsequential impact on ecological values of the area and any impacts are offset

(d) where located within a strategic rehabilitation area, increases ecological connectivity or habitat extent through rehabilitation of native vegetation cover.

5.5.5 Workers accommodation may be provided in tourist development in the regional landscape and rural production area, where there is limited alternative housing and/or limited workforce available locally.

Aligned strategies

5.5.A Ecotourism infrastructure development and maintenance (such as visitor facilities) reflects best practice minimal impact design and procedures appropriate to the setting and maximise presentation opportunities.

5.5.B Safe, reliable and appropriate access to ecotourism attractions is provided.

5.5.C The cumulative number, location and type of visitor sites is managed so that they do not adversely affect World Heritage values while maximising options for presenting the area.

5.5.D Adequate and appropriate levels of private and public infrastructure are provided on a timely basis to support and enhance the ecologically sustainable development of the leisure and business tourism industry.

5.5.E The development of sustainable cruise shipping infrastructure and services is facilitated.

Explanatory notes

FNQ offers a choice of tourism styles, from conventional hotels and apartments in main centres such as Cairns and Port Douglas to small-scale nature based tourism ventures focused on the natural environment. The regional plan aims to maintain a mix of tourism choice by focusing medium to large-scale tourism developments in urban-footprint areas, while allowing smaller scale tourism developments within regional landscape and rural production areas. This also allows for opportunities for economic diversification for rural landholders.

In the regional landscape and rural production area the intention is that proposals for small scale tourist accommodation be considered through the usual local government development assessment processes and do not trigger the FNQ Regulatory Provisions (see part D).

It is recognised that some medium to large-scale tourism developments may be appropriate within the regional landscape and rural production area, but these require more detailed assessment of the possible impacts of the development on the regional landscape values, and on neighbouring communities. The infrastructure requirements to service large developments—such as roads, power and water—also need to be considered. Medium to large-scale tourism accommodation developments in a regional landscape and rural production area will be managed through the FNQ Regulatory Provisions.

Integrated resorts that incorporate a permanent residential component within the resort complex are not considered consistent with the landscape values of the regional landscape and rural production area. These would undermine the intent of the preferred settlement pattern for the region (see part D). However, this does not preclude the provision of workers' accommodation or a caretaker's residence associated with medium to large-scale tourist accommodation in the regional landscape and rural production area, where there is limited alternative housing and/or limited workforce available locally.

The plan recognises the requirement of low-impact, nature-based tourism attractions to be located within or in close proximity of areas of high ecological significance. These facilities play an important role in increasing the knowledge of visitors about the values that makes FNQ a region of outstanding ecological significance and improving the overall visitor experience. Smaller scale tourism development that includes short-stay accommodation for visitors may also be appropriate for locations adjoining areas of high ecological significance or in strategic rehabilitation areas. These areas can provide attractive locations for this type of development and will generally result in enhanced ecological connectivity or habitat extension (see section 1.1).

The *Queensland Tourism Strategy* (Department of Tourism et al, 2006), combined with a destination management plan for Tropical North Queensland, provides a detailed strategy for growing tourism in FNQ and Queensland as a whole. The *Tropical North Queensland Destination Management Plan* (Tourism Queensland, 2005) is a directional rather than a prescriptive document. It should be used as a guiding tool for the development of tourism strategies and business plans, and as a basis for further planning and discussion between partners and stakeholders.

The *Queensland Cruise Shipping Plan* (State Development et al, 2002) provides a whole-of-government framework for developing cruise shipping by adding value to industry initiatives and planning, developing, managing and marketing cruising in Queensland waters.

The *Tablelands Tourism Strategic Development Strategy* (Global Tourism and Leisure Pty Ltd, 2003) and the *Atherton Tablelands, Cairns Highlands Investment Environment* (Tablelands Futures Corporation, 2007) have identified a need for greater variety in tourist accommodation types in the region. In particular there is a shortage of high-quality and/or medium to high-volume tourist accommodation on the Atherton Tablelands. This in turn has implications for the tourism industry in the area.

6. Infrastructure

Desired regional outcome

Timely provision of infrastructure to meet community and industry needs in a cost effective and efficient manner, consistent with retention of the region's environmental, social and economic values.

Rapid population growth and low density urban development in FNQ has made it difficult to provide well located and timely infrastructure. Increasingly, the form and density of development must be planned to assist in providing efficient and cost effective infrastructure and services. Infrastructure helps shape and attract development. The provision of new infrastructure and the maintenance of existing assets are strategic tools to achieve the preferred pattern of development. Map 13 shows the location of region's key infrastructure.

It is intended that key infrastructure will proactively support the preferred development pattern rather than react to demand. Key challenges include:

- maximising the use of existing infrastructure by managing it efficiently and effectively
- finding better ways to prioritise and coordinate new infrastructure projects
- establishing the correct balance between funding new infrastructure and
- maintaining existing assets
- incorporating climate change resilience into new and existing infrastructure
- harnessing innovative funding and delivery mechanisms.

Timely provision of appropriate infrastructure is also critical to achieving the government's economic development and employment objectives. For example, development at Mount Peter is dependent on the availability of transport, energy and water infrastructure.

6.1 Infrastructure, planning and coordination

Significant cost and service efficiencies can be achieved by improving coordination between individual infrastructure agencies and between infrastructure, land use and economic planning agencies.

Infrastructure planning will be undertaken by the government to support the regional plan, establishing priorities for regionally significant infrastructure over the next five, ten and twenty year planning timeframe. Infrastructure planning will ensure state agencies align their infrastructure and service priorities with the regional plan. It will also provide greater coordination of infrastructure and services provided by state agencies and government owned corporations, as well as local government and the private sector.

Infrastructure planning is the principal mechanism for identifying, prioritising and delivering infrastructure projects to support the regional plan and is based on the principle that strategically focused infrastructure investment will help to lead and support the preferred pattern of development and achieve key policy outcomes. In some instances, this means implementation ahead of existing need.

Objective

- Infrastructure is proactively planned, coordinated and provided to support desired regional growth in an efficient and effective manner, minimising the region's contribution to the causes of climate change and to build resilience to the impacts of climate change and oil vulnerability.

Land use policies

6.1.1 Development in the areas planned for urban growth is appropriately sequenced to facilitate more efficient provision of infrastructure and services and reduce costs.

6.1.2 Infrastructure is supplied in a coordinated, efficient and orderly way, and encourages urban development in areas where adequate infrastructure exists or can be provided efficiently.

6.1.3 Demand for resources is managed in order to maximise the efficient use of transport, energy and water resources and delay the need for additional infrastructure provision.

6.1.4 Key sites, corridors and buffer areas for current and future regional infrastructure and services are identified, preserved, protected and where appropriate, proactively acquired and managed.

6.1.5 Where adverse impacts cannot be avoided, impacts on key sites, corridors and buffer areas are minimised or mitigated in accordance with best practice.

6.1.6 New infrastructure corridors avoid areas at risk from flooding, storm surge, bush fires or cyclone damage or are designed and constructed to mitigate the risk.

6.1.7 Queensland Government infrastructure priorities are considered when preparing structure plans, master plans and priority infrastructure plans.

Aligned strategies

6.1.A Desired regional growth is supported by coordinating, planning, prioritising and sequencing infrastructure through infrastructure plans, strategic plans, programs, budgets and statutory planning.

6.1.B Infrastructure development within an area of high ecological significance is located, designed and operated to avoid impacts on the ecological values and where avoidance is not possible, impacts are minimised (see section 1.1).

6.1.C Opportunities for infrastructure providers to work collaboratively to coordinate the planning, provision and sequencing of infrastructure sites and corridors are encouraged and facilitated.

Explanatory notes

Infrastructure coordination takes place at national, state, regional and local levels. To ensure coordination with local government, the Queensland Government is holding regular subregional infrastructure forums with councils. These forums complement other state and local government infrastructure processes such as the Main Roads and Local Government Road Management and Investment Alliance 2002-2007 and will ensure a shared understanding of infrastructure issues and priorities.

The FNQ Infrastructure Plan is a key mechanism for implementing the FNQ Regional Plan in future years. An infrastructure plan provides opportunities to plan, review, monitor, prioritise, sequence and report (unpublished) on infrastructure projects on a region-wide basis. The FNQ Infrastructure Plan is linked to the State Budget.

In preparing structure plans, master plans and priority infrastructure plans local government should take account of Queensland Government infrastructure priorities. Priority Infrastructure plans are prepared by local government in accordance with IPA Chapter 5, Part 1 and the *Integrated Planning Regulation 1998* (s4).

To achieve the strategic intent of the regional plan, sites and corridors for infrastructure such as transport and freight networks, pipelines, dams, transmission and distribution lines must be identified and preserved well ahead of time. Where possible, infrastructure sites and corridors should avoid areas of high ecological significance (see map 3), particularly east–west corridors across coastal lowlands. Infrastructure planning may identify a number of investigations where, dependent on circumstances, it would be prudent to preserve potential corridors and sites at an early stage (see policy 1.1.1).

Infrastructure Corridors

Infrastructure corridors can contribute to the fragmentation of habitat and the disruption of ecological processes that underpin the biodiversity values of the surrounding land. Infrastructure projects within FNQ should seek to:

- manage ecologically significant sites and conserve the habitat of endangered flora and fauna
- reduce impacts on flora, fauna and dependent ecosystems through appropriate and practical measures, including minimising vegetation clearance for infrastructure works and undertaking revegetation and restoration works
- where practicable, to enhance connectivity and reduce the barrier effect of infrastructure corridors on the safe passage of animals and responding to changes in habitat preferences contributed to by climate change and other causal factors
- take effective measures to protect water quality in receiving waters
- support research and education in matters related to ecology and the implications for responsible infrastructure design, construction, operation and maintenance.

Co-locating infrastructure has the potential to reduce the need for new infrastructure sites and corridors, thereby reducing the overall cost to the community. For example, emergency services, transport and public utilities could be co-located in generic infrastructure corridors.

The Queensland Government's Smart State Strategy supports education, training and skills, research and development, and innovation. It provides funding initiatives for infrastructure to support research facilities and technology incubators.

Demand management aims to make better use of existing infrastructure by modifying consumer behaviour, rather than directing limited resources towards major new or upgraded infrastructure. The principles of demand management are commonly considered in relation to transport, water and energy resources.

Demand management initiatives can include a broad range of economic, social planning and regulatory tools, such as:

- educational or incentive measures to bring about voluntary changes to consumer behaviour, including reductions in use
- the introduction of technology to make better use of existing resources
- restrictive pricing measures designed to reflect the true cost or increase the comparative attractiveness of alternatives.

6.2 Infrastructure funding

The annual State Budget process is the principal mechanism for identifying, prioritising and delivering infrastructure projects. It also assists the coordination of infrastructure and services owned by state agencies, government-owned corporations, local government and the private sector.

Timely funding of infrastructure is required to ensure orderly development that supports the preferred settlement pattern. Funding of regional infrastructure must address whole-of-life costs to ensure equity between current and future beneficiaries and users. Where appropriate, options for funding and delivery of these projects will be evaluated through the Queensland Government's value for money framework. This framework promotes innovation and ensures maximum effectiveness of planned investment.

Objective

- Facilitate efficient funding of infrastructure to new and existing urban areas.

Land use policies

6.2.1 State infrastructure agreements are developed between the Queensland Government and benefiting landowners and developers, where state infrastructure is provided.

6.2.2 Funding and charging mechanisms for infrastructure in the region are efficient, appropriate and transparent.

Aligned strategy

6.2.A Funding and charging policies for infrastructure services in the region are efficient, appropriate and transparent.

Explanatory notes

The value for money framework was developed to provide the basis for the implementation of Queensland's public private partnerships policy. It provides a comprehensive set of procedures by which to evaluate the full range of project delivery options for infrastructure and identifies the best value for money outcome for government and the community. The framework has been endorsed by the Queensland Government and applies to all infrastructure projects above $100 million over the life of the asset.

There are a number of funding and charging mechanisms used to finance infrastructure projects and services. These include:

- federal and state taxes
- local government rates
- state agency funding
- special purpose levies
- user charges
- private investment
- public private partnerships
- developer contributions.

Where the government is providing major new infrastructure to facilitate development in the region, landowners and developers of new areas who stand to benefit significantly will be required to contribute to infrastructure provision through a state infrastructure agreement or contribute works or land in lieu.

6.3 Energy

FNQ is experiencing increasing demand for energy, driven by strong population and economic growth, major industrial development and changing lifestyles, including increased use of electrical appliances such as air conditioning. The two critical electricity issues facing the region are security of supply and the internal distribution of high voltage electricity. Long-term planning is essential to ensure that the region's electricity needs can be met in an efficient, effective and environmentally acceptable manner and on a basis which gives greater guarantee of supply.

The Queensland Government is committed to ensuring that consumers have access to reliable, secure and competitively priced energy. At the same time, the government recognises the need to manage and reduce greenhouse gas emissions through cleaner energy production and enhanced energy efficiency to achieve a sustainable energy sector for the benefit of all Queenslanders.

Reducing greenhouse gas emissions from Queensland's energy sector is a key energy policy focus. The government has introduced regulations and incentives that will ensure the state's continued energy security, while balancing industry competitiveness and climate protection. These measures do not include nuclear power. In response to community concern, the government has legislated to prohibit the development of nuclear facilities in Queensland.

The Queensland Government has determined that there is a need to set a target for greenhouse gas emission reductions. In 2007 Australian Government jurisdictions agreed that a national emissions trading scheme would place Australia on a path towards achieving a 60 per cent reduction in national emissions by 2050, compared with 2000 levels.

The Australian Government confirmed in 2008 that an emissions trading scheme will commence in 2010. Emissions trading is central to achieving the government's goal of reducing Australia's greenhouse gas emissions by 60 per cent by 2050.

Objective

- Sustainable energy generation, transmission and distribution capacity is provided and maintained; using viable alternative energy sources where practicable, to service existing and future settlement patterns and meet the needs of a growing population and industry.

Land use policies

6.3.1 Viable renewable energy source generation, including sugar mill, landfill, hydro, solar and wind farm generators, are recognised as acceptable land uses and supported for their contribution to reducing greenhouse emissions.

6.3.2 Energy efficient principles are included in the design and layout of new urban areas and developments.

6.3.3 Demand management principles are implemented in the design and construction of new development to improve energy efficiency and reduce energy demands.

6.3.4 Underground electricity is provided in new urban areas where appropriate.

Aligned strategies

6.3.A The reliability and security of electricity supply is enhanced to support regional growth.

6.3.B Reticulated gas is provided in major greenfield areas where appropriate.

6.3.C Redevelopment and infill sites connect to reticulated gas where available.

Explanatory notes

The majority of the region's electricity supply is provided from Powerlink and is distributed by Ergon Energy. The primary supply consists of two major powerlines, one along the coastal plain from Ingham and a second along the Tablelands through Ravenshoe and Mareeba.

There are hydro-electric power stations at Tully and Barron Gorge. Both of these facilities are used to supplement the supply from the state grid. Proposals have been considered for development of a large hydroelectric scheme known as the Tully-Millstream to expand the region's generation capacity. The future of this scheme is dependent on the long-term strategies adopted by government to meet state and regional electricity demands. The scheme is currently not in the government's forward electricity generation strategy.

On 3 June 2007, the Queensland Government released its *ClimateSmart 2050* strategy containing several new energy policy initiatives to assist Queensland in meeting the Queensland Government's greenhouse gas emissions target. ClimateSmart 2050 positions Queensland's stationary energy sector to invest in new technologies and maximise energy conservation in Queensland businesses and homes.

Key elements of the Queensland Government's new Smart Energy Policy (outlined in *ClimateSmart 2050*) to reduce greenhouse gas emissions through cleaner, diversified generation include:

- Queensland renewable energy fund
- 10 per cent renewable and low emission target scheme by 2020
- solar feed-in tariff
- increase of the Queensland gas scheme target from 13 per cent to 18 per cent.

These new initiatives will stimulate investment in renewable energy and gas fired power stations in Queensland to diversify the state's energy generation mix, and provide support for households to install domestic solar power systems. The smart energy policies will build on the outcomes already achieved by the Department of Mines and Energy in reducing the state's reliance on coal based generation through:

- the Queensland 13 per cent gas scheme
- investment in renewable energy
- geothermal energy legislation
- green energy consumer products.

Renewable energy plays an important role in the state's generation mix with biomass (primarily bagasse or sugar cane waste) the most commonly used renewable resource in Queensland. Currently the state has the capacity to generate approximately 400 megawatts of biomass-fired electricity. The use of biomass as an energy source has added value to Queensland's sugar industry. Geothermal exploration permits have also been issued in FNQ region.

Currently, renewable energy generation accounts for 3.2 per cent of Queensland's electricity generated each year. This includes both on- and off-grid electricity generation. Under the 10 per cent renewable and low-emissions target scheme, electricity retailers will be required to source 10 per cent of their annual energy sales from Queensland based renewable and low-emissions generators by 2020.

The government has invested in a number of renewable energy generation assets in FNQ, including:

- Barron Gorge hydro station
- Kareeya hydro station
- Koombooloomba hydro generator
- Wind Hill wind farm.

As a result of national competition reforms, the electricity industry in Queensland operates as an open market. The government's principal role in this market is to ensure a supportive investment climate exists which encourages timely investment to meet emerging demands.

The electricity generation sector is competitive, with substantial private sector interest in providing future generating capacity. The government will monitor investment activity to ensure there is adequate generation capacity for the region as it grows.

A major challenge for providing gas distribution networks in FNQ is the distance from natural gas supplies and the lack of infrastructure such as pipelines. Liquid Petroleum Gas (LPG) is currently imported into the region. There is potential to diversify to Liquefied Natural Gas (LNG) in FNQ over time. There are reticulated gas systems in some suburbs of Cairns and in Port Douglas. Reticulated gas should be provided in major greenfield areas, and redevelopment and infill sites, where appropriate.

In ClimateSmart 2050, the government commits to all its office buildings being carbon neutral by 2020 and to offset emissions from the vehicle fleet, offsetting 50 per cent by 2010 and 100 per cent by 2020.

The Queensland Government is proposing a number of improvement measures that will help make new and existing Queensland homes more energy and water efficient, and become more adaptable to people's changing lifestyles.

As it will not be practical or cost-effective to install all of the proposed improvement measures into existing buildings, new and renovated homes will have different improvements to existing homes. The improvements proposed are:

Require all new houses be built to a 5-star (out of 10) energy equivalent rating, proposed from 1 January 2009

Investigate requiring all new units to be built to a 5-star (out of 10) energy equivalent rating

Investigate providing better recognition of outdoor–indoor living areas in Queensland's building standards

Investigate developing a star rating for building materials

Investigate banning residential estate covenants which restrict the use of energy efficient design features and fixtures.

The proposed improvement measures for new and renovated homes will focus on improving designs so that houses are constructed with inherent features that will deliver sustainable outcomes for the life of each building. Designers of new homes will be encouraged to use more environmentally sensitive features such as better orientation of rooms, ceiling and wall insulation, natural ventilation, and indoor–outdoor connections provided by decks and patios. It is also proposed to increase the required energy-and water-efficiency ratings of fixtures such as light bulbs, tap ware and toilets.

For existing homes the improvement measures will include phasing-out the installation of electric hot water systems in gas reticulated areas from 1 January 2010. It is also proposed that owners of existing houses and units complete a sustainability declaration at point-of-sale and point-of-lease (rent). The declaration will assist in raising Queenslanders' awareness of the benefits of sustainable housing features.

From 1 March 2006, changes to the Sustainable Building Queensland Development Code required new houses to be more sustainable, ensuring they use energy more efficiently. This is anticipated to result in new houses using 33 per cent less electricity. As part of these laws, all new houses are required to have energy efficient lighting in at least 40 per cent of the house and greenhouse efficient hot water systems such as solar, heat pump or gas hot water.

In 2006, the government committed to mandating a blend of five per cent ethanol in all petrol produced in Queensland by 2010. This mandate supports the government's $7.3 million *Queensland Ethanol Industry Action Plan 2005-2007* (Department of State Development and Innovation, 2005) to develop Queensland's ethanol industry and future. This initiative will reduce greenhouse gas emissions by approximately 500 000 tonnes each year.

6.4 Waste

Urban growth will place pressure on local governments to deal with the waste generated by an increasing population. Local governments in the region are already actively seeking ways to manage waste more efficiently. Specific initiatives include reviewing options to promote reduction, re-use and recycling of wastes together with improved coordination of waste management strategies. Local government amalgamation may result in further coordination of waste strategies.

The proximity principle—fostering and encouraging local solutions for waste management and resource recovery—will be encouraged where feasible. The focus will be more on providing local facilities rather than regional, such as transfer stations. Recycling and other waste recovery facilities may need to be regional to achieve economies of scale and for proximity to transport infrastructure. Landfill facilities should also be regional but these are the least preferred method on the waste hierarchy.

The preferred location for any future landfill facilities is the western side of the Great Dividing Range, removed from the Wet Tropics, the coastline and Great Barrier Reef. Any future landfills should be located in geologically stable areas that are not flood prone or adjacent to areas of high ecological significance (see map 3 and section 1.1).

Objective

- Manage solid waste in the region to minimise adverse impacts on the environment and the community and promote sustainable waste management practices.

Land use policies

6.4.1 An integrated and coordinated network for sustainable waste management and resource recovery is adopted across the region to achieve greater resource use efficiencies and effectiveness, and better environmental, social and economic outcomes.

6.4.2 Future landfills and resource recovery facilities are located in geologically stable areas that are not flood prone now or in the future, or within or adjacent to areas of high ecological significance.

6.4.3 Development assessment criteria for commercial and multi-unit dwellings includes provision for space and access for waste bins, including recycling.

Aligned strategies

6.4.A Waste generation is avoided in the first instance. Where waste generation cannot be avoided, practices are implemented to reuse, recycle or recover wastes and materials prior to disposal.

6.4.B Waste disposal to landfill is minimised through applying waste recovery techniques which gain optimum recovery of reusable and recyclable materials.

6.4.C Waste is recognised as a resource and diversion of wastes for further processing, reuse and recycling is facilitated.

6.4.D Pollution of waterways and the reef is reduced through storm water quality improvement devices and litter prevention and management (see section 7.1).

6.4.E The proximity principle is adopted by fostering and encouraging local solutions for waste management and resource recovery, while recognising that some facilities need to be regional to achieve economies of scale and be close to transport infrastructure.

6.4.F Best practice waste pricing is adopted balancing the true cost of waste management and encouraging waste reduction, reuse, and recovery.

Explanatory notes

The expanding population in FNQ results in more waste being produced each year. Finding ways to curb waste production and make better use of finite and precious resources is a key issue for the future sustainability of the region.

Some of the challenges for FNQ are:

- the appropriate location of waste and resource recovery infrastructure
- the need to stimulate investment in new resource recovery infrastructure
- improving resource recovery from households, businesses and building construction
- how to maximise transport efficiency in the waste industry
- finding ways to reduce greenhouse gas emissions from landfills and throughout product lifecycles
- educating consumers about purchasing choices and consumption

The EPA will develop a new waste management strategy to tackle these issues and provide a clear direction for a more sustainable future.

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. Developed in conjunction with local government and industry, the legislation benefits Queensland communities through safer disposal practices and cost savings from improved planning and management of waste services.

The policy provides a preferred waste management hierarchy and principles for achieving good waste management. The waste management hierarchy moves from the most preferred to least preferred method:

- waste avoidance
- waste reuse
- waste recycling
- energy recovery from waste
- waste disposal.

The principles for achieving good waste management include:

- the polluter-pays principle—all costs associated with waste management should, where possible, be worn by the waste generator
- the user-pays principle—all costs associated with the use of a resource should, where possible, be included in the price of goods and services developed from that resource
- the product-stewardship principle—the producer or importer of a product should take all reasonable steps to minimise environmental harm from the production, use and disposal of the product.

These principles and the waste management hierarchy provide a basis for waste management programs that may be required as a condition of approval for an environmentally relevant activity for industry, for voluntary industry waste reduction programs and for state and local government waste management strategic plans.

The *State of Waste and Recycling in Queensland 2006* report gives a high level overview of current rates of waste generation, recycling and waste sent to landfill. The report shows approximately 85 per cent of 87 000 households have access to kerbside recycling. Tablelands, Cassowary Coast and Cairns regional councils provide kerbside recycling to varying degrees. Council size and remoteness currently have a significant bearing on councils' ability to provide this service.

As part of a regional waste initiative organic waste is being transported and processed in Cairns at the Bedminster bioconversion plant. Collected recyclable materials from Cairns Regional Council are sorted into different products at a materials recycle facility in Cairns for processing and reuse.

Solid waste disposal facilities in the region are both local government and privately owned. Existing waste management infrastructure in the region comprises of an estimated 17 operating landfills, 29 waste transfer stations and one material recycle facility in Cairns. Springmount waste management (landfill) facility near Mareeba has 140 hectares of land and is expected to last 50 years. Springmount has the potential to produce green electricity from the landfill gas.

6.5 Information communication technology

Communications play a critical role in economic development, education and the health and wellbeing of communities, particularly those located in remote areas.

Improved information communication technology (ICT) services are needed if residents of FNQ are to optimise global communication opportunities.

The Australian Government has principal responsibility for the policy and regulatory environment of the telecommunications industry. State and local governments are constrained in the range of actions available to them to influence investment in telecommunications infrastructure. The regional plan has a limited role in this regard.

Objective

- Provide affordable access to reliable and robust high speed telecommunication throughout the FNQ region to ensure access to markets, information and services.

Land use policies

6.5.1 Planning schemes include code provisions that seek to improve connection to the digital network in new residential subdivision and commercial and multi-unit development in the urban footprint.

Aligned strategies

6.5.A Access to reliable and robust high speed telecommunications is facilitated throughout FNQ.

6.5.B Early provision of conduits or optic fibre in new developments, multi-tenanted buildings and major infrastructure projects is considered to reduce time delays and the cost of providing telecommunications infrastructure and services.

6.5.C Opportunities for telecommunications is considered when installing public utility networks such as underground electricity and water.

Explanatory notes

In recent years, the ICT policy environment has been progressively deregulated. While a more competitive marketplace for infrastructure has developed, the incumbent infrastructure provider is still the main supplier of the last mile—the connection to the individual or end user, mainly using existing copper wire connections.

There is duplicated access to advanced fibre optic telecommunications in many metropolitan areas, but gaps in most outlying and more remote areas. The optimal technology to provide the next generation broadband is still considered to be fibre optical cable, but other technologies such as Asymmetric Digital Subscriber Line (ADSL) and wireless technology will also be used in particular situations to satisfy demand, particularly in multistorey buildings, and outlying and remote areas.

At present in Queensland, there are differing processes applied by state and local governments when assessing approvals for telecommunications infrastructure. State and local governments are working together to review this, with the aim of providing a consistent approach to infrastructure approvals across the State.

Broadband services are an indispensable component of business growth and efficiency in modern economies as well as being a powerful enabling technology for the ICT industry and an important ICT industry sector in their own right.

In March 2008, the Australian Government recognised the need for broadband through its commitment to a National Broadband Network costing $4.7 billion and servicing 98 per cent of the homes and businesses across Australia. The Australian Government indicated that the remaining 2 per cent are to have improved broadband services over five years. The Australian Broadband Guarantee funding program of $270.7 million over four years provides the basis for this improvement.

The Regional Telecommunications Independent Review Committee presented its report, *Framework for the Future*, to the Australian Government on 5 September 2008.

The Queensland Government has instituted improvements in the telecommunications infrastructure in Queensland through initiatives such as the Reef Network, SmartNet and Northern.net.

The Reef Network delivers high speed communications to Queensland's coastal region through underground fibre optic cable running under the 1820 kilometres rail corridor between Brisbane and Cairns. The network has significantly reduced the costs of high speed communications to Queenslanders living in the coastal regions.

Through the SmartNet procurement process, individual agreements have been reached between the Queensland Government and ICT providers. These agreements provide for:

- installation of fibre optic cable into the CBD areas of Cairns and business grade broadband infrastructure into 30 towns across Queensland
- an alternative high capacity rural broadband network.

Northern.net, a joint Australian and Queensland Government project, has extended broadband into regional areas in North Queensland, resulting in 28 small towns now being able to access residential grade (and in many cases business grade) broadband for the first time. Towns in Far North Queensland provided with broadband through Northern.net include Babinda, Cardwell, Chillagoe, Dimbulah, Herberton, Millaa Millaa, Mossman, and Yarrabah.

7. Water management

Desired regional outcome

Water for the region is safe, reliable and adequate for community needs and water quality meets human use and environmental requirements through the ecologically sustainable development of the region's water resources.

Water is a precious and limited resource necessary for life. Climate variability, climate change and other risks highlight the need to diversify water sources. The sustainable management of the water cycle is crucial to the ecological health of the region. The region's waterways support a wide range of natural ecosystems including World Heritage areas. In addition water is necessary for urban development, irrigation, power generation, recreation, and cultural and social activities. The ongoing need for water must be balanced with the needs of the environment. Further, residents will need to adapt to climate variability.

Based on current demand projections, the region will need more potable water by 2031 to meet future urban and rural growth. Demand for water is increasing as a result of population growth, increased economic activity and the expansion of irrigation areas. Urban demands are likely to increase primarily in the northern beaches of Cairns and the southern corridor between Cairns and Gordonvale. Increases are also expected in the northern Tablelands, Atherton, Port Douglas and Mission Beach.

Urban centres must apply demand management initiatives to reduce pressure on the region's water resources. It is also important for water efficiency gains to continue to be sustained by the rural sector. The region's water catchments are shown in map 14.

7.1 Protection of waterways, wetlands and water quality

Far North Queensland is renowned for its waterways and wetlands, and has many unique and highly valued environmental, natural, ecological and recreationally important catchments. Some of these catchments receive the highest rainfall levels in Australia, and the waterways can have significant water flows, particularly during the wet season and tropical cyclones. They can contain high levels of biodiversity, provide water purification, flood mitigation, rural and urban water supplies, extractive resources and electricity generation, attract nature-based tourism, and contain significant cultural heritage values. Often they provide the only natural feature in urbanised areas and provide recreational opportunities, scenic amenity, and a sense of place that are highly valued by residents.

Land use changes and developments in catchments have resulted in significant impacts on the physical condition of the region's waterways and wetlands. Urbanisation of catchments generally results in increased run-off, with related erosion, channel widening, filling in of wetlands and flooding. Many urban waterways have been cleared of native vegetation, diverted, converted to concrete drains, or replaced with stormwater pipes. Natural drainage systems and wetlands that have been replaced with artificial ones have far fewer of the desirable values.

Declining urban stormwater water quality, together with point sources of waste water, are a significant threat to water quality in and from urban centres. Rural activities and vegetation clearing can also contribute nutrients, sediments and other pollutants affecting riverine, estuary, wetland and coastal water quality. Lowering of water tables can result in acid sulfate soil exposure.

Maintaining water quality is critical to the ecological health of the region's waters, including the Great Barrier Reef lagoon. Vegetated areas along waterways and wetlands play a vital role in filtering sediment and nutrient run-off, maintaining water quality. It is therefore important that vegetation clearing and development in such areas is avoided, and where possible, these areas should be rehabilitated. Wherever practical, development needs to be set back from waterways and wetlands.

The focus of the following policies is on protecting and restoring the region's water quality and the physical condition of waterways and wetlands. Nonetheless, implementation of these policies will also provide significant benefits to other waterway and wetland values, including biodiversity, ecological values, wildlife corridors, open space and amenity in urban areas, and will also support policies to reduce the risk of flooding and the impacts of natural disasters.

Objective

- Protect and improve the physical condition, ecological health, environmental values and water quality of surface water and groundwater systems, including waterways, wetlands, estuaries and waters of the Great Barrier Reef lagoon.

Land use policies

7.1.1 Development is planned, designed, constructed and managed in accordance with best practice environmental management to protect environmental values and meet water quality objectives of the *Environmental Protection Policy (Water) 1997* (EPP Water) for regional surface water, groundwater and wetlands.

7.1.2 Areas with high probability of acid sulfate soils are identified in local government planning schemes, and planning provisions and development complies with requirements and management measures in the *State Planning Policy 2/02 Planning and Managing Development Involving Acid Sulfate Soils* (SPP 2/02).

7.1.3 Urban development, other than for required community infrastructure, is set back from wetlands through the adoption of appropriate buffer zones, to maintain water quality and ecological functions and services of wetlands.

7.1.4 Urban development, other than for required community infrastructure, is set back from waterways through the adoption of appropriate buffer zones, to maintain water quality and ecological functions and services of waterways.

7.1.5 In certain waterway areas urban development, other than for required community infrastructure, is set back from waterways through the adoption of appropriate waterway envelopes rather than by buffer zones, to maintain water quality and ecological functions and services of waterways.

7.1.6 Planning schemes, related policies and planning instruments identify and protect appropriate waterway envelopes and waterway or wetland buffer zones, and development decisions ensure new urban development, other than for required community infrastructure, is located to avoid waterway envelopes and buffer zones.

7.1.7 Where required community infrastructure is located in a waterway envelope or buffer zone, its impact on the waterway or wetland is minimised in extent by co-locating such infrastructure wherever practicable.

Aligned strategies

7.1.A Point source release of waste water or contaminants to waters is addressed using the management hierarchy under the EPP Water, to protect or enhance environmental values and meet the water quality objectives of receiving waters.

7.1.B Urban stormwater is managed within a total water cycle management framework that includes enhanced recycling, water sensitive urban design in development, use of stormwater for water supply and avoiding or minimising contaminated stormwater release to receiving waters (see section 7.2).

7.1.C Environmental values and the achievement of water quality objectives are monitored to assess the health of waterways and the effectiveness of management actions.

7.1.D Voluntary restoration of vegetation in waterway envelopes is encouraged especially where it addresses strategic regional priorities.

Explanatory notes

The land use policies in this section apply to planning scheme reviews, master planning, community infrastructure designations and subsequent development assessment under IPA that may impact on wetlands and/or waterways. The land use policies apply to development proposals in all regional land use categories. To clarify, the land use policies on wetland or waterway buffer zones or on waterway envelopes do not apply to existing agricultural activities.

EPP Water and SPP 2/02

The *Environmental Protection (Water) Policy 1997* (EPP Water) describes the community and government endorsed environmental values, and water quality objectives to be achieved to protect and enhance these values. This requires managing the water quality discharged by urban point sources of waste water, as well as urban diffuse and rural diffuse stormwater sources. Environmental values and water quality objectives are not only important for consideration in the assessment of potentially polluting activities under the *Environmental Protection Act 1994* but should also be taken into account in development assessment, planning, works and community actions not assessed by the EPA. A complementary State Planning Policy (Water Quality) is in preparation.

The *Queensland Best Practice Environmental Management Guideline – Urban Stormwater* (EPA, 2008d) demonstrates how development and its construction can achieve best practice environmental management. This guideline replaces a number of guidelines including the Stormwater Quality Control Guidelines for Local Government 1998, and the Model Urban Stormwater Quality Management Plans and Guideline 2001.

Local governments should identify areas with high probability of acid sulfate soils in their planning scheme; ensure developments to which *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils* (Department of Natural Resources and Mines, 2002) applies is assessable against the planning scheme; and ensure the planning scheme includes a code consistent with section 5 of the SPP.

Wetland Buffers

A wetland buffer has two components:

- a support area adjacent to the wetland which maintains and supports the environmental values of the wetland.
- a separation area around the support area which protects the wetland from external threats.

Examples of the role of the support area include:

- maintaining hydrological processes (connectivity, hydrological regimes)
- supporting biodiversity by providing habitat for semi-aquatic wetland dependent species
- allowing for wetland migration due to, e.g. erosion or sea level change
- adding to the aesthetic qualities of a wetland
- providing roost sites for water birds
- shading fish habitats
- maintaining bank stability and condition.

The separation distance role includes:

- trapping and filtering sediments of surface runoff traveling to the wetland from surrounding land
- providing a physical barrier to herbicide and pesticide spray drift from adjacent crop dusting activities and
- providing an attractive visual barrier to other adjacent land uses.

Assessment methodologies, together with design and operation of development may be used to determine appropriate wetland buffers. However, in the absence of detailed local assessment the suggested minimum wetland buffers from a wetland are:

- 200 metres from a wetland of high ecological significance (see map 3)
- 100 metres from a wetland of general ecological significance (see map 3) or each high bank of an estuary channel.

Waterway buffers

Assessment methodologies, together with design and operation of development may be used to determine appropriate setbacks. However, in the absence of detailed local assessment the suggested minimum setbacks from a waterway or water body are:

- 100 metres of each high bank of a waterway with high intact riparian biodiversity
- 50 metres of each high bank of a waterway of stream order five or greater

Guidance on determining appropriate wetland buffers is provided in the *FNQ Waterway Guideline*.

Waterway envelopes

The Department of Natural Resources and Water (NRW) will determine and map waterway envelopes for the major drainage paths within new urban areas whenever planning schemes are made or reviewed and when Master Planned Area Structure Plans are prepared. The width of the mapped envelope will be determined for a particular reach of waterway based on allowances for future waterway bank erosion; for potential waterway widening should the upstream catchment becomes urbanised; for potential waterway migration over time; and for overland flow interception (to protect water quality).

Figure 9: Wetland buffers
Source: Queensland Wetlands Programme (EPA, 2003c).

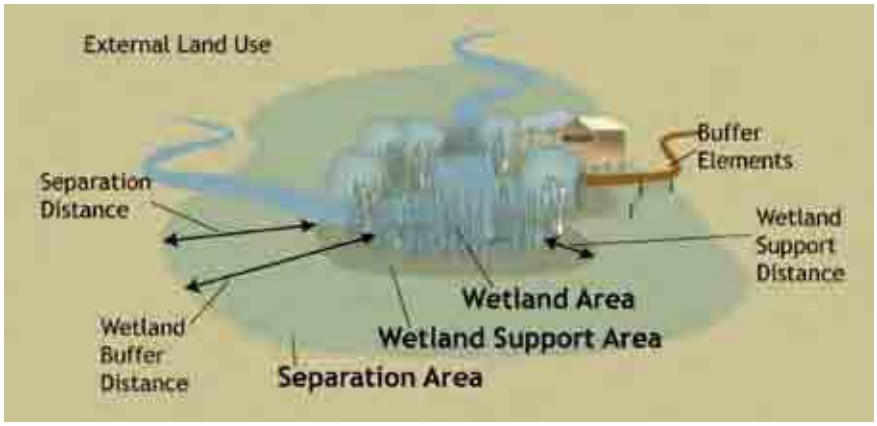
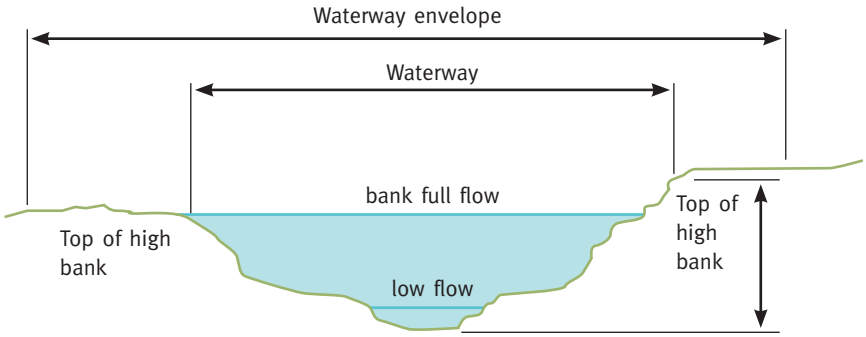


Figure 10: Features that comprise a waterway envelope



The area within a wetland or waterway buffer zone or a waterway envelope can have values for biodiversity, ecological values, wildlife corridors, open space, amenity and flood management. Where planning schemes identify and protect a buffer zone, and all or part of the area is also mapped as high ecological significance or general ecological significance (see map 3), the relevant policies in section 1.1 should also be reflected in the planning scheme for the overlap area.

Development in waterway envelopes and wetland or waterway buffer zones

Land uses and development that is generally appropriate in waterway envelopes and wetland or waterway buffer zones are conservation, open space, and required community infrastructure for which no suitable alternative exists.

Clearing of native vegetation within waterway envelopes and wetland or waterway buffer zones—including clearing that is assessable development—should occur only for required infrastructure, for which no suitable alternative exists. Existing disturbed areas within waterway envelopes and wetland and waterway buffers should be revegetated to offset vegetation losses caused by development in these areas. This could include a combination of native woody vegetation and a grass filter strip.

Where required community infrastructure needs to be located in the waterway envelope or wetland or waterway buffer zone, it should be minimised in extent by co-locating such infrastructure where practicable, such as attaching pipelines and cables to bridges (refer also to sections 6.1 and 8.1).

The policy does not affect the underlying tenure of land within waterway envelopes and wetland or waterway buffer zones. However, where the envelopes and wetland or waterway buffers are over public lands, it is possible that the local government might wish to utilise these areas for passive outdoor recreation. Development for such recreation would be permitted where it is related to the public's enjoyment of the waterway or wetland and there would be no adverse impact upon their physical processes and ecological values. Examples include walking and cycling paths that contribute to a sense of community and place (refer to sections 3.5, 8.1 and 8.2).

The FNQ Waterway Guideline provides guidance on assessing required community infrastructure that may occur within waterway envelopes and buffer zones.

As well as the EPP Water and SPP 2/02, there are a number of government instruments relevant to IPA Regional Planning, aimed at the ecologically sustainable management of water, waterways and wetlands. These include:

- *Cardwell-Hinchinbrook Regional Coastal Management Plan 2003* and *Wet tropical Coast Regional Coastal Management Plan 2003*, which provide assessment criteria for development within 100 metres of a wetland
- requirements and guidelines made under the *Water Act 2000*, including land and water management plan requirements, drainage and embankment requirements, Declared Catchment Areas, and Riverine Protection Permit requirements
- *Regional Vegetation Management Code: Coastal Bioregion* which provides criteria for assessable vegetation clearing in proximity to wetlands and watercourses.
- *Sustaining the Wet Tropics: a Regional Plan for Natural Resource Management 2004-2008*.

Water quality improvement plans prepared under the natural resource management plan for FNQ will assist in achieving the desired regional outcomes for the regional plan. These plans have been prepared for the previous Douglas Shire and the Tully River, and are in preparation for the Barron River and Trinity Inlet. It is intended to prepare water quality improvement plans for the Russell, Mulgrave, Johnstone, and Herbert Rivers in 2009.

The *Queensland Water Quality Guidelines* (EPA, 2006b) are technical guidelines for the protection of aquatic ecosystems. They complement the National Water Quality Strategy and include locally and regionally relevant water quality data for fresh, estuarine and marine waters.

Under the *Water Act 2000*, NRW is progressively preparing water resource plans on a catchment basis. These plans determine bulk water allocations between various water uses, including for environmental flows, to ensure the availability of water and water quality for water-dependant ecosystems to sustain ecological processes and environmental values.

The *Reef Water Quality Protection Plan 2003* is a joint initiative of the Queensland and Australian Governments. The goal of the plan is to halt and reverse the decline in water quality entering the Great Barrier Reef lagoon within 10 years. The plan focuses on ways to improve water quality through improved farming and grazing practices, to reduce diffuse sediments and nutrients from entering the reef waterways.

Under the *State Coastal Management Plan* (EPA, 2001a), local governments are to implement best practice environmental management for all waste water treatment plants by 2010.

Local governments are also to achieve a goal of 100 per cent beneficial reuse of average dry weather flows of treated water reclaimed from waste water treatment plants by 2018. Industry, community groups and governmental agencies all have activities underway to improve the quality of water flowing into the Great Barrier Reef lagoon.

The catchments of the Staaten River and Hinchinbrook Island have been declared wild rivers under the *Wild Rivers Act 2005*, in recognition that they have been almost untouched by development and are therefore in near natural condition, with almost all of their natural values intact. They are important because they help sustain healthy ecosystems for native plants and animals; support sustainable economic activities, such as grazing, fishing and eco-tourism; and provide unique opportunities for recreation and tourism. Water allocations, mining and certain developments under IPA, such as agriculture, animal husbandry and material change of use are restricted in such areas, and developments in these areas must comply with the Wild Rivers Code.

To assist local governments achieve waterway health outcomes the state government may provide financial assistance. Funding for the Water and Sewerage Program (WASP) is subject to the general conditions of funding under guidelines issued by the Department of Local Government, Sport and Recreation.

Through the Queensland Wetlands Programme wetland mapping has been conducted for the study area and is available in a number of formats including online through Wetland*Info* website. In addition multiple wetland management tools are also available through Wetland*Info*.

Technical guidance on the provisions of water supply, sewerage and stormwater management services is provided in various state government guidelines including:

- Total Management Planning Guidelines
- Water Supply and Sewerage Planning Guidelines
- Queensland Water Recycling Guidelines
- Queensland Water Recycling Strategy
- Queensland Urban Drainage Manual.

Revegetation

Revegetating waterway envelopes and wetland or waterway buffer zones is desirable, especially where it provides opportunities for addressing regional rehabilitation priorities in the strategic rehabilitation areas shown on map 3. Revegetating waterway envelopes and wetland or waterway buffer zones is also supported by Water Quality Improvement Plans. The Queensland Government's objective under the *Strategy for the Conservation and Management of Queensland's Wetlands* (EPA, 1999) is to avoid further loss or degradation of natural waterways and other wetlands unless overriding public interest can be shown.

Landholders and community groups make an invaluable contribution to waterway restoration across the region. The *draft Wetland Management Handbook: A Guide to Managing Wetlands in Intensive Agriculture with Farm Management System* (DPI&F, 2008) and *SmartCane Riparian and Wetland Areas on Cane Farms: SmartCane Best Management Practice Booklet* (Smith, 2008) and various integrated catchment management plans provide further guidance in this regard. Voluntary restoration of waterways can have multiple benefits, including the creation of strong and resilient communities within the region.

Targets

- By 2010, local governments use best practice environmental management to prepare and implement urban stormwater management plans for all urban centres with populations greater than 10 000, or with populations greater than 5,000 if located within 10 kilometres of tidal waters.
- By 2018, local governments achieve a goal of 100 per cent beneficial reuse of average dry weather flows of treated water reclaimed from waste water treatment plants.

7.2 Total water cycle management

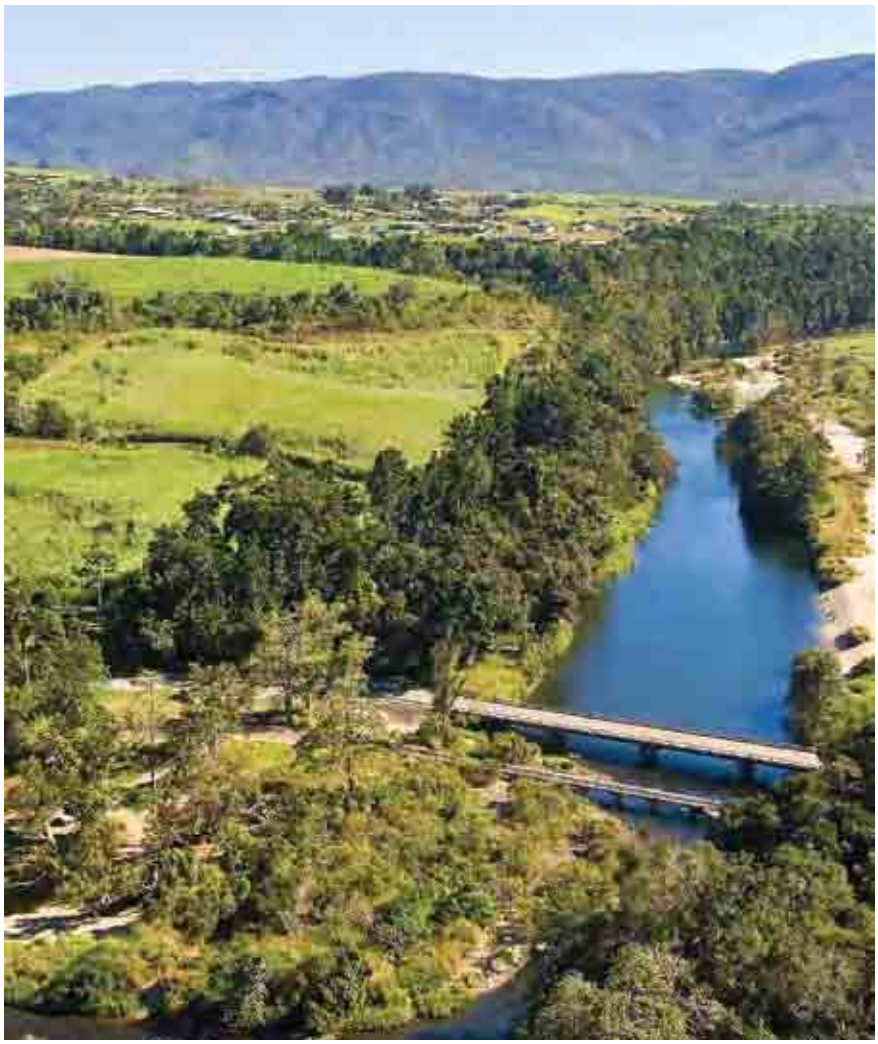
Total water cycle management recognises the finite limit to the region's water resources and the inter-relationships between the uses of water and its role in the natural environment.

Key principles of total water cycle management include:

- consideration of all water sources including groundwater, surface water, wastewater, sea water and stormwater
- using all water sources sustainably
- allocating and using water equitably
- integrating water use and natural water processes, including maintaining environmental flows and water quality.

The government is currently developing a recycled water regulatory framework to ensure a consistent and robust approach is applied to water recycling schemes across the state. The key objectives of the framework are to protect public health and ensure water recycling infrastructure continues to operate, particularly where a recycled water scheme is critical to a community's urban water supply.

Local government subsidies for water and sewerage infrastructure are provided by the Queensland Government through the water and sewerage program. Projects that reduce consumption or water losses or improve sewerage treatment and disposal are eligible for subsidy under this scheme. The environment infrastructure program, commencing in 2008, will provide subsidies for a wider range of projects, including stormwater, flooding and erosion control. Local government is required to adopt total water cycle management principles, minimise water losses and adopt water consumption targets in order to qualify for subsidies.



Objective

- Water is acknowledged as a valuable and finite regional resource that needs to be managed on a total water cycle basis, balancing the uses of water and its role in the environment.

Land use policies

7.2.1 Best practice principles are adopted in the planning, design and construction of water cycle infrastructure (including water supply, sewerage, stormwater drainage and water quality).

Aligned strategies

7.2.A Water planning in FNQ is based on the principles of total water cycle management and considers the impacts of climate change.

7.2.B Improved catchment management to maintain water quality and the health of the Great Barrier Reef is achieved in accordance with the *Reef Water Quality Protection Plan 2003*.

7.2.C Best practice environmental management principles are adopted in the planning, design and operation of sewage and wastewater collection, transport, treatment, disposal and reuse.

Explanatory notes

The Queensland Government's strategic priorities for water in the region are to:

- ensure more efficient management and use of water
- increase the supply of water to accommodate growth in the region
- diversify water supplies to manage climate variability, climate change and other supply risks
- ensure policy frameworks and subsidies support total water cycle management
- review institutional arrangements to ensure efficient, sustainable and equitable coordinated regional water planning and the delivery of bulk water supply and treatment services.

Urban and rural residential water cycle infrastructure (including water supply, sewerage, drainage and water quality) must be planned for in a priority infrastructure plan and charged for under an infrastructure charges schedule. Desired standards of service for each network must be set.

The FNQ Regional Organisation of Councils development manual sets out procedures and requirements that are consistent with IPA and its supporting legislation. They represent best practice in accordance with accepted current state and national standards for design and construction.

Reticulated sewerage infrastructure is generally provided only in major urban centres. Proposals are currently being considered to provide sewerage services to a number of smaller towns, however, most villages and rural residential developments rely on onsite disposal systems such as septic tanks. The region's reticulated sewerage systems all provide at least secondary level of treatment, with treated effluent generally being discharged to local waterways or coastal waters.

7.3 Water planning

The National Water Initiative Agreement, signed in June 2004, commits Queensland to work with the Australian Government and other states and territories to progress national water reforms. In order to provide for sustainable management and efficient use of water resources implementation of water reforms by state and local government has been underway in FNQ for a number of years. The Queensland Government is currently preparing water resource plans across the state to determine bulk water allocations between various water uses, including environmental flows.

Objectives

- Water in the region is sustainably managed to provide for the allocation and use of water for the physical, economic and social well being of the people of Far North Queensland and for the environment.
- Security of supply is increased and overall system costs minimised by planning and coordinating regional water supplies.

Land use policies

7.3.1 New development and its sequencing is consistent with projected water supply development scenarios in the FNQ regional water supply strategy.

7.3.2 Development occurs in locations that have sufficient available water as determined by the applicable Water Resource Plan and Resource Operations Plan.

7.3.3 Land for potential significant water resource development, such as dams, weirs or agricultural irrigation, is identified and protected from urban development or incompatible uses.

Aligned strategies

7.3.A The water planning process is open, transparent and equitable and ensures water is managed in an ecologically sustainable way whilst achieving the best use of available water supplies.

7.3.B Efficient and cost effective regional water supply infrastructure is provided to maintain or enhance reliability and levels of service while ensuring maintenance of environmental and social values of source streams and aquifers.

7.3.C Climate change considerations and new projections are integrated into:

a) decisions about water infrastructure

b) water-quality management of dams and reservoirs

c) water-quality improvement programs

d) assessment of flood risk in urban and infrastructure planning

7.3.D Water supply sources are diversified to reduce dependence on vulnerable supplies.

7.3.E New water supply infrastructure must be reflected in water resource plans and operated in accordance with the resource operations plan; therefore these plans provide the primary constraints and opportunities for land use development.

Explanatory notes

The *FNQ Draft Regional Water Supply Strategy* was released in September 2007. The strategy identifies where there are potential water supply shortfalls in the long-term and opportunities and constraints for new or augmented supply sources. In particular, climate change creates risks for yield and the reliability of water supplies in the region. Map 15 identifies key water resources in the region.

Water resource plans are either in place or being developed for all catchments in the FNQ area. These plans determine the volume of water available for water users after environmental flows have been provided to ensure protection of water dependant ecosystems.

A water resource plan for the Barron Basin was developed in 2002 and a *Barron Resource Operations Plan* in 2005. These planning documents provide a balance between environmental needs and human consumption in the short term. The operations plan sets out the rules and requirements that guide the day-to-day management of stream flows and water infrastructure to achieve the *Water Resource (Barron) Plan 2002* objectives.

A water resource plan has also been developed for the Mitchell River, which covers part of the former Mareeba Shire. It is anticipated that water resource planning will commence in the Wet Tropics area in 2008–2009.

The resource operations plan sets up a process for granting new water entitlements, and in some areas establishes rules for trading water allocations, which is a mechanism to allow water to move to the highest value use. This promotes efficient use of water as a scarce resource. In addition, a resource operations plan provides enhanced certainty and security for human consumptive water use and for the environment.

Trading rules are set to provide for a water market—a mechanism to allow water to move to the highest value use—which in turn promotes efficient use of a scarce resource. The trading rules ensure that the movement of water occurs within sustainable bounds. The Hinchinbrook Wild River Declaration 2007 includes rules for the allocation and management of water and water related development on Hinchinbrook Island. The Staaten Wild River Declaration 2007 includes rules for the management of water related development.

7.4 Water demand management

A key challenge in planning for future urban growth is ensuring efficient use of our precious water supplies and reducing water consumption through improved management of our demand for water. Numerous strategies are underway to improve water use efficiency in urban and rural areas.

Objective

- Incorporate demand management in planning and building standards to manage consumer behaviour and demand for water.

Land use policy

7.4.1 Demand management principles are adopted in the planning, design and construction of water cycle infrastructure, including water supply sewerage and drainage.

Aligned strategies

7.4.A The sustainable allocation and best use of water is achieved by:

a) facilitating the highest value and best use of water through trading existing water entitlements

b) promoting efficient use of water, for example, by improving demand management and reusing and recycling water.

7.4.B Water use efficiency is promoted by encouraging water efficient technologies and practices.

7.4.C Ensure all urban water providers adopt minimum residential water consumption targets identified when implementing the FNQ regional water supply strategy.

7.4.D Initiatives to improve water efficiency in the rural sector are promoted.

7.4.E Industrial and commercial developments are encouraged to meet best practice approaches in minimising water use and using water efficiently.

7.4.F Best practice water pricing is adopted, based on a structure that reflects the true cost of water and encourages more efficient use.

Explanatory notes

The FNQ regional water supply strategy recommends that urban centres within the strategy area undertake end use analysis and develop and implement demand management programs. The development of residential water consumption targets are part of the implementation of the strategy. The draft strategy applied a target of 10 per cent reduction in per capita water usage over three years to forecasts for all urban centres. The Cairns City Council's Water Demand Management Strategy also contains a number of demand management initiatives.

The timing for additional sources of water could be extended if effective demand management measures are embraced across the region. This relates to how efficiently the community uses and manages its water resources. New infrastructure needs to include demand management principles (including metering and water efficient devices) to reduce consumption. Existing infrastructure also needs to be adequately maintained to minimise water loss. These measures can delay the need for additional water infrastructure.

Following the review of the Local Governing Bodies Capital Works Subsidy Scheme, subsidies for traditional and alternative sources of supply, pressure and leakage management, and measures to reduce water consumption will be linked to their cost effectiveness. The *Water Act 2000* requires water service providers to develop and implement leakage management plans.

Subsidies to promote the widespread take up of water efficient devices, water recycling and use of fit-for-purpose water by business are available through the government programs ecoBiz and Statewide Business Water Efficiency Program. The government is also working to reduce commercial and industrial water use and is developing water consumption targets for high-rise buildings. The government's Water Smart Buildings program promotes water efficient practices in state buildings and across state programs.

Building Codes Queensland has introduced a mandatory sustainable building part in the Queensland Development Code that requires the installation of 3-star rated or AAA rated shower heads, dual flush toilets and pressure-limiting devices in new houses. Mandatory water savings targets applied across the state from 1 July 2007 to applications lodged for construction of new houses.

Queensland's WaterWise program will continue to provide education materials for schools, community groups and the general public on water efficiency. The Home and Garden WaterWise Rebate Scheme provides rebates to householders across the state from July 2006 to June 2009.

To support better water efficiency, the Queensland Government is also:

- implementing the Rural Water Use Efficiency Program to assist farmers in introducing water efficiency practices to their farms
- preparing guidelines to assist local governments in providing water consumption information on consumer water bills
- requiring water service providers to issue water use information to tenants of residential rental properties to enable greater water consumption awareness
- developing standards and guidelines for usage based residential water tariffs and pricing recycled water
- developing guidelines for the formulation of outdoor water conservation plans which will be required of water service providers
- undertaking the Queensland Government's responsibilities for the ongoing implementation of and expanding the Water Efficiency Labelling Standards Scheme for domestic appliances
- investigating how local government can equitably share the cost of meeting water consumption targets amongst water consumers.

7.5 Water supply

More efficient management of existing water supplies and identification of new supplies are required to provide for the projected increase in population by 2031.

The FNQ regional water supply strategy identifies the government's investment priorities for additional water supplies, including investigating new dams and weirs, and supporting water recycling and alternative water sources.

The strategy recommends an appropriate balance of water supplies to meet regional demands, taking into account likely yields, costs of supply and supply risks for each source. One of the constraints in providing for future water supply is the high environmental value of much of the region. Substantial areas of water catchment are protected by national park tenure and World Heritage listing, and the impact of water storage or water extraction on these values needs to be carefully considered.

Opportunities to maximise the use of existing water supplies are being fully explored.

Objective

- Assured supplies of water are provided to meet the needs of growth and development in the region.

Land use policies

7.5.1 Future catchment and storage areas as indicated in the FNQ regional water supply strategy are identified and protected through land use planning.

7.5.2 Opportunities for water harvesting and storage on site are supported in new urban development.

Aligned strategies

7.5.A The impact of drought, climate change and other supply risks are minimised by diversifying water supply sources.

7.5.B New and upgraded existing dams and weirs are developed as part of an integrated water supply system where appropriate.

7.5.C Recycled water and stormwater are used as alternatives to potable water where appropriate and on a fit-for-purpose basis.

7.5.D Greywater reuse is provided for in sewered areas, having regard to the protection of water quality and public health.

7.5.E Desalination is used as an alternative water supply source where appropriate (for example, where it is cost effective and in the public interest).

7.5.F Groundwater aquifers are managed on a sustainable and controlled basis for water supply and storage.

Explanatory notes

The Queensland Government is promoting the utilisation of existing water supplies more efficiently, including the use of recycled water (including dual reticulation) in residential development and public spaces. The aim is to balance water demands and supplies across the region.

The FNQ regional water supply strategy seeks to ensure sustainable allocation and best use of water is reached by adopting a hierarchy of three key principles:

- facilitating the highest value and best use of water through trading of existing water entitlements
- promoting efficient use of water (for example, by improving demand management and by reusing and recycling water)
- developing additional least cost water supply sources where demands cannot be met through the above measures, and where unallocated water is available.

There is potential to develop additional and alternative water sources in the region through the construction of new dams, raised dams, stormwater harvesting (including rainwater tanks), wastewater reuse, reuse of irrigation runoff or desalination. Establishing new dams is a very expensive and lengthy process, and is not without environmental and social costs. There are only a few suitable locations in FNQ for new dams. These potential sources, as indicated in table 7 and map 15, must be protected from inappropriate development. Map 16 shows existing developed water resources in FNQ.

The government is utilising existing water supplies more efficiently and promoting the use of recycled water (including dual reticulation) in residential development and public spaces.

Recycled water is already in use in the region by industry, agriculture and for irrigating open space areas. Expanding the use of wastewater may reduce the need for potable water, potentially delaying infrastructure upgrades. However, new infrastructure may be required for this option.

Stage one of the sustainable housing policies made installation of rainwater tanks in new houses and apartments mandatory in accordance with the Queensland Development Code. Stage two of this policy will review further measures and consider extending this mandate to cover renovations, apartments and other accommodation.

The *Plumbing and Drainage Act 2002* and the Queensland Plumbing and Wastewater Code complements the government's commitment to water savings through the implementation of a wide range of measures including sub-meters, expanded use of treated greywater and blackwater re-use trials. Desalination technology is improving and may become economically and ecologically viable in the future.

The *Water Act 2000* requires water service providers to develop drought management plans to ensure communities are prepared for periods of drought.

Regional water service providers need to gather common and consistent information about water consumption and wastewater management as part of their regular reporting regimes.

Table 7: New and contingent supplies for further investigation

New and contingent water supply options—Far North Queensland	
North Coast	Daintree River intake Wonga bore field Whyanbeel Creek intake High Falls Creek intake Mossman River intakes Mossman River aquifer South Mossman River intake Mowbray River aquifer
Cairns area	Northern beaches aquifer Barron River—Lake Placid extraction Mulgrave River aquifer Mulgrave River—run of river intakes
Tablelands	Raising Tinaroo Falls Dam Off stream storage for Yungaburra Atherton Basalt aquifer—North Johnstone River Off stream storage from North Johnstone River Off stream storage for Ravenshoe supplies Accessing supplemented water from Tinaroo Falls dam Wild River supply options Raising Collins Weir Walsh River supply options Algoma Weir Hodgkinson formation Lake Mitchell
Non-site specific options	Rainwater tanks Water recycling Greywater reuse Seawater desalination Purified recycled water Surface water harvesting through privately owned dams

Source: Far North Queensland draft Regional Water Supply Strategy

7.6 Rural water

Rural communities need reliable and safe water supplies to meet domestic needs and support a diversity of agricultural pursuits. Some rural communities are concerned that urban growth will create competition for water between rural and urban users.

Since 1999 water efficiency gains have been achieved through stage three of the rural water use efficiency initiative. Targets by industry groups vary from a modest commitment for a significant percentage of growers participating in best practice management programs through to a 15 per cent reduction in water usage.

It is anticipated that water resource planning will commence in the wet tropics area in 2008–2009. As stated earlier, the Barron Resource Operations Plan was finalised in 2005. Such plans will provide a sustainable framework for managing, taking and allocating water, including rural water use.

The FNQ regional water supply strategy includes a component to address rural water issues. These issues include the efficiency of water use, water management, on-farm management practices for recycled water and additional supplies of water for rural use.

Irrigation is primarily concentrated in the Barron River catchment, particularly in the Mareeba Dimbulah Water Supply Scheme. Alternative economic sources of water for rural use could link to irrigation farming expansion in the future. The water supply strategy identifies several thousand hectares of land suitable for irrigated agriculture. Existing and future water resources, infrastructure and irrigation areas need to be protected from encroachment.

Objective

- Ensure rural water needs are met in an efficient and sustainable way.

Land use policy

7.6.1 The security and efficiency of the water infrastructure network for existing and future primary production areas is maintained and protected from incompatible land uses.

Aligned strategies

7.6.A Water resource management and allocation decisions incorporate consideration of rural water use requirements.

7.6.B The efficiency of rural water use is improved, particularly irrigation systems.

7.6.C Planning for the efficient use of rural water accounts for the likely impacts of climate change.

7.6.D Alternative suitable sources of water for rural use are investigated and utilised where appropriate.

8. Transport

Desired regional outcome

Communities are connected through an integrated transport system that promotes tourism, public transport use, walking and cycling, provides safe, efficient and effective movement of goods and people, and facilitates access to places and services.

The quality of life for people living in FNQ relies on a transport system to connect the wider community with goods, services, employment and other people. Efficient and effective transport is also essential for future economic development. The vitality of the region relies on connections with other regions, both domestic and international.

The Cairns International Airport provides international and domestic air services for the region and is integral to the tourism industry. It is Australia's busiest regional airport and the fifth busiest overall. Major seaport facilities at Cairns and Mourilyan Harbour also provide opportunities for freight and tourism. Cairns is home to Queensland's only naval base, HMAS Cairns.

Freight and passenger rail services operate daily between Cairns and Brisbane. Rail facilities also exist between Cairns and the Tablelands and currently carry freight and tourists. The region also has an extensive network of cane rail tracks throughout the coastal plain servicing sugar mills.

The region has an established arterial road system with external linkages to Cape York, the Gulf of Carpentaria and southern areas of the state and country. New roads, better road networks, and improvements to existing roads are being planned to ensure effective regional connections.

Further development of the freight system is important to support economic development, particularly mining and agriculture. Over time, an effective, integrated network of roads, railways, sea ports and airports will support the competitiveness of industry and business and meet community needs.

There are challenges facing transport. Increased vehicle travel means more emissions, congestion and road accidents. It is also a good indicator of demand for road maintenance and upgrades. Modelling indicates that without land use changes, and supporting policy intervention, FNQ's total vehicle kilometres travelled is projected to increase significantly beyond the corresponding population increase of approximately 73 per cent. A compact urban form, greater self-containment, a network of transit oriented communities and aligned policy initiatives can significantly reduce demands on the transport network.

Greenhouse gas emissions, air and noise pollution, accidents, and congestion must be managed effectively to assure future ecological sustainability for FNQ. Rising fuel prices and climate change also present threats to meeting transport and economic needs. Alternative transport and fuel sources will become increasingly important.

It is important to improve the viability and attractiveness of more sustainable transport modes in Far North Queensland. The Queensland Government has introduced qconnect in Cairns and Innisfail to improve public transport services. A network of cane rail and other corridors in Cairns could be used for transit in the future. Walking and cycling networks will provide greater travel choices as well as significant health and environmental benefits.

All levels of government will continue to have a role in managing and developing the FNQ transport system.

8.1 Integrated transport and land use planning

While an important function of the regional plan is to define urban footprint areas, it should also influence the pattern of development within and outside these areas to ensure transport efficient land use patterns are produced. This outcome will significantly reduce the overall transport task and encourage more healthy and environmentally friendly modes of transport such as walking, cycling and public transport. These outcomes reduce the community's expenditure on transport infrastructure, transport services, vehicle use and fuel use, and it also reduces greenhouse emissions.

Objective

- Achieve an efficient, integrated transport system that meets community needs, supports a more compact pattern of urban development, promotes the self-containment of travel in subregions within FNQ and maintains efficient transport connections within the region and with other regions.

Land use policies

8.1.1 Land use and transport planning are integrated to support efficient land use, efficient movement of people and goods, and industry competitiveness and growth.

8.1.2 Towns and cities are planned to be relatively self contained with employment and community services, to reduce the need for residents to travel to other towns or cities for jobs and services.

8.1.3 The urban fabric of towns and cities is designed to locate residential areas as close as possible to activity centres, including economic, retail, educational, recreational and community centres.

8.1.4 Subdivisions are planned so the road and pathway network caters for walking and cycling in all directions, and efficient public transport coverage, where available, is facilitated.

8.1.5 The staged provision of transport infrastructure occurs in sequence with the preferred pattern of development.

8.1.6 Appropriate forms of transit oriented communities are established in public transport nodes along transit corridors (as indicated on map 17) in accordance with tables 8 and 9 and in sequence with state infrastructure provision.

8.1.7 Intermodal connectivity between rail, road, air or sea transport is enhanced through freight and passenger terminals.

8.1.8 Industries and freight dependent development are located in proximity to access points to regional transport corridors that facilitate access to markets and labour force.

8.1.9 Complementary industries are co-located to minimise transport requirements and increase resilience to potential impacts of oil vulnerability.

8.1.10 Transport planning considers the risk of major catastrophic events, such as cyclones or floods, and transport infrastructure is located and designed to avoid or minimise the impact of such events (see section 4.7).

8.1.11 Opportunities are enhanced for travel by public transport, cycling and walking at and to major destinations including employment and education locations, health, welfare and support services, shopping centres, and recreational and social venues.

8.1.12 Appropriate end-of-trip facilities, including bicycle parking, showers and change rooms, are incorporated into developments that are likely to attract or generate significant numbers of bicycle trips, such as business centres, workplaces, community facilities, educational facilities and retail developments.

Aligned strategies

8.1.A The community's access to employment, education and services is improved while transport emissions are reduced.

8.1.B Planning for public transport is integrated with planning for other modes of transport.

8.1.C Cyclist and pedestrian requirements are integrated into future planning and infrastructure.

8.1.D Climate change considerations are included in programs to improve the appeal and amenity of public transport.

8.1.E Appropriate public transport coverage is provided, and priority allocated on the road network where warranted.

Targets

Transport policies in the regional plan and other strategies will be implemented in pursuit of the desired regional outcomes and the following specific targets that achieve at least:

- 10 per cent of all Cairns Southern Corridor trips by public transport by 2016
- 20 per cent of all Cairns Southern Corridor peak hour trips by public transport by 2036
- 40 per cent job self-containment in Cairns Southern Corridor by 2036
- 50 per cent increase in person trips by cycling in FNQ by 2011
- 100 per cent increase in person trips by cycling in FNQ by 2021.

Explanatory notes

The form of cities and towns and the relationships between land uses and transport networks have a fundamental influence on:

- the number of trips people need to make
- the distances people need to travel
- the proportion of trips that can be made by public transport
- the cost-effectiveness of, and level of service provided by, public transport
- the proportion of trips that can be made by walking or cycling
- safety and amenity
- road capacity and efficiency
- location of transport corridors.

Integrated land use and transport planning facilitates access to facilities, services, goods, and other infrastructure and promotes economic and social development across the region.

Intermodal transportation involves the use of more than one mode of transport to transfer goods or people efficiently. Transport terminals facilitate transfer between modes as well as providing storage facilities. Clustering of like industries and storage facilities in strategic locations, particularly key freight transport nodes, maximises transport efficiencies.

It is important to minimise the impacts of catastrophic events such as cyclones and floods, through careful location, design and construction of transport facilities.

A range of travel choices reduce the need to travel by car, create shorter journeys, provide safer and easier access to jobs, schools and services, support more efficient use of land and existing infrastructure and maintain the environmental benefits of compact development.

Access to a public transport system that conveniently connects people with goods, services, places and other people is important in large urban centres like Cairns and Innisfail.

Transit oriented communities

Transit oriented communities are mixed use residential and employment areas designed to maximise the efficient use of land with higher self-containment (need to define) and better access to public transport. A transit oriented community has a walker and cycle friendly component with a public transport stop or station surrounded by relatively higher density residential development, employment or a range of mixed uses.

Benefits of a transit oriented community

Transit oriented communities provide benefits at both local and regional levels. Regional benefits can include:

- reduced congestion pressures through:
  - shorter more localised trips because of greater self-containment
  - more trips by walking and cycling
  - increased public transport usage
- air quality benefits due to a reduced reliance on cars
- better transport efficiency and reduced transport costs for people
- provision of a variety of housing options
- shorter easier trips for work and recreation, saving time spent on travelling
- more equitable access to community facilities and employment protection of open space and scenic amenity through the containment of urban sprawl
- more efficient use of land and infrastructure.

Local benefits can include:

- an increased sense of community
- safer, more vibrant urban centres
- improved access to work, shopping and recreational facilities
- an increased variety of services and facilities located closer to where people live and work
- reduced reliance on private vehicles
- higher quality pedestrian and cycling environment
- improved connectivity with neighbouring precincts.

Establishment of transit oriented communities

Establishment of transit oriented communities in Cairns is an important element in the preferred pattern of development for FNQ. Transit oriented communities would incorporate appropriate higher densities but would be complemented by lower densities in a diverse housing mix. Table 8 outlines high level principles for transit oriented communities in Cairns. Table 9 outlines a typology of transit oriented communities in Cairns. Future transit oriented communities should be planned in accordance with tables 8 and 9.

This will ultimately involve master planning for individual localities (see section 4.3). Master planning activities would be staged over time and be based on priorities identified by state and local government. Master planning should be undertaken prior to transit oriented development and initiated in sequence with planned state and local infrastructure delivery.

Potential transit oriented communities in Cairns are the public transport nodes of Palm Cove, Smithfield, Redlynch, Cairns central business district, Earlville, Edmonton, and Gordonvale as indicated on map 17.

Further investigation is required to confirm the preferred locations and types of transit opportunities in the future. A Cairns Transit Network project is currently investigating future corridors and nodes for a bus based public transport system.

Transit oriented communities become viable when oriented around a public transport station on a bus rapid transit system with a high frequency of services. Master planning for transit oriented communities should be coordinated with planning for a rapid public transit system. Public transport nodes in Cairns have the greatest potential for facilitating transit oriented communities as these centres of activity already serve as interchanges or termini for existing public transport services. Therefore it is important that development occurring in public transport nodes does not preclude future transit oriented communities.

Interim development in a public transport node (see map 17) should be configured and designed to allow the future development of a transit oriented community. For example, large land parcels should be protected from subdivision and smaller land parcels consolidated wherever possible. Robust infrastructure and flexible development in public transport nodes is needed to ensure transit oriented communities are established in the future.

Transit oriented communities will vary in size depending on local constraints and opportunities. The typology in table 9 outlines a range of transit oriented community types to reflect differing scenarios. Over time specific types will be assigned to selected localities, based on transit node and frequency, connectivity and accessibility, role in a broader network, aspirations for the future, amenity, infrastructure and service capacity, land availability and market interest.

Catchment sizes will relate to pedestrian and cyclist accessibility, generally within a comfortable 10 minute walk or ride of the transit station, or 400–800 metres and up to 1.2 kilometres in key nodes. Walking distances can be affected by topography, climate, season, intervening roads and other physical features. Appropriate layout and design of shared paths can increase catchment size.

Appropriate uses will vary in each community and could include residential, commercial, retail, recreational and community facilities. Transit oriented communities should promote transit supportive land uses to reduce dependence on private car travel. Car parking provision in activity centres and transit communities should be reduced over time. This reflects proximity to high frequency transit services and access to goods and services in mixed use centres.

Principles and typology

Transit oriented community principles (see table 8) could also apply to mixed use developments with lower levels of public transport but in walking distance of major destinations and lower-order centres.

New public transport facilities should be located in areas with mixed use development potential (both greenfield and infill) and be designed to allow for direct pedestrian and cycle connections to adjacent communities. Tables 8 and 9 describe the principles and character of transit oriented communities in more detail.

Table 8: Transit oriented communities—principles for Cairns City

Location	Principle
Level of infrastructure and services	Development is focused on nodes or corridors with higher frequency transit services and where infrastructure capacity exists or is viable to provide.
Level of development	Development occurs at a higher scale, appropriate to the locality and the local government planning scheme intent.
New development	Transit oriented community principles are applied in new developments where transit stations exist or are proposed.
Land Use	
Type	Transit oriented communities are dominated by transit supportive land uses.
Density	Incorporate higher densities appropriate to the location of the proposed transit oriented community.
Mix	Transit oriented communities integrate an appropriate mix of use and services (according to the centre) as indicated in Table 9—Transit oriented community—typology for Cairns.
Activity	Transit oriented communities contribute to greater activity in the location to provide a sense of vitality and security.
Employment	Transit oriented communities provide a mix of uses and services that contributes to local employment.
Housing	Transit oriented communities provide a range of housing options to meet the diverse needs of the community.
Design	
Adaptability	The built form allows adaptation or redevelopment over time to adjust to changing communities.
Built form	Transit oriented communities incorporate best practice tropical design to promote character, amenity and maximise energy and water efficiency.
Open space	Transit oriented communities create a sense of place and provides a high quality public realm to promote social cohesion, interaction and safety.
Integration	Transit oriented communities are designed to seamlessly integrate the transit station with the surrounding community.
Parking	Car parking is located, designed and provided in a way that supports walking, cycling and public transport accessibility and promotes mode shares.
Transport	
Mode share	Transit oriented communities contribute towards targets for cycling and public transport mode shares and encourage a higher mode share for walking.
Transport efficiency	Transit oriented communities facilitate connections between modes and maximises public transport efficiency.

Table 9: Transit oriented communities—typology for Cairns City

TOC Type	Land use mix	Connectivity	Residential density	
			Core (400-800 m from transit station)	Fringe (800-1200 m from transit station)
Type 1—City	A mixture of the following: • high density multi–unit dwelling • primary office and service centre • centre for entertainment for example, theatres, cinemas, civic theatres, convention centre, restaurants, nightclubs, cafes, bars, regional gallery • primary employment centre • higher order retail	• hub of transit system, including rapid transit and local bus • access to long distance bus and rail and ferry • strong pedestrian and cycle connectivity	150 dwellings per hectare	100 dwellings per hectare
Type 2—Urban	A mixture of the following: • combination of high density multi-unit, medium density multi-unit, town houses, shop top living • alternative office centre • secondary service centre • minor entertainment for example, cinema, restaurants, bars, cafes • strong employment centre • retail focus	• linked to principal and major regional activity centres by rapid transit • local bus services • strong pedestrian and cycle connectivity	100 dwellings per hectare	70 dwellings per hectare at fringe
Type 3—Village	A mixture of the following: • combination of medium density multi-unit, town houses, shop top living • lower order retail • small business and commercial • higher density residential in surrounding areas and even on site.	• linked to principal and major regional activity centres by rapid transit • local bus services • strong pedestrian and cycle connectivity	70 dwellings per hectare;	40 dwellings per hectare
Type 4—Neighbourhood	A mixture of the following: • medium density multi-unit housing around station • town houses • dual occupancy • detached dwellings on compact lots (villas and cottages) • minor retail/conveniences • childcare • home businesses	• linked to rapid transit by local bus services • access to principal and major regional activity centres by rapid transit	40 dwellings per hectare	30 dwellings per hectare
Type 5—Specialist activity centre	One or more of the following: • medium-density multi-unit housing around station • town houses • institutional housing • education • hospital • sport & recreation • related minor uses (convenience shop, cafes, small office) • tourist attractions	• linked to principal and major regional activity centres by rapid transit • local bus services • strong pedestrian and cycle connectivity	Not specified	Not specified

8.2 Transport networks

The layout and design of new neighbourhoods and suburbs have a significant impact on future travel demands and behaviours. Most new urban development occurs on relatively small land parcels. Incremental and fragmented development makes it difficult to build neighbourhoods that support pedestrians, cyclists, public transport and efficient transport networks. The design of a well connected street network can save travel time and cost and reduce greenhouse gas emissions through reduced vehicle travel.

It is important to have a transport network across the region that provides safe, efficient and effective transport for people and goods. It must be environmentally sustainable and offer good access and amenity in order to support industry competitiveness and growth and liveable communities.

Objective

- Highly connected transport networks provide strong links between activity centres and surrounding areas, to enable good accessibility, route and mode choice.

Land use policies

8.2.1 Integrated network planning, including a functional road hierarchy, protects and enhances regional and local connectivity, efficiency and safety.

8.2.2 Streets are carefully planned to provide facilities that equitably address the needs of pedestrians, cyclists, public transport and vehicles.

8.2.3 The street network has high street connectivity, both within the development and to the surrounding area.

8.2.4 A managed network of streets clearly distinguishes between arterial routes and local streets, based on function, legibility, convenience, traffic volume, vehicle speed, public safety and amenity.

8.2.5 A transport network is established which provides convenient linkages to activity centres, schools, public transport stops and stations, and other destinations within or adjoining the development.

8.2.6 Road and street networks are configured to allow efficient bus service that can be conveniently and safely accessed by foot from most dwellings.

8.2.7 A safe, convenient and legible cycle network, including on-road and off-road routes, is provided to meet the needs of all cyclists and people using mobility scooters.

8.2.8 A safe, convenient and legible network for pedestrians is provided, principally along street networks and adjacent to watercourses, linking residences and providing access to points of attraction within and beyond developments.

8.2.9 The Principal Cycle Network for FNQ (as indicated in map 18) is progressively implemented through cooperation between local government, state agencies and the private sector.

Explanatory notes

Transport networks include private motor vehicle, public passenger transport, walking and cycling networks. Integrated network planning, including a functional road hierarchy:

- contributes to overall transport efficiency
- provides adequate levels of safety
- facilitates community access to the transport network.

It is important that a network plan is reflected in transport plans, planning schemes, infrastructure plans, structure plans and master plans. When applied in greenfield, infill and redevelopment sites, network plans should:

- have a highly-interconnected street network that clearly distinguishes between elements of the various transport network hierarchies
- establish good internal and external access for community
- encourage walking and cycling and supports public transport
- minimise the impact of through traffic or mitigates traffic impacts where through traffic is necessary
- improve use of land and the efficient provision of public transport infrastructure and services to maximise community benefit.

Contemporary urban design practices for new urban communities are outlined in the Queensland Government's Shaping Up guideline, the *Queensland Residential Design Guidelines and Commonwealth Government's Australian Model Code for Residential Development (AMCORD) Guidelines* (Commonwealth of Australia, 1995). The Institute of Public Works Engineering Australia's Queensland Streets standard for streetworks design is currently being revised.

Road networks in urban areas should be designed in accordance with the Far North Queensland Regional Organisation of Councils (FNQROC) Development Manual so that the required transport function of each road link in the network is achieved. That is the safety, speed, capacity, amenity, public transport coverage and level of access permitted on roads and streets.

Development should be designed so that Queensland Transport can cost-efficiently deliver the minimum standard of public transport. Generally a target of 90 per cent of dwellings within 400 metres of a planned or existing bus stop is considered appropriate.

Travel patterns and behaviours are influenced by transport network design on two levels:

- Regional—travel behaviour is influenced by the connectivity between towns and cities.
- Local—travel behaviour is influenced by the connectivity of local street networks and the provision of safe and direct pedestrian and cycle and public transport routes within neighbourhoods.

The street network should be highly interconnected to help limit travel distances and to promote walking, cycling, public transport usage and a strong sense of community. This creates a responsive network where motorised traffic volumes and speeds are managed.

Complete streets which incorporate facilities for cars, bicycles, pedestrians and public transport, are designed and operated to enable safe access for all users. Pedestrians, cyclists, motorists and public transport riders of all ages and abilities are able to safely move along and across a complete street.

Walking and cycling should be safe, convenient and attractive transport modes, providing a genuine, sustainable alternative to private cars. These activities are also enjoyed as recreational activities in their own right. There are health benefits where neighbourhoods are designed to encourage people to walk and cycle.

The *Queensland Cycle Strategy* (Queensland Transport, 2003) set a target for areas outside SEQ to increase cycling 50 per cent by 2011 and 100 per cent by 2021. To achieve this target, FNQ must adopt a regional approach to encouraging cycling by:

- linking cycle routes across local government boundaries to provide a safe, interconnected network
- supporting compact urban communities and locating key services near residential areas
- providing high quality end-of-trip facilities such as bike racks, bike lockers, showers and changing rooms in regional activity centres
- ensuring public roads are planned, designed and operated to optimise cycle access and safety.

The Principal Cycle Network for FNQ identifies key links between and in regional activity centres. The network will be used to plan and prioritise state and local government and private sector investment in cycling. The plan recognises two types of routes:

1) Principal cycle routes—the most important routes for cycling in the region, serving a variety of shorter trips (less than 20 kilometres) for work, school, shopping, recreation and tourism.
2) Iconic recreation routes—two major spines to enable long-distance cycle touring along the coast and highlands of FNQ.

For more information on the Cairns Transit Network and the FNQ Principal Cycle Network contact Queensland Transport.

8.3 Transport infrastructure

Identifying and protecting transport infrastructure and corridors is critical to sustaining current transport operations and meeting future transport needs. It is important that potential conflicts between key transport infrastructure and urban development are mitigated so the community can continue to enjoy the transport benefits of this infrastructure with manageable impacts on adjacent land uses.

Objective

- Affordable and efficient air, sea, rail and road transport infrastructure supports a vibrant economy and meets community and tourist needs.

Land use policies

8.3.1 The strategic freight network in FNQ, as indicated on map 19 is protected from encroachment from urban activities and incompatible land uses.

8.3.2 Regionally significant corridors for future bypasses, as indicated on map 19, are protected from encroachment from urban activities.

8.3.3 Opportunities for rapid transit are protected, including the preservation of disused cane rail corridors for future needs, as indicated on map 17.

8.3.4 High order road corridors are to be appropriately buffered from new development to mitigate road traffic noise and visual impacts.

8.3.5 Adequate measures are adopted to preserve amenity for noise sensitive land uses in transit oriented communities.

8.3.6 Compatible land uses, such as industry, commercial, retail and other employment activities are located near major transport corridors.

8.3.7 Current and future transport infrastructure needs are appropriately provided for as part of any development adjacent to major transport corridors.

8.3.8 Cairns and Mourilyan sea ports and Cairns Airport and Mareeba Aerodrome, and their access roads and operations, are protected from urban activities that may impact on current or future operations, except where permitted in land use plans for strategic port land.

8.3.9 Disused rail corridors and ancillary infrastructure are preserved where feasible, to meet current and future demands for alternative transport or movement of freight.

8.3.10 The concurrent use of rail corridors for non-rail transport and communication purposes is promoted, consistent with corridor lease terms and without compromising safety and rail operations.

Aligned strategies

8.3.A Air transport is facilitated to meet basic access and regional development needs in rural and remote communities.

8.3.B Transport infrastructure facilitates:

- safer roads to support safer communities
- efficient and effective transport to support industry competitiveness and growth
- fair access and amenity to support liveable communities
- environmental management to support environmental conservation
- a mode share consistent with sustainable outcomes.

8.3.C Shoulders on the higher order road network are progressively sealed to improve cyclist and general traffic safety.

8.3.D Overtaking lanes are progressively provided on roads with higher vehicle volumes.

Explanatory notes

A safe and efficient transport network will be critical for the prosperity, livability and development of the region over the next 20 years. Road transport is an integral part of the network for moving people and goods. The efficiency of this network is critical for industry competitiveness and growth and quality of life. FNQ also has a significant drive tourism industry which relies on road transport.

The Department of Main Roads (DMR) has developed a network of priority freight routes and is working towards improvements that will allow greater access for freight efficient vehicles. Protecting these routes from encroachments and incompatible adjacent land uses is important for future costs, transport efficiencies and local amenity.

Large Freight Efficient Vehicles (FEVs) provide considerable savings in cost and labour which are becoming increasingly important in light of rising fuel costs and labour shortages. Vehicle combinations larger than semi-trailers do not have as of right access to public roads because of limited ability to negotiate corners and safety for other users. They range in length from 21m B-Double to 53.5m road trains.

These vehicles are restricted in relation to which roads that they can use. The Kuranda Range section of the Kennedy Highway, for example, is only suitable for semi-trailers. In the short term efforts will be made to improve the safety and efficiency of the existing routes. On the Kuranda Range Road section for example various measures are being rolled out with over $4 million allocated for road improvements in the 2008-09 and 2009-10 financial years. The corridor identified for a four lane upgrade is being preserved and investigations are continuing for ways to improve the link and plan for the longer term.

New transport infrastructure can have significant land requirements. Potential

land acquisition has significant economic and social impacts. Therefore it is important to identify and protect current and future corridors. Opportunities can be lost or compromised as land is developed. New land uses can encroach on major transport corridors such as main roads, busways and railway. Where development occurs adjacent to a major transport corridor, appropriate provision needs to be made for current and future transport infrastructure needs.

Incompatible land uses with the freight network include those uses that either have an impact on the operation of a road, railway or port or are impacted by the operation of a transport corridor to the extent that it should be avoided. Noise, visual amenity, safety, efficiency, sustainability and access are factors that need to be considered.

There are also amenity considerations for sensitive land uses near transport infrastructure. The preferred option is to avoid placing noise and visually sensitive land uses near transport corridors where practicable. If development is unavoidable, then design and construction should include appropriate development layout and building orientation and adequate buffers and insulation to mitigate noise and visual impacts for the receiving environment. Transport infrastructure providers also have a role in mitigating noise and visual impacts for the receiving environment.

The *Road Traffic Noise Management: Code of Practice* (Department of Main Roads, 2007) provides guidance and instruction for the assessment, design and management of the impact of road noise.

Utilising public transport options will take considerable pressure off congested roads which might otherwise not be able to cope, even with upgrades. The majority of movement in FNQ is still expected to be by road, even with a successful public transport system. Appropriate planning for managed growth in road traffic is therefore still needed.

The Department of Main Roads *Queensland AusLink Network Forward Strategy 2009-10 to 2013-14* outlines desired improvements for federally funded AusLink network roads. The *Road Implementation Program* outlines short term road improvements for other state controlled roads and roads of local and regional significance.

The railways that connect Cairns to the south and inland areas are important for freight and passenger travel and tourism. For rail, there are opportunities and challenges in improving the share of the freight task, particularly for heavy long distance loads. There are opportunities for some freight movement by rail from the Tablelands.

The *Rail Network Strategy for Queensland* (Queensland Transport, 2001) identifies specific strategies relating to policy and planning for the future of Queensland's rail infrastructure and rail corridors.

Rail corridors present a unique opportunity for transport and communication services. However, concurrent uses need to be consistent with corridor lease terms and must not compromise safety and rail operations. It is possible to utilise disused rail corridors for recreational purposes, including walking, cycling or horse riding trails. The future use of disused railway lines on the Atherton Tablelands is the subject of an Atherton Tablelands rail trails feasibility study.

Disused cane rail corridors may ultimately provide opportunities for future public transport systems to service transit oriented communities and growing urban areas in Cairns.

State Planning Policy 1/02 *Development in the Vicinity of certain airports and aviation facilities* (Queensland Transport, 2002a) sets out the state's interest concerning development in the vicinity of airports and aviation facilities considered essential for the state's transport infrastructure. The policy applies in the vicinity of designated airports and aviation facilities but does apply to those facilities themselves. State Planning Policy 1/02 applies to Cairns and Mareeba airports in FNQ.

The *Cairns Port Authority Land Use Plan* (CPA, 2006) and *Port of Mourilyan Land Use Strategy* (Ports Corporation of Queensland, 2003) are statutory documents, similar to a local council planning schemes, to control land uses on strategic port land. The *Port of Mourilyan Land Use Strategy 2003* is intended to be used in conjunction with the Port of Mourilyan's Environmental Management Plan. The *Coastal Protection and Management Act 1995* includes buffers for coastal dependent state significant land uses such as sea ports.

PART F—Implementation, monitoring and review

The regional plan establishes a basis for better planning, management and development in the FNQ region. The value of the regional plan will be largely determined by how successfully its outcomes are supported and implemented by 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, infrastructure and services.

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 cycle provides a feedback loop to allow adaptive management as a response to changing circumstances and new information. If regional plans are to achieve their goals and objectives, the planning process (figure 11) must be designed to be cyclical and should not begin or end at a distinct 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 (Low Choy *et al.* 2002).

Figure 11: The adaptive management planning process

Statutory processes

The FNQ Regional Plan is a statutory instrument under the *Statutory Instrument Act 1992*. Its effects are established under section 2.5A of *IPA*. Relevant provisions of the legislation include:

- establishing a Regional Coordination Committee to advise the regional planning 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 plan, policy or code that may affect a matter covered by the regional plan
- ensuring development assessment processes—including referral agency obligations for development applications—address matters covered in the regional plan
- enabling regulatory provisions to be prepared to implement aspects of the regional plan
- allowing the regional planning Minister to exercise call in and direction powers
- establishing processes for amending the regional plan.

Linking with planning schemes

In the making of a planning scheme or an amendment, the local government must prepare a statement of proposals under Schedule 1 of IPA. One requirement is that local government in this statement must indicate how it anticipates the planning scheme will reflect the regional plan.

Desired regional outcomes

The FNQ Regional Plan establishes a range of desired regional outcomes (DRO), objectives, policies and aligned strategies to guide the development of FNQ.

Each DRO is a set of goals, aspirations and requirements for the future of the FNQ region. For each DRO, a set of objectives is set out that are to be followed to achieve the outcome. Local governments and agencies should take these into account when formulating their own policies, as they are integral to the correct functioning of the region.

The objectives are followed by specific policy and aligned strategy statements. Policies set out what must be done if the objectives are to have any effect. The policies are specific in nature and should direct local government and agencies to the steps to be followed. The aligned strategies are those that will assist in achieving the DRO's, but are delivered through a range of mechanisms outside IPA.

State agencies are required to implement the regional plan and adopt its objectives and policies in their own planning. Local governments are required to amend planning schemes and adopt other policies to align with the regional plan.

Other groups, including NRM bodies, water management agencies and industry bodies, are also encouraged to align their planning and programs with the objectives, policies and aligned strategies to ensure a coordinated effort across the region.

An action plan will set out the actions that need to be undertaken over the life of the regional plan to implement the objectives and achieve the desired regional outcome. Actions may be undertaken by state and local government or non-government bodies.

Infrastructure planning

The Far North Queensland Infrastructure Plan supports implementation of the FNQ Regional Plan. Identification of the preferred pattern of development for the region provides the basis for planning for infrastructure to support predicted urban growth over the next 20 years. The Far North Queensland Infrastructure Plan is the first such plan to be prepared for Far North Queensland. The infrastructure plan will be updated regularly. It identifies regional infrastructure priorities required to support the regional plan and reports on infrastructure projects. To ensure budget proposals align, state agencies will prepare their infrastructure and services plans in line with the regional plan.

Regional infrastructure forums involving state agencies and local government will ensure coordination between state and local government priorities and budgets. State agencies will consult with local government to coordinate infrastructure in various sectors, including transport and water.

The use of the master plan process under IPA also allows State Infrastructure Agreements to be used so that government can offset some of the infrastructure costs generated by a development in an urban growth area.

Implementation

Implementation requires cooperation and involvement of all levels of government, non-government, organisations, the private sector and the community.

The implementation will include:

- incorporating regional planning outcomes into capital works and service programs and policy making processes of state and local government
- incorporating regional planning outcomes into local government policies, development assessment processes and local government planning schemes.

In order 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 regional 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 a Regional Coordination Committee 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 detailed action plans, work programs, budget estimates and resource requirements. This work will be coordinated by nominated government agencies. Longer-term planning for infrastructure will also be guided by the policies of the regional plan.

Roles and responsibilities

The Department of Infrastructure and Planning works collaboratively with other Queensland Government agencies, local government and stakeholders to facilitate and coordinate the implementation of the regional plan. The department is also a concurrence agency of parts of the regulatory provisions.

The Regional Coordination Committee advises the Queensland Government, through the regional planning Minister, on the development and implementation of the regional plan.

The committee can consider amendments to the regional plan documents and make recommendations to the regional planning Minister, provided the principles, concepts and strategies underlying the plan are not fundamentally altered.

The Regional Planning Implementation Group consists of representatives from state and local government, as well as non-government organisations that have responsibility for implementation of major components of the regional plan. It will assist in monitoring policies and programs to implement the regional plan. This group reports to the RCC and regional planning Minister through the Department of Infrastructure and Planning.

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 will not end with the completion of the regional plan. There is a clear need to establish mechanisms to:

- develop and monitor key environmental, social and economic indicators
- monitor progress and changes in the region
- identify new and emerging issues
- monitor implementation of the outcomes and strategies of the regional plan
- periodically review the status of the region and to 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 subregional and local levels. 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.

The responsibility for establishing and maintaining the regional plan monitoring program will rest with the Regional Planning Implementation Group.

Review process

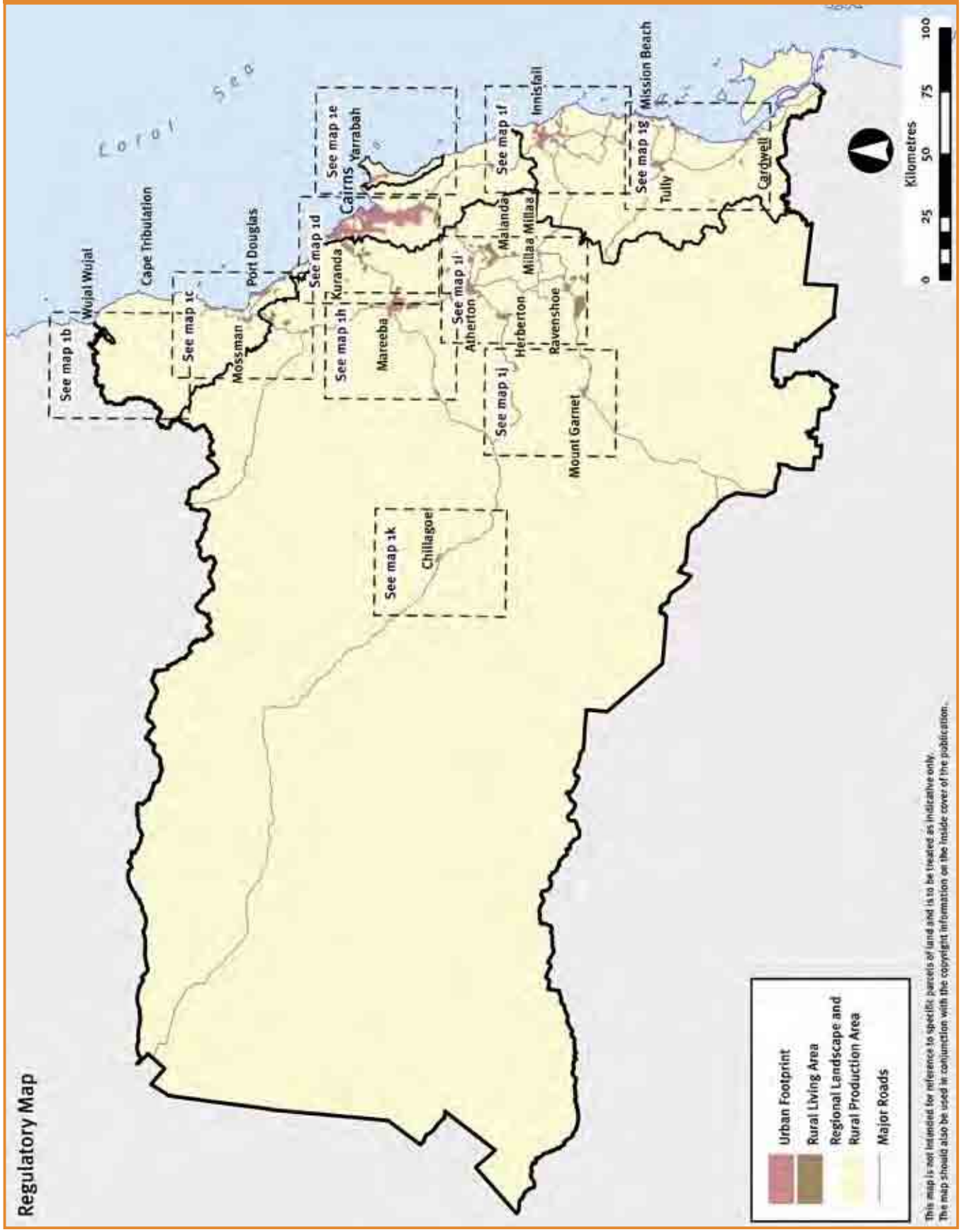
The review process guides further policy development and assists in setting future priority projects and actions.

The regional plan should be reviewed formally at least every 10 years in accordance with the procedure set out in section 2.5A.10(2) of IPA. The regional planning Minister may then amend or replace the regional plan. There is also a provision under IPA for the regional planning Minister to approve minor revisions of the regional plan at any time, if required.

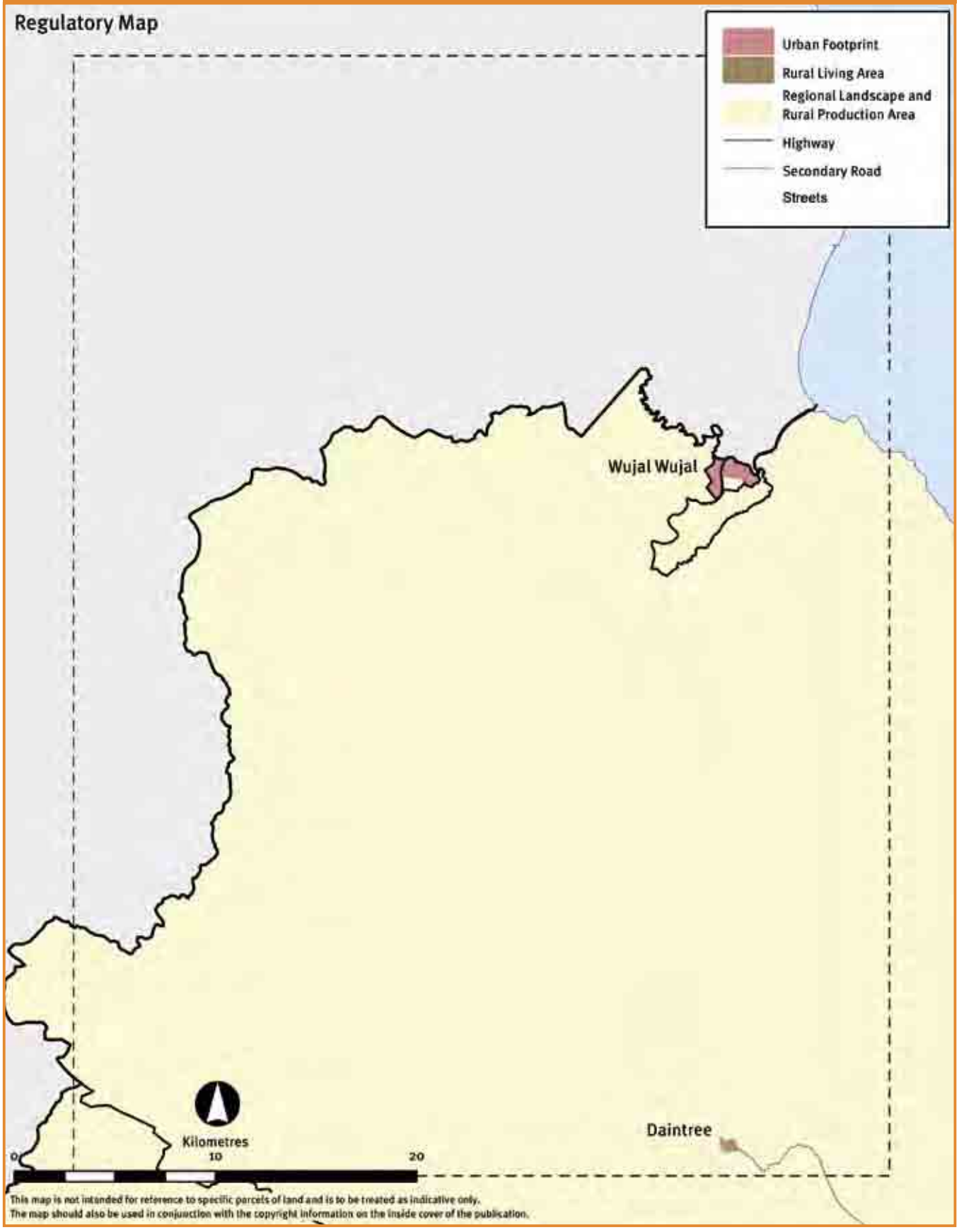
Any review will include input from government and the community. It will provide an open and accountable process which will involve and inform the community of the outcome of any regional monitoring program.

Maps

Map 1a: FNQ Regional land use categories

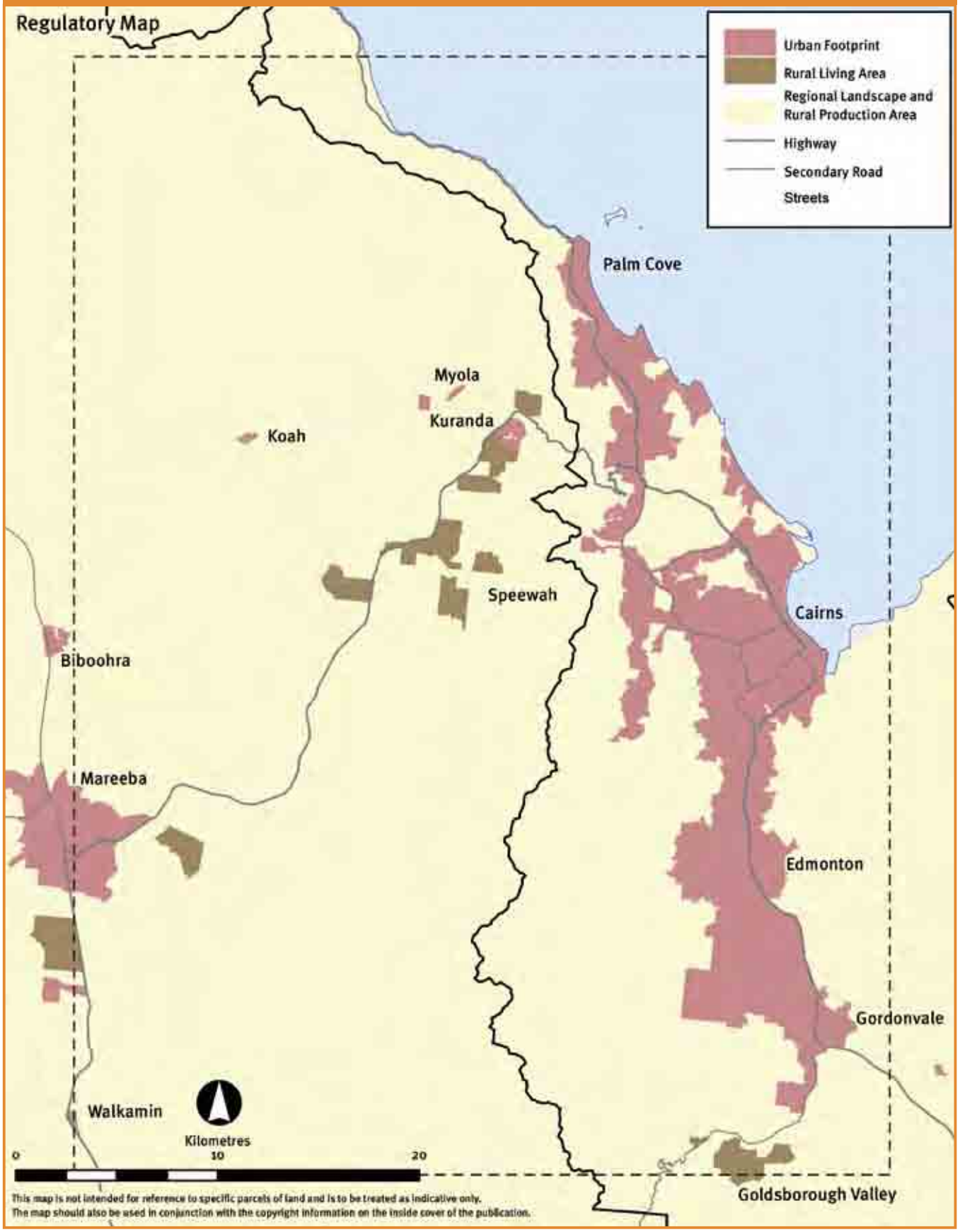


Map 1b: FNQ Regional land use categories



Map 1c: FNQ Regional land use categories

Map 1d: FNQ Regional land use categories

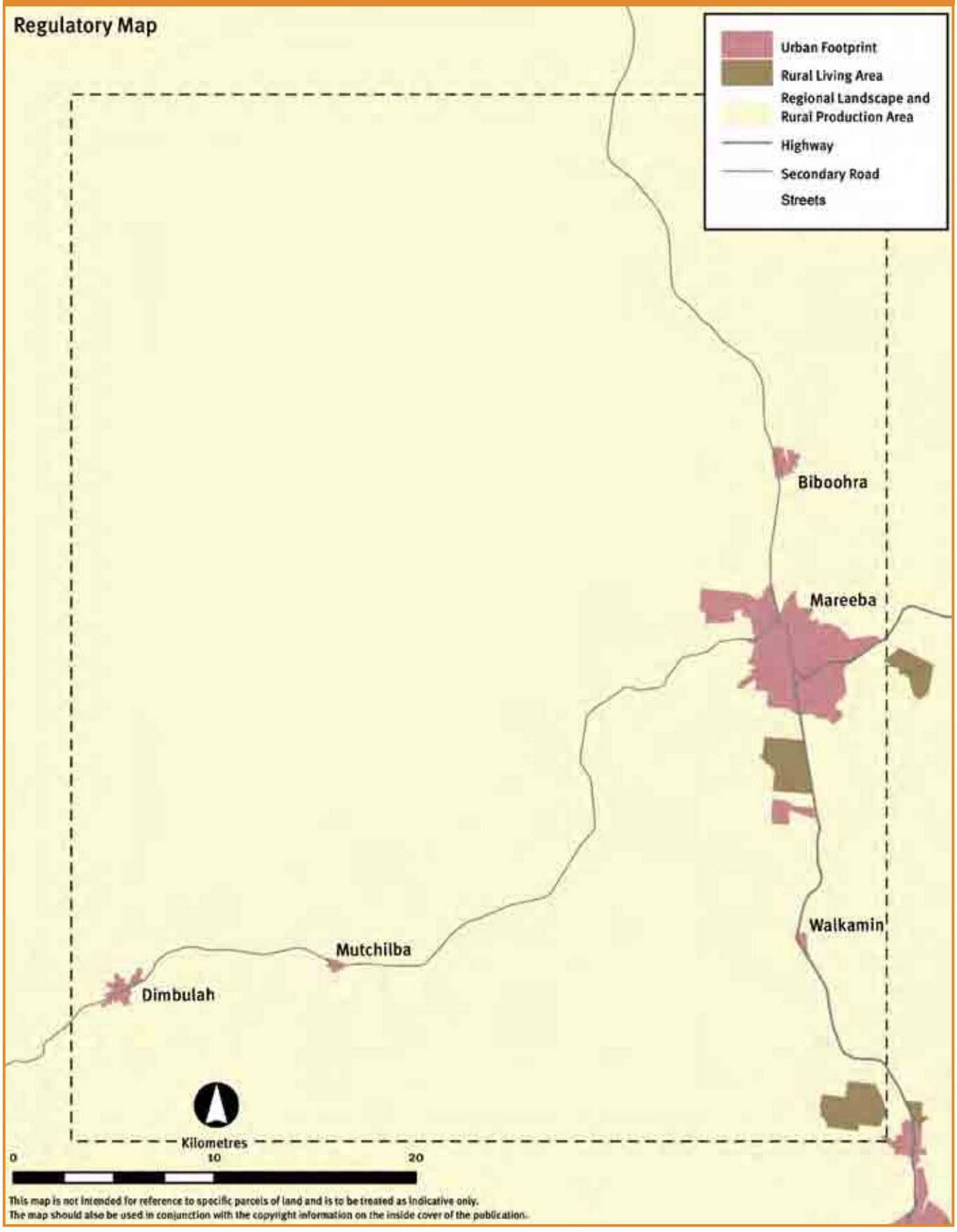


Map 1e: FNQ Regional land use categories

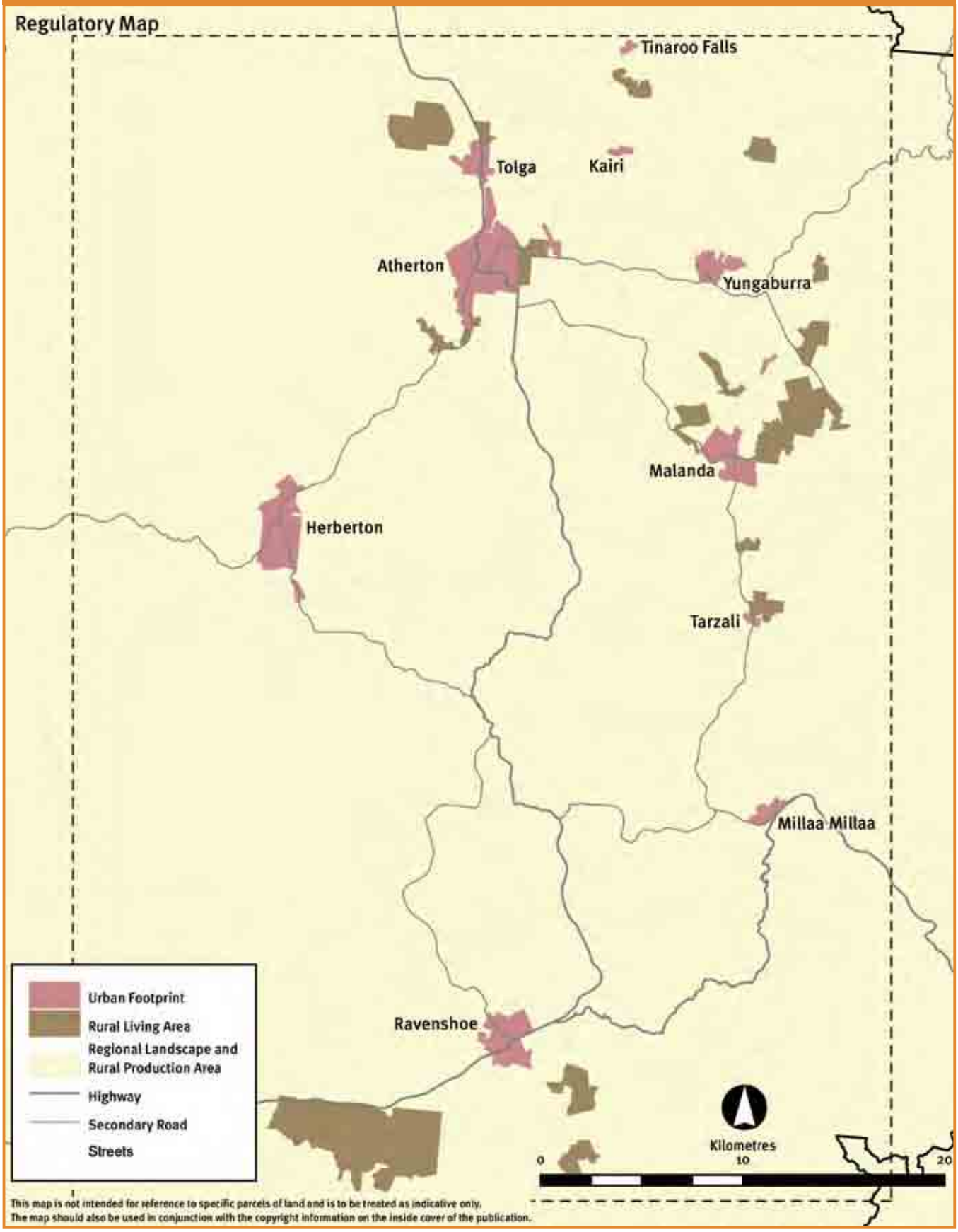
Map 1f: FNQ Regional land use categories

Map 1g: FNQ Regional land use categories

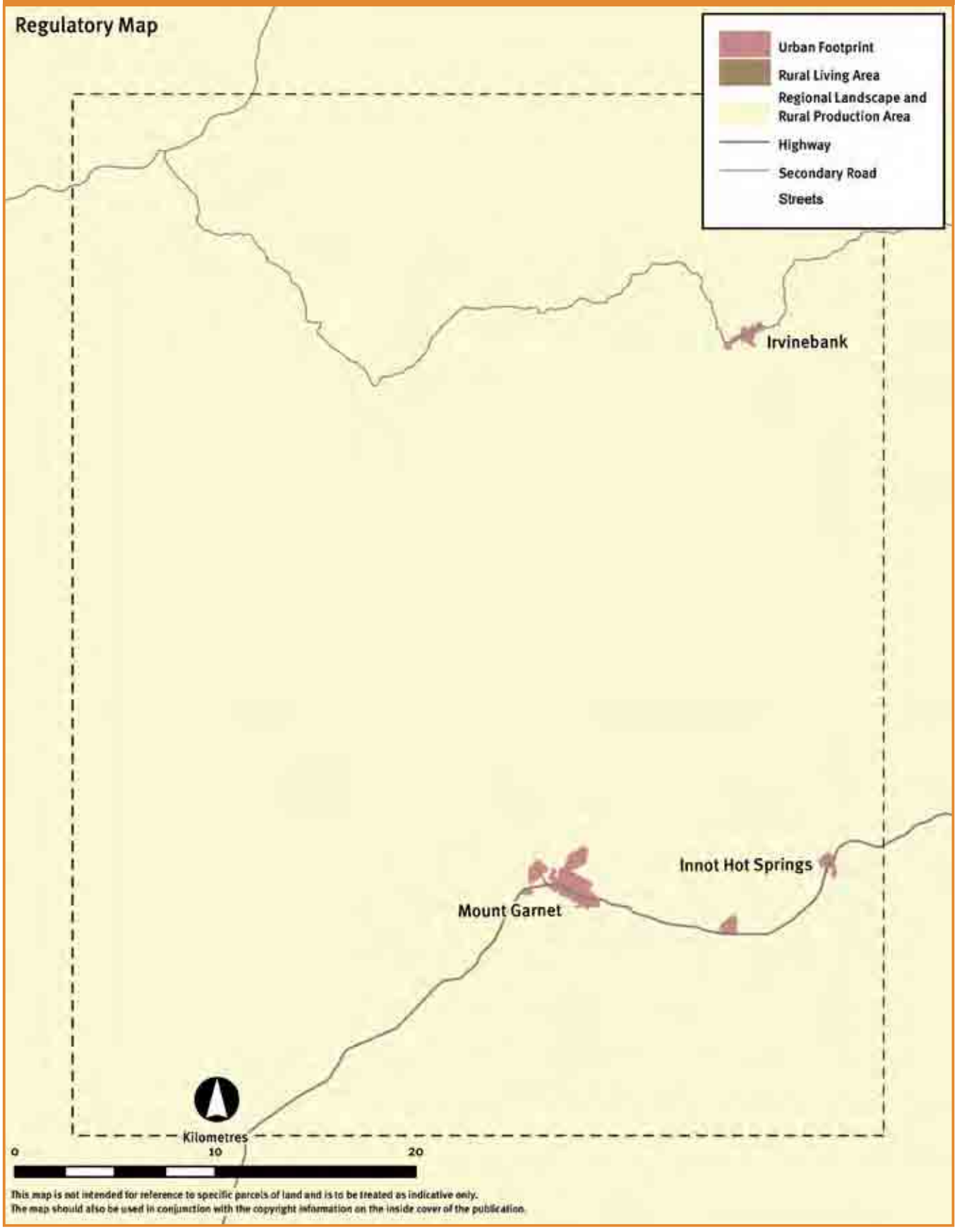
Map 1h: FNQ Regional land use categories



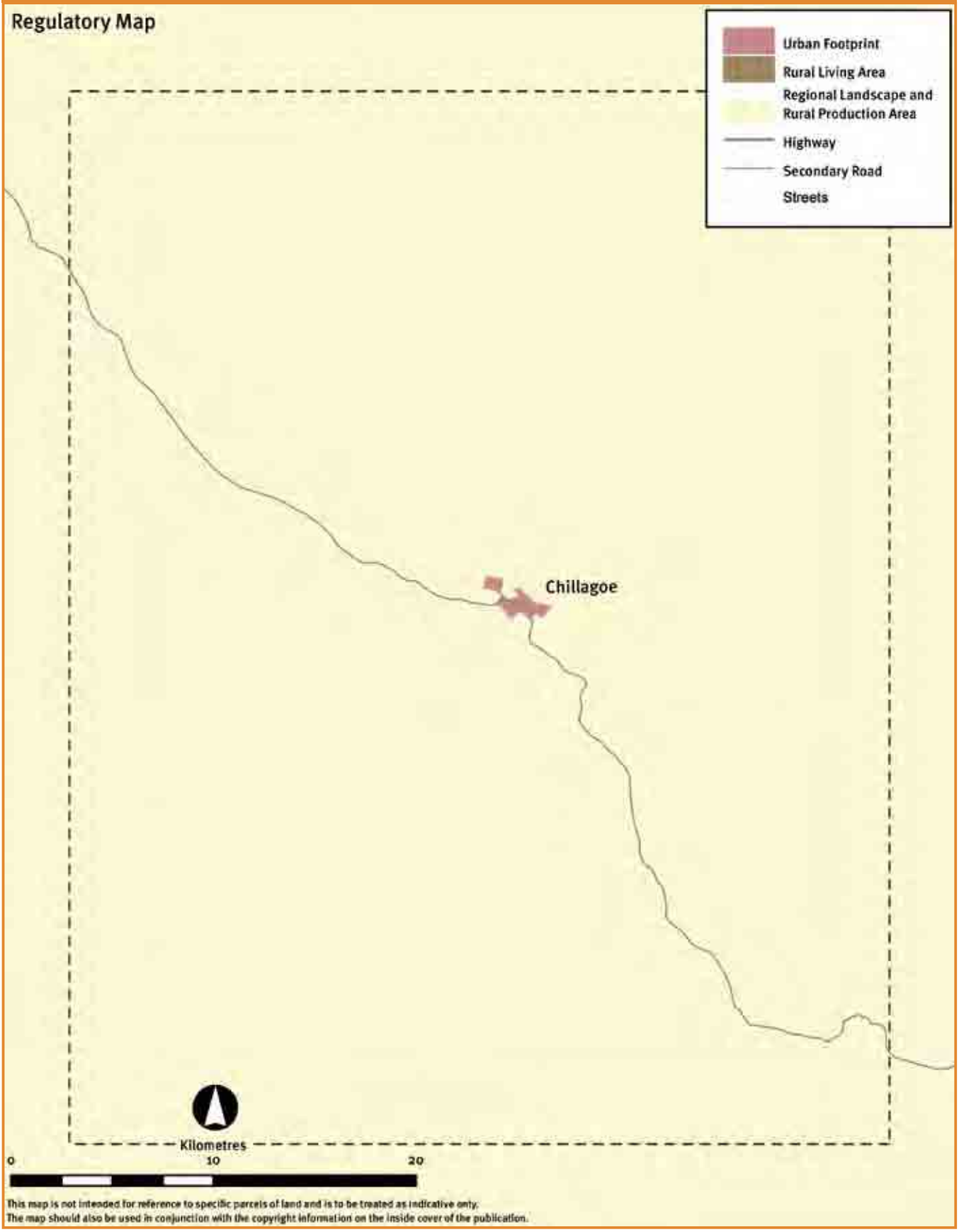
Map 1i: FNQ Regional land use categories



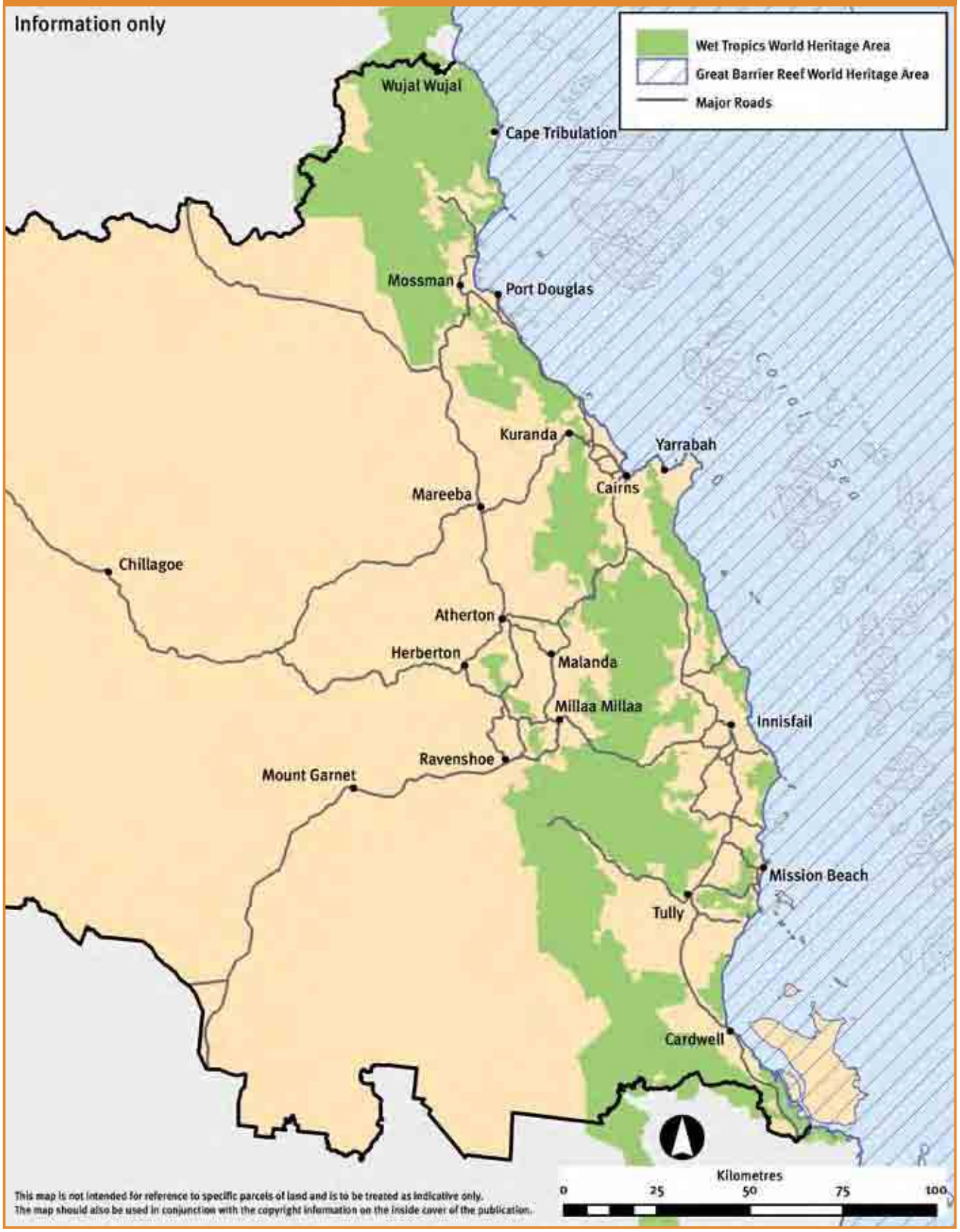
Map 1j: FNQ Regional land use categories



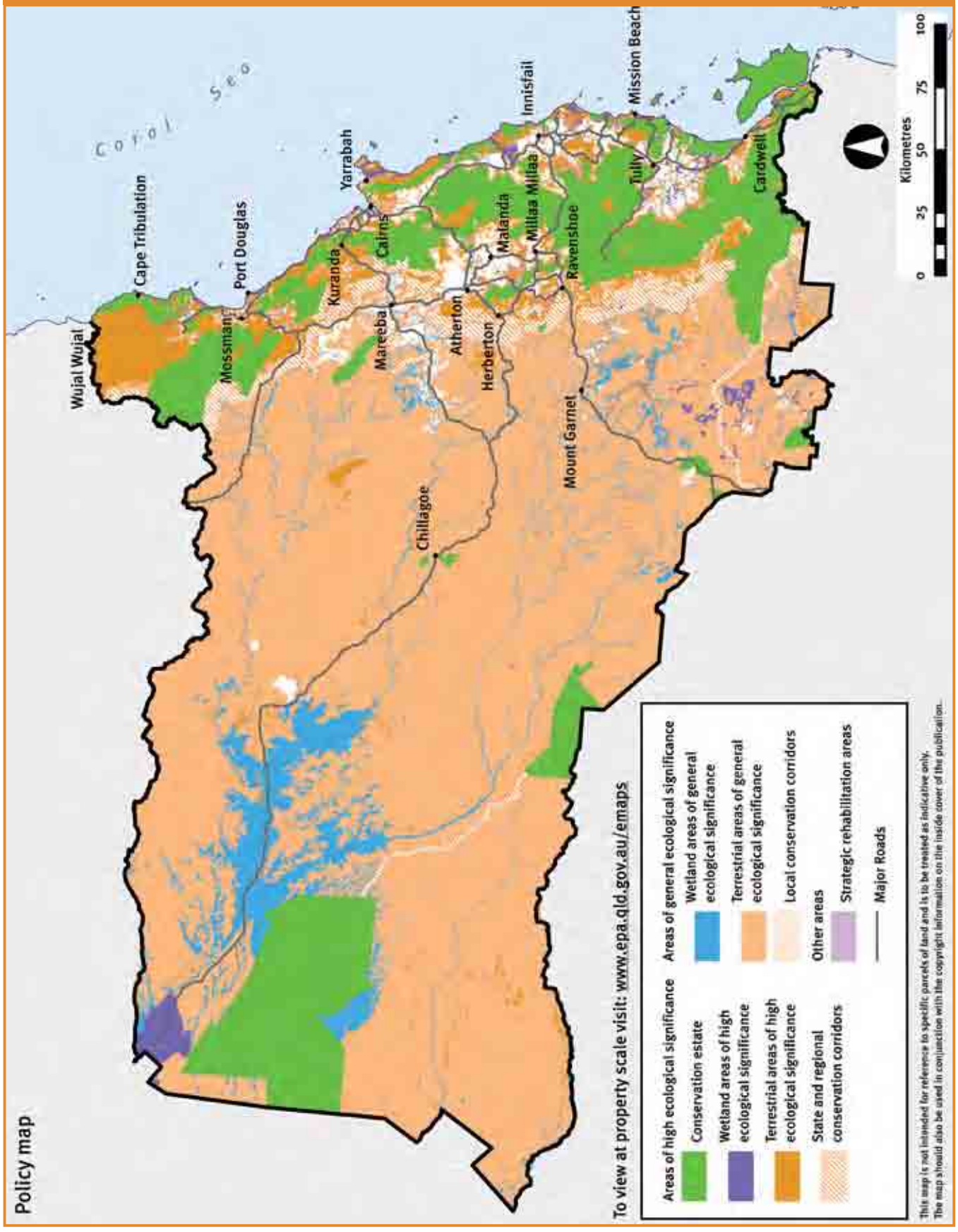
Map 1k: FNQ Regional land use categories



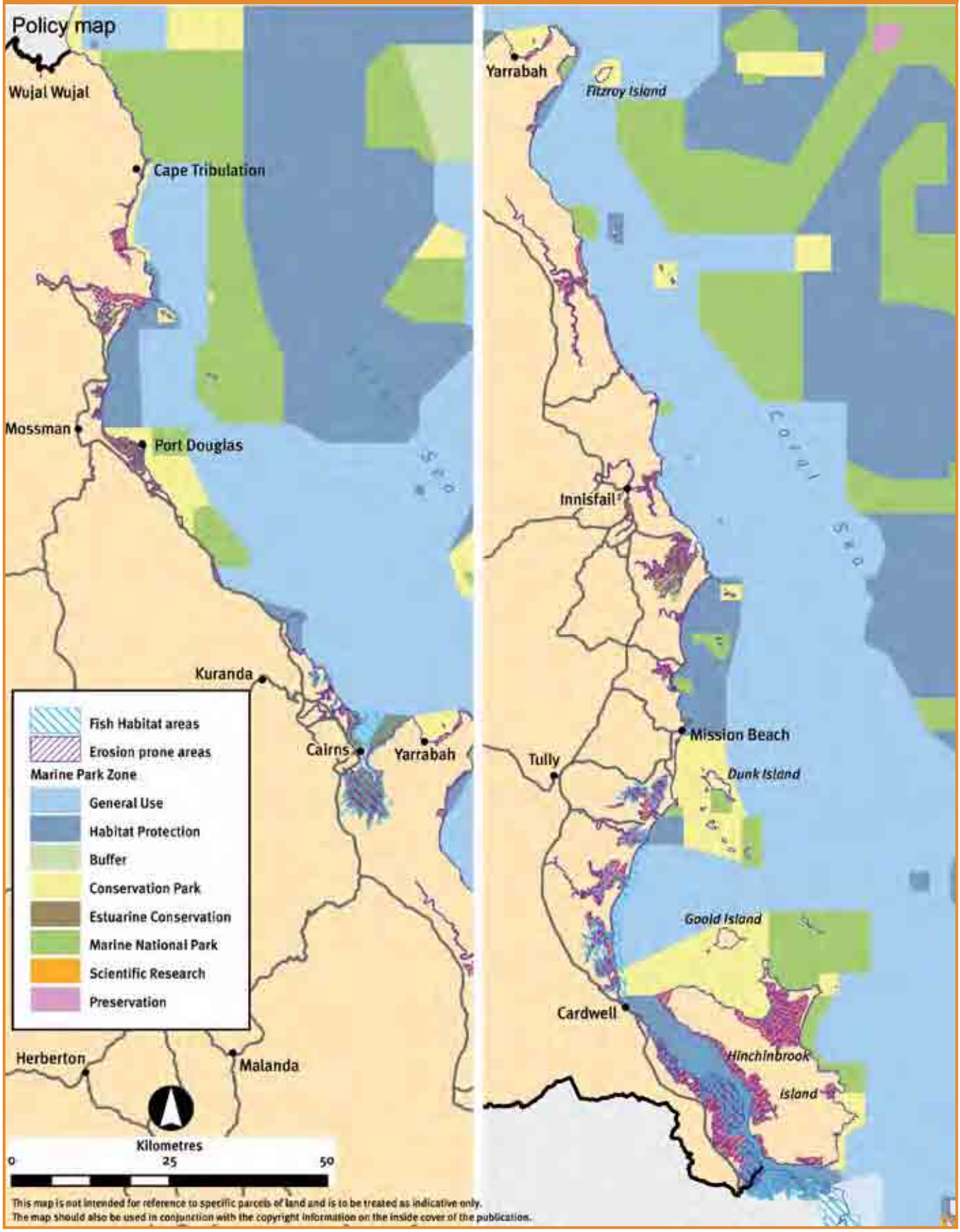
Map 2: FNQ World Heritage area



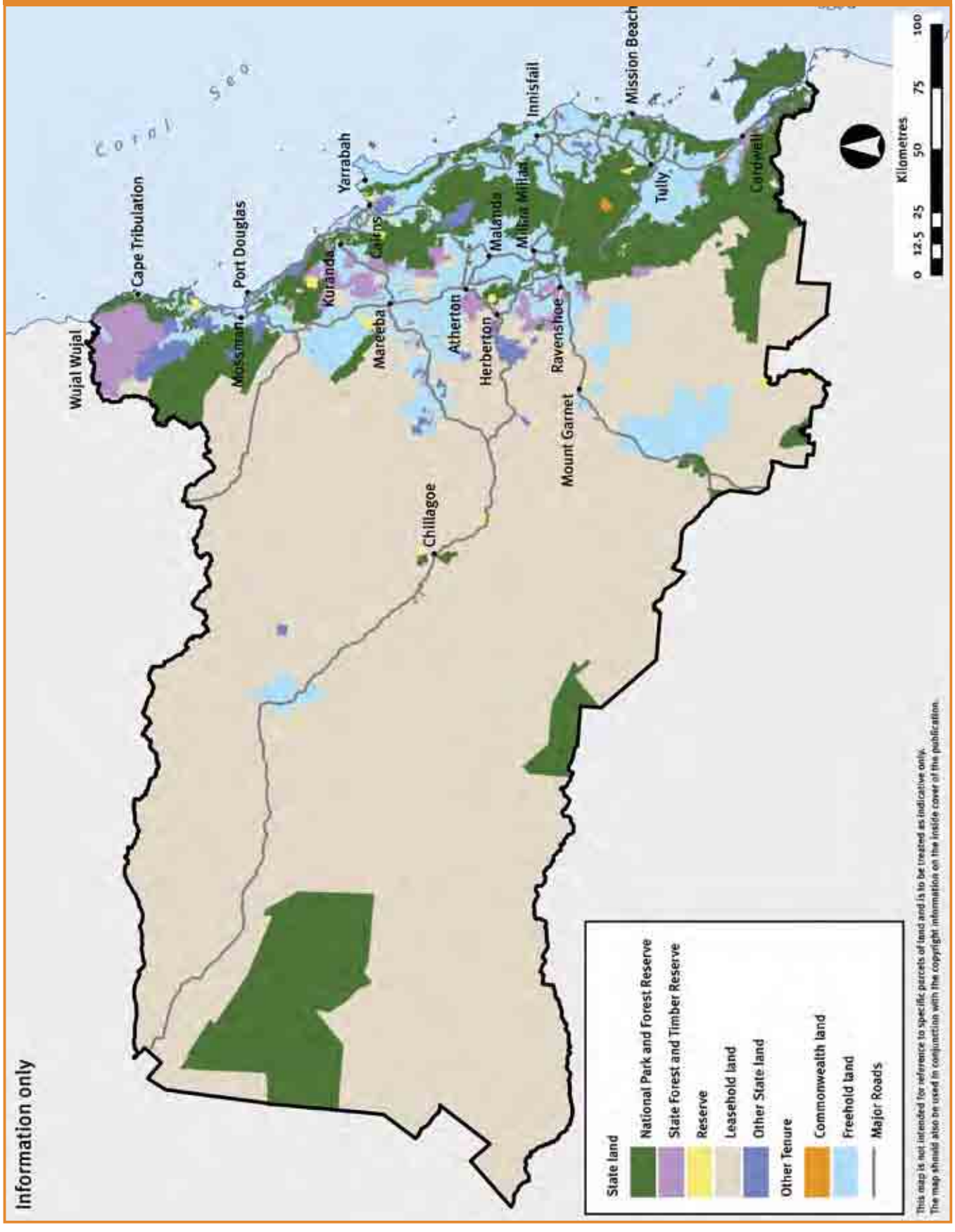
Map 3: FNQ Areas of ecological significance



Map 4: FNQ Coastal and marine management

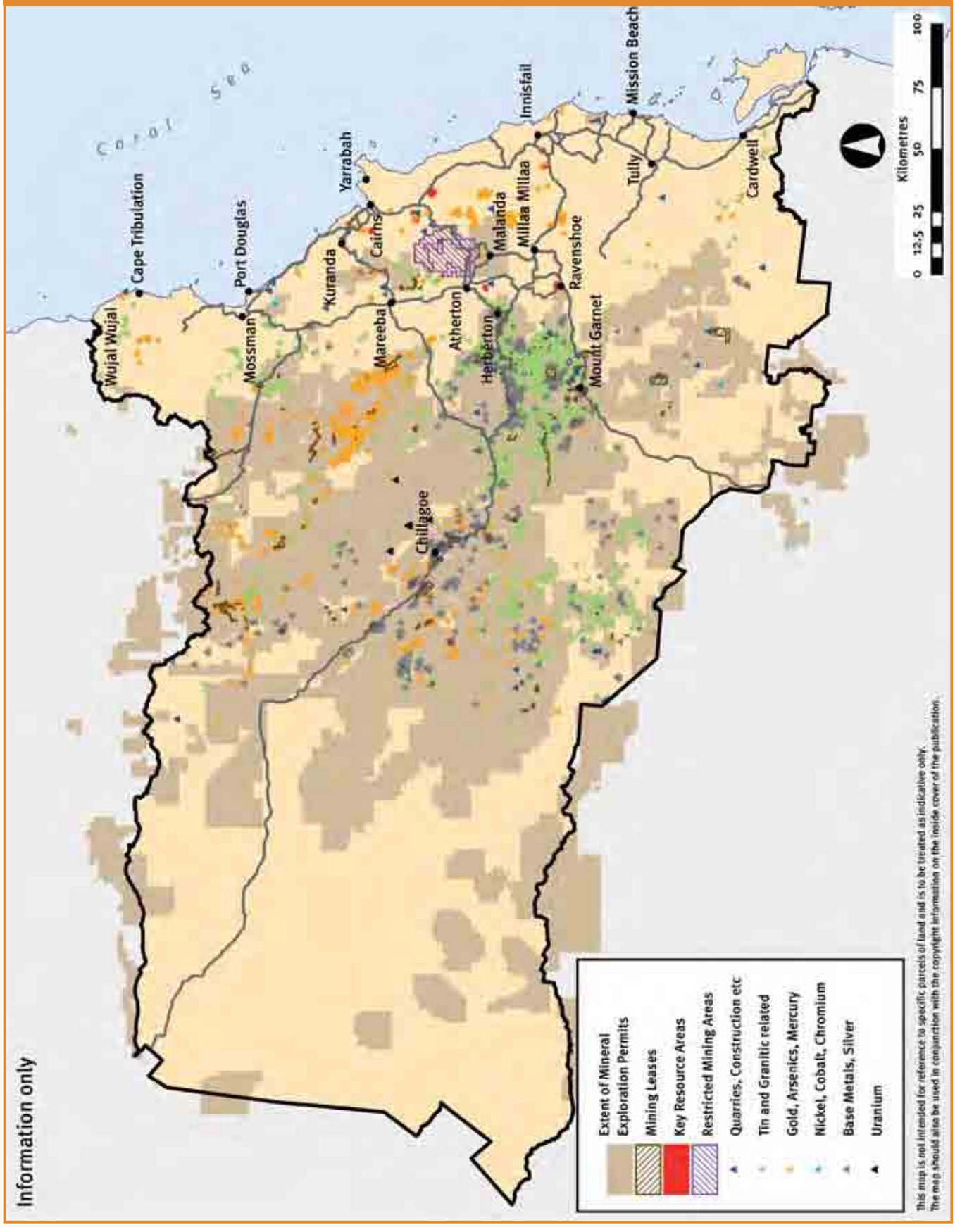


Map 5: FNQ Land tenure

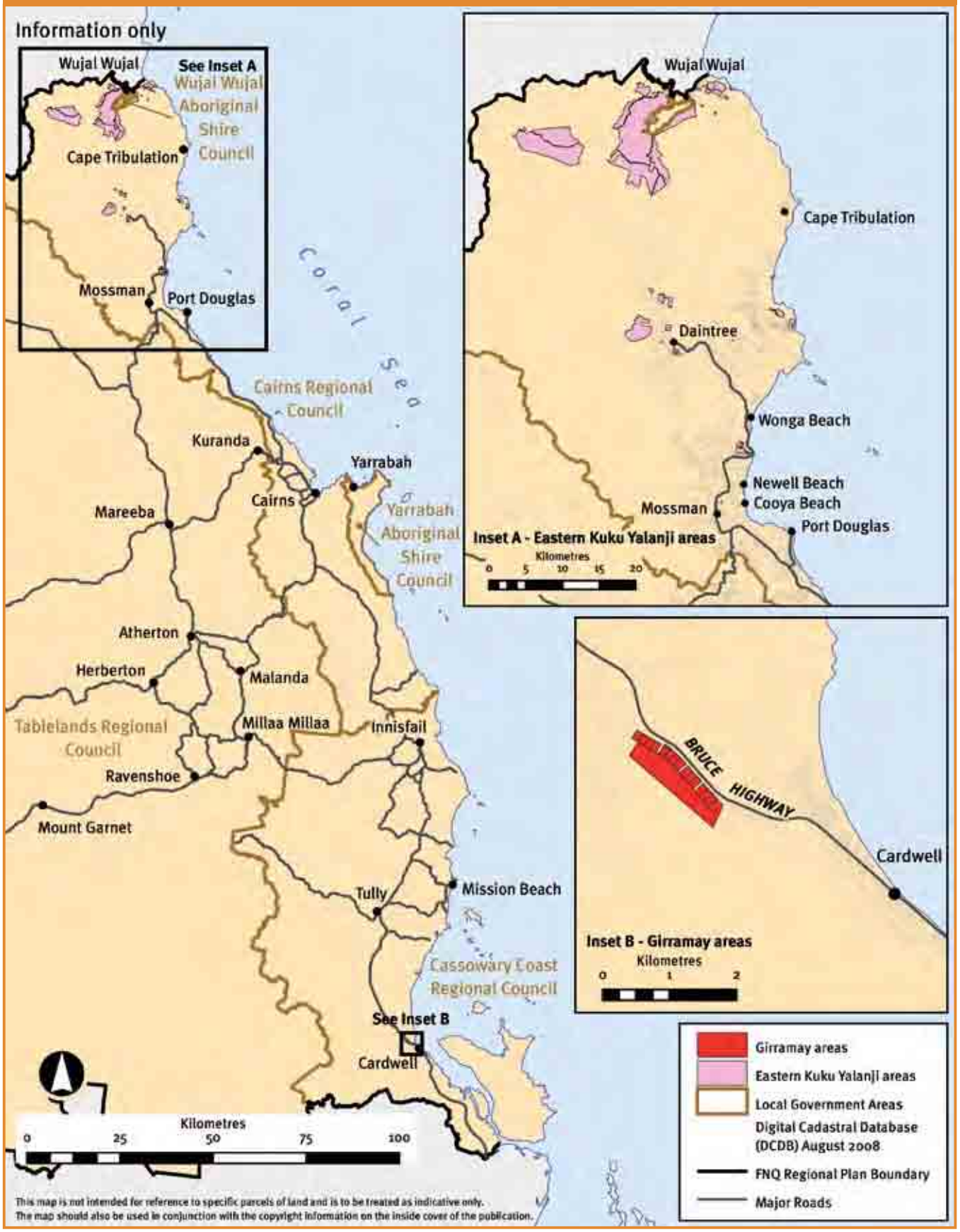


Map 6: FNQ Good quality agricultural land

Map 7: FNQ Mineral and extractive resources

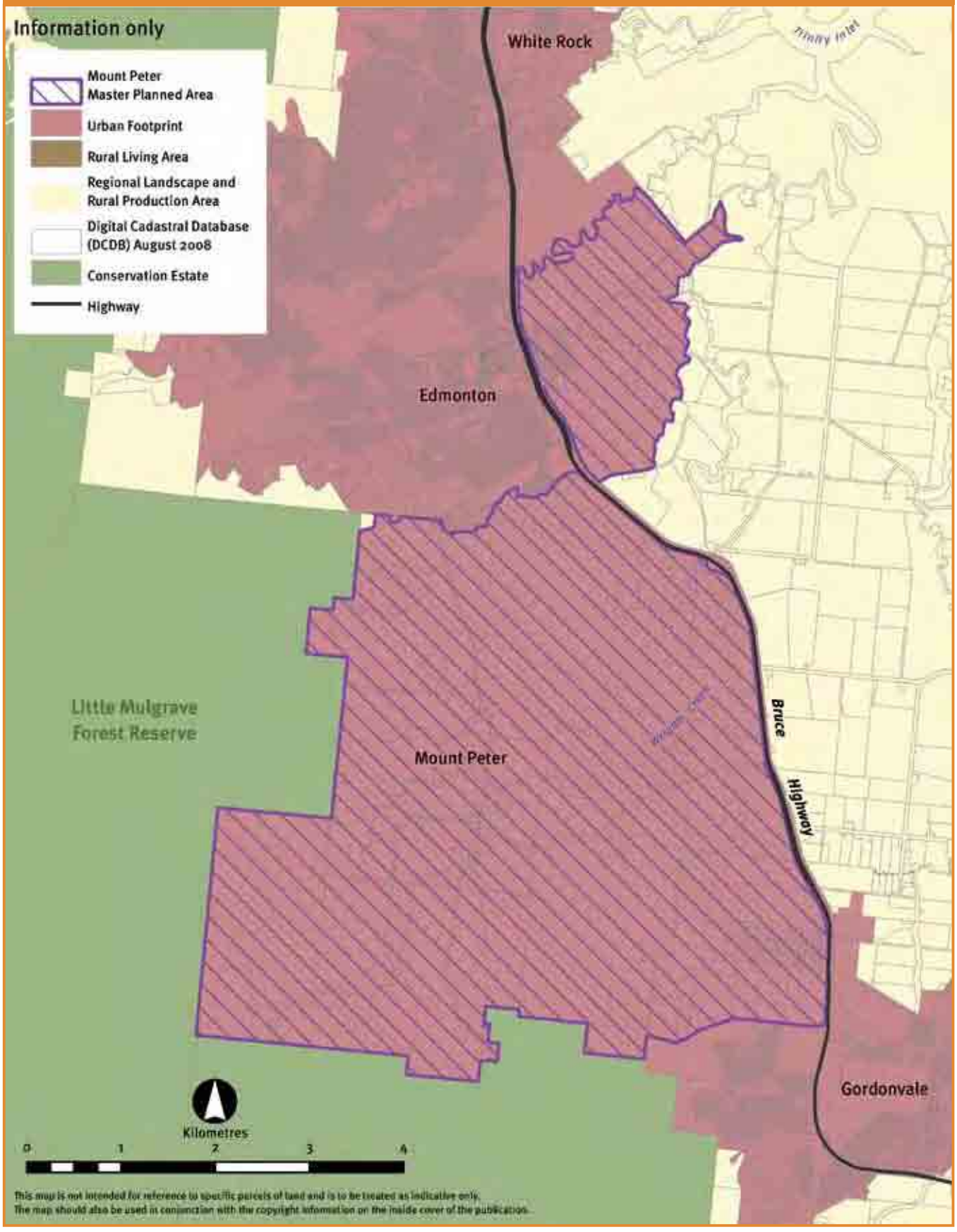


Map 8: FNQ Indigenous investigation areas

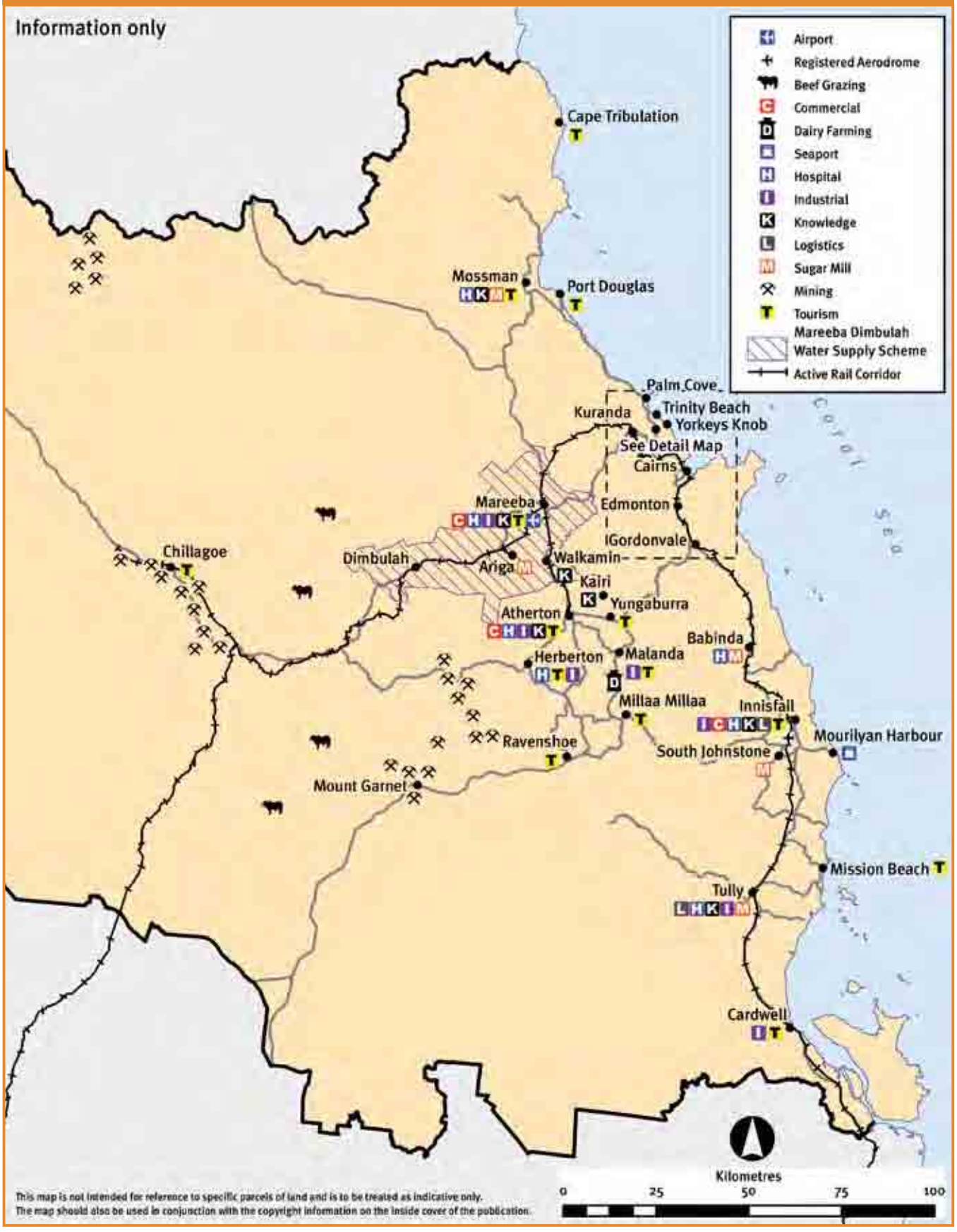


Map 9: FNQ Regional activity centres

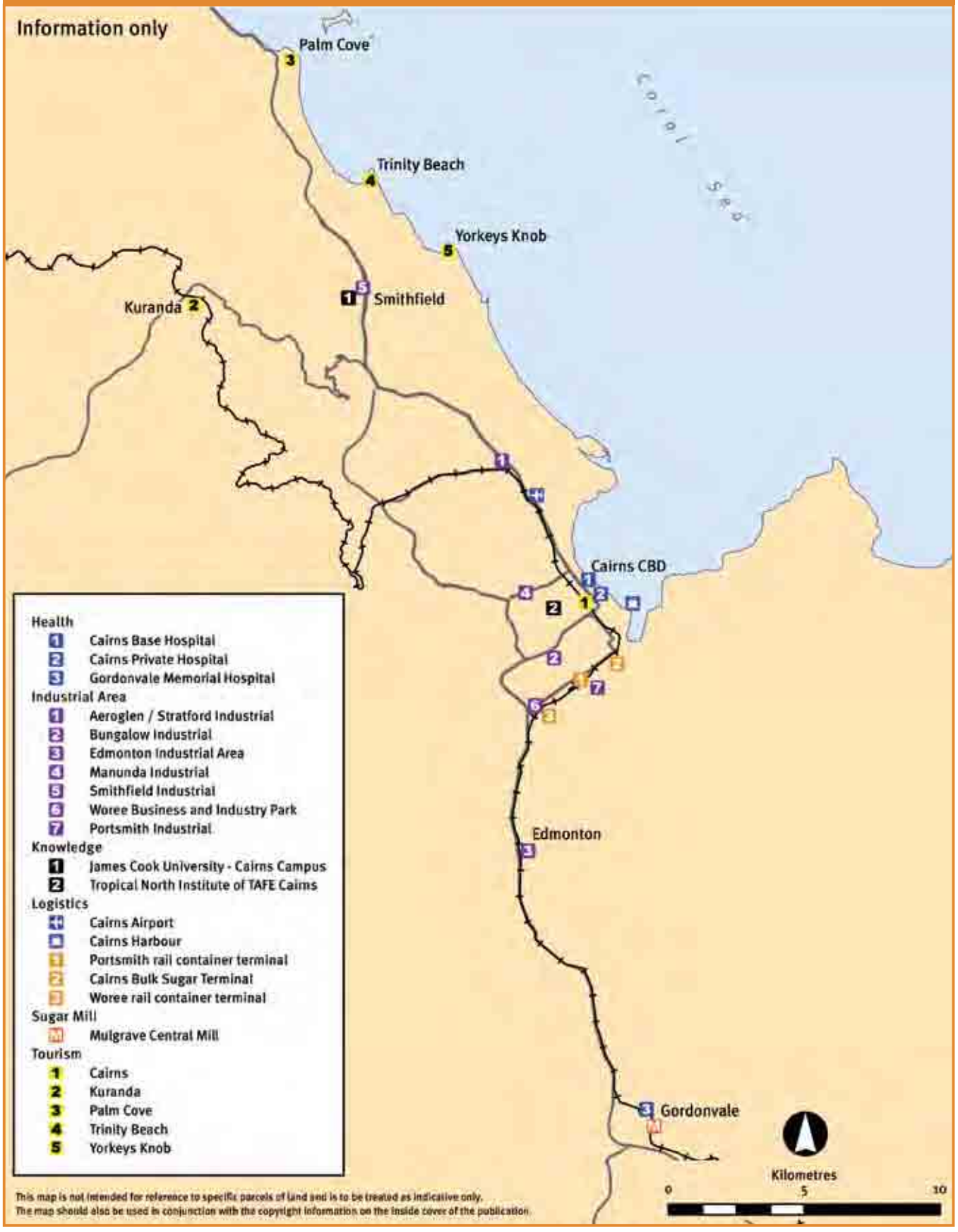
Map 10: FNQ Mount Peter declared Master Planned Area



Map 11: FNQ Regional economic activity

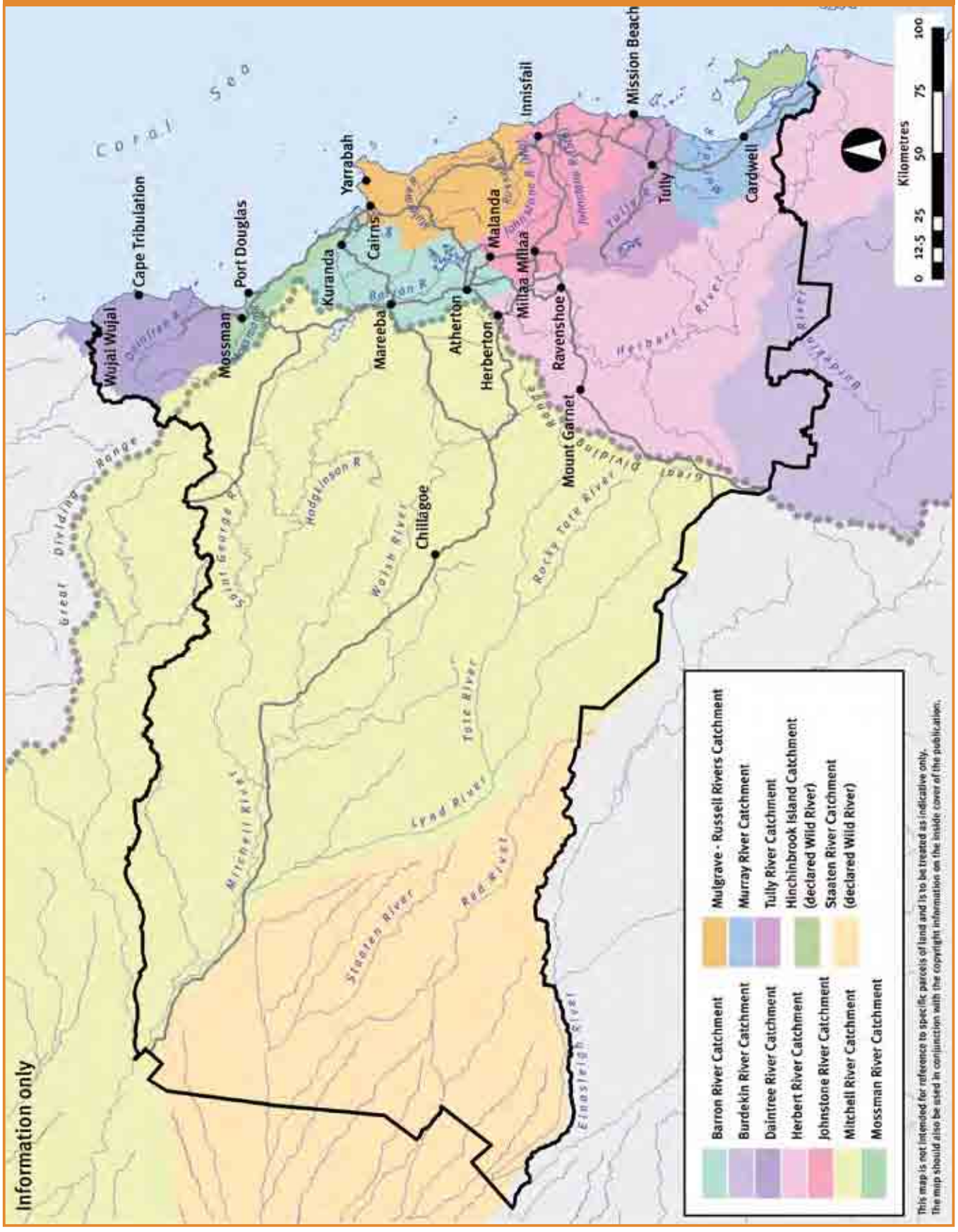


Map 12: FNQ Cairns area economic activity

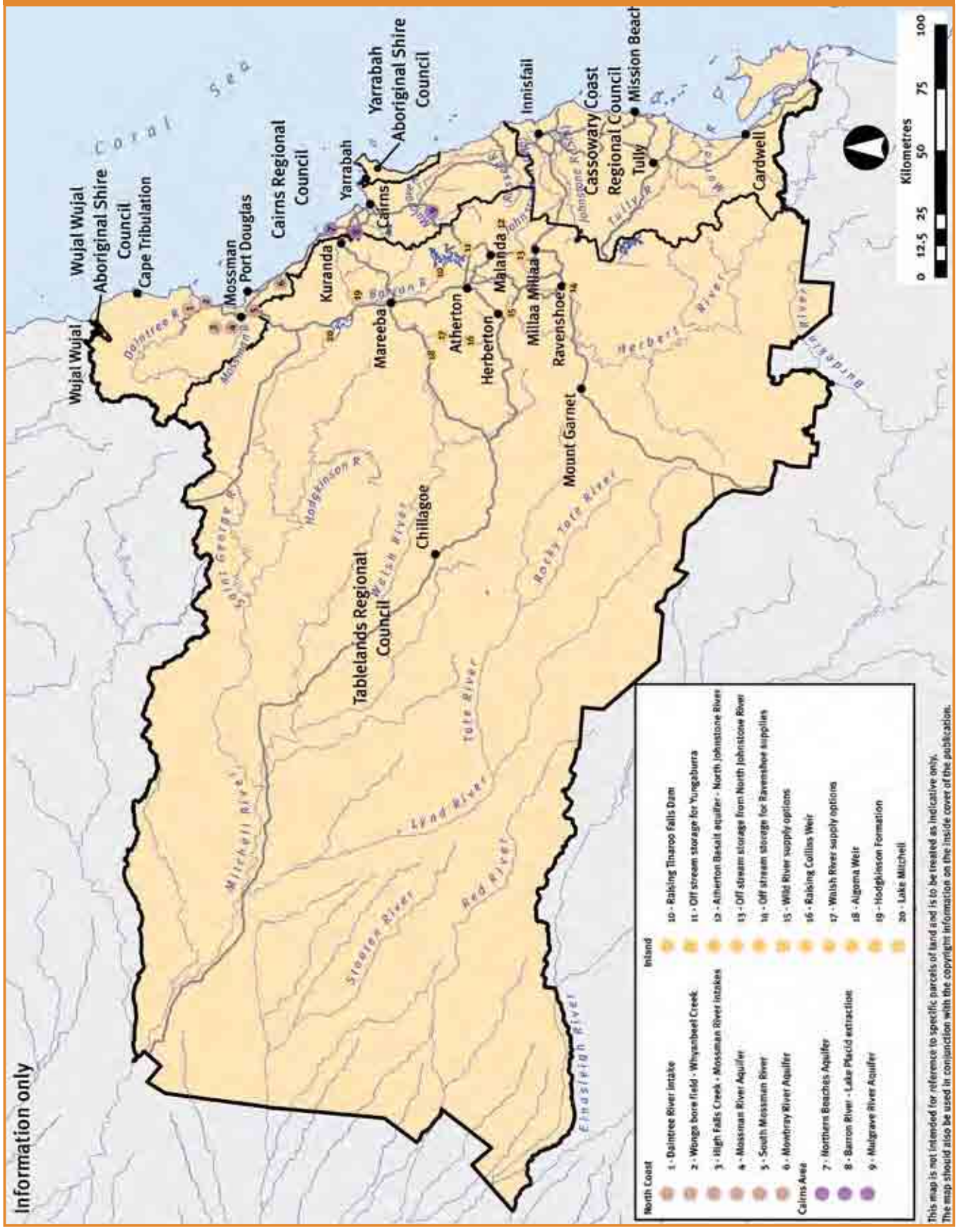


Map 13: FNQ Infrastructure

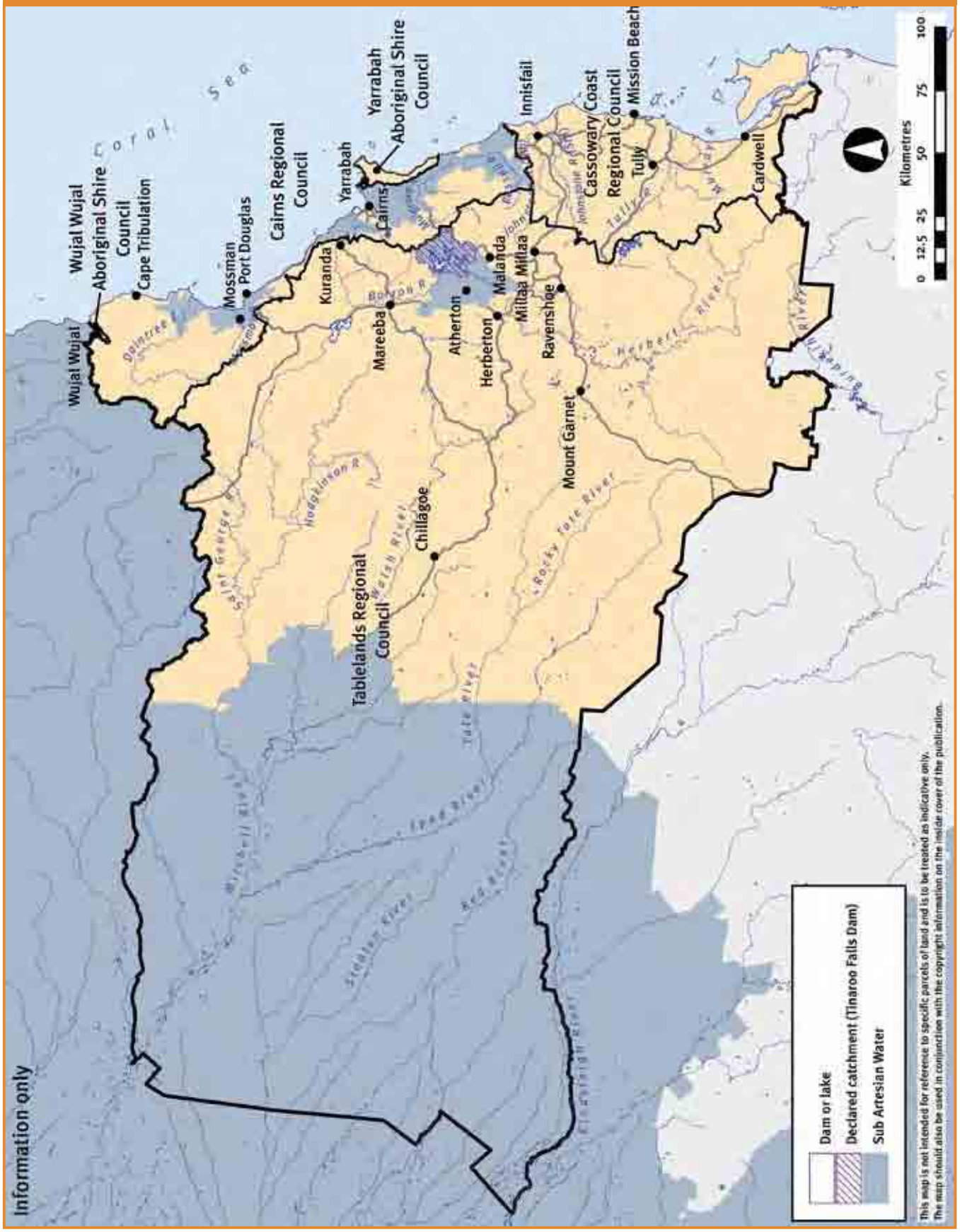
Map 14: FNQ Water catchments



Map 15: FNQ Water supply options



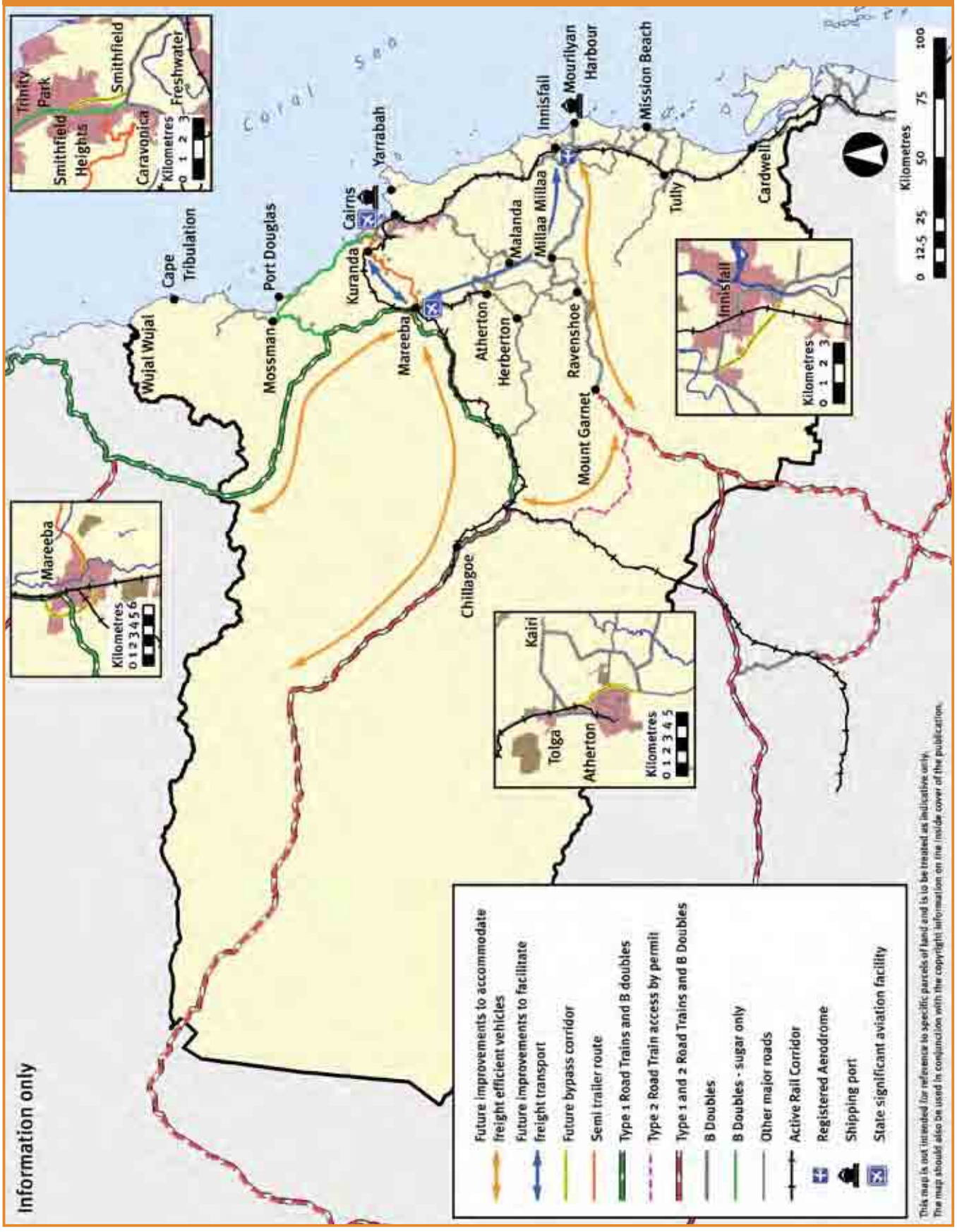
Map 16: FNQ Water resources



Map 17: FNQ Cairns transit oriented communities

Map 18: FNQ cycle network

Map 19: FNQ Regional freight routes



Bibliography

AgForce Queensland & Local Government Association of Queensland (2006) **Blueprint for the Bush: Building a Sustainable, Liveable and Prosperous Rural Queensland**. Department of Communities, Queensland Government, Brisbane. 52 pp.

Australian Bureau of Statistics (2007) **2006 Census QuickStats for Yarrabah and Wujal Wujal**. October 2007. www.censusdata.abs.gov.au

Australian Greenhouse Office (2006) **Climate Change Impacts and Management: a Guide for Business and Government**. Australian Greenhouse Office, Canberra. 73 pp.

Australian and New Zealand Environment and Conservation Council (1996) **The National Strategy for the Conservation of Australia's Biological Diversity**. Department of the Environment, Sport and Territories. 54 pp.

AUSTROADS (1999) **Guide to Traffic Engineering Practice Part 13 Pedestrians and Part 14 Bicycles**, www.austroads.com.au, accessed 29/01/08.

Blake T (1996) **Queensland Cultural Heritage Context Study, A report for the Cultural Heritage Branch**. Unpublished document.

Buckley Vann and Environment North (2006) **Myola Planning Study Environmental Analysis Report**. Unpublished document. 49 pp. www.kurandarangeupgrade.com

Cairns Port Authority (2006) **Cairns Port Authority Land Use Plan** www.cairnsport.com.au.

Cairns City Council (2007) **Cairns Style Design Guide**.

Cairns Regional Council (2008a) **Edmonton Sport and Recreation Facility Needs Study (Final Report)**, www.dsc.qld.gov.au.

Cairns Regional Council (2008b), **Gordonvale Sporting Precinct**, www.cairns.qld.gov.au.

Cardno Eppell Olsen (2007) **Draft Principal Cycle Network Plan–Far North Queensland**. Unpublished document.

Commonwealth of Australia (Department of Transport and Regional Services) (1995) **Australian Model Code for Residential Development** (AMCORD), www.creationcorporation.com.au

Commonwealth of Australia (1992) **National Strategy for Ecologically Sustainable Development**. Australian Government Publishing Service, Canberra. 128 pp.

CSIRO and BoM (2007) **Climate Change in Australia: Technical report 2007**. Commonwealth Scientific and Industrial Research Organisation & Bureau of Meteorology, CSIRO, Melbourne. 148pp.

Department of Aboriginal and Torres Strait Islander Policy (2005) **Partnerships Queensland: future directions framework for Aboriginal and Torres Strait Islander policy in Queensland 2005-10**. Queensland Government.

Department of Communication and Information, Local Government, Planning and Sport (2000) **Far North Queensland Regional Plan**. Queensland Government, Cairns. 316 pp.

Department of Communities, Office for Aboriginal and Torres Strait Islander Partnerships (2007) **Partnerships Queensland: Implementation Progress Report 2006**. Queensland Government. 22 pp.

Department of Communities, Office for Aboriginal and Torres Strait Islander Partnerships (2008) **Partnerships Queensland: Future directions framework for Aboriginal and Torres Strait Island Policy in Queensland 2005-10**, pp4.

Department of Communities (2008) **Strategic Plan 2008–2012**. www.communities.qld.gov.au.

Department of Communities and the Office of Urban Management (2006) **Strong Communities Handbook**. Queensland Government.

Department of Emergency Services (2003) **State Planning Policy 1/03: Mitigating the adverse impacts of flood, bushfire and landslides**. Queensland Government.

Department of Energy (2000) **The Queensland Energy Policy A Cleaner Energy Strategy**. Queensland Government, Brisbane. 16 pp.

Department of Environment (1996) **Waste Management Strategy for Queensland**, Queensland Government, Brisbane. 37 pp.

Department of Health (2008) **Draft Cairns Base Hospital and Associated Services Clinical Services Plan 2008**. Queensland Government.

Department of Local Government and Planning, **Queensland Residential Design Guidelines**. Queensland Government.

Department of Infrastructure (2007a) **South East Queensland Regional Plan 2005–2026 Implementation Guideline No. 5 Social Infrastructure Planning**. Office of Urban Management, Queensland Government, Brisbane. 126 pp.

Department of Infrastructure (2007b) **South East Queensland Regional Plan 2005–2026 Implementation Guideline No. 6 Rural Precinct Guidelines**. Office of Urban Management, Queensland Government, Brisbane. 24 pp.

Department of Infrastructure and Planning (2007a) **Far North Queensland Region: A Past and Future Demographic Profile**. Queensland Government. Unpublished document.

Department of Infrastructure and Planning (2007b) **Revised Broadhectare Study 2007–December 2007**. Queensland Government. Unpublished document.

Department of Infrastructure and Planning (2007c) **FNQ2025 Alternative Patterns of Development Evaluation Report**. Queensland Government. Unpublished document. 40 pp.

Department of Infrastructure and Planning (2007d) **Broadhectare study–Individual local government areas**. Queensland Government. Unpublished data.

Department of Infrastructure and Planning (2007e) **Extent of Development and Subdivision of Rural land in the FNQ Region November 2007**. Queensland Government. Unpublished data.

Department of Infrastructure and Planning (2007f) **The Economic and Social Impacts of Tourism Far North Queensland Planning Region August 2007**. Queensland Government. Unpublished document.

Department of Infrastructure and Planning (2007g) **Revised Population Projections for Eacham, Herberton and Mareeba LGAs November 2007**. Queensland Government. Unpublished document.

Department of Infrastructure and Planning (2007h) **Broadhectare Study (Individual LGAs in FNQ Region), December 2007**. Queensland Government. Unpublished document.

Department of Infrastructure and Planning (2007i) **Queensland Housing Affordability Strategy**. Queensland Government.

Department of Infrastructure and Planning (2008a) **Queensland population update No. 13**. May 2008, Queensland Government.

Department of Infrastructure and Planning (2008b) **Household population and household size projections**. Queensland Government. Unpublished data.

Department of Infrastructure and Planning (2008c) **Population and housing fact sheet–Far North**. November 2008, Queensland Government.

Department of Infrastructure and Planning (2008d) **Consultation Report—Far North Queensland Draft Regional Plan 2025 and State Planning Regulatory Provisions (Regional Plans)**. Queensland Government.

Department of Infrastructure and Planning (2008e) **Improving sustainable housing in Queensland—Discussion Paper**. June, 2008. Queensland Government.

Department of Local Government and Planning (1997) **Queensland Residential Design Guidelines**, Queensland Government, Brisbane.

Department of Local Government and Planning, and Department of Emergency Services (2003) **State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide**. Queensland Government. 20 pp.

Department of Local Government, Planning, Sport and Recreation (2007) **State Planning Policy 1/07 including Guideline Housing and Residential Development**. Queensland Government, Brisbane. 59 pp.

Department of Local Government, Sport and Recreation (2008) **Recreation Planning**, Queensland Government, www.sportrec.qld.gov.au.

Department of Main Roads (2007), **Road Traffic Noise Management–Code of Practice**. Queensland Government, October 2007.

Department of Main Roads, **Queensland Auslink Network Forward Strategy 2009-10 to 2013-14**. Queensland Government.

Department of Mines and Energy (2007a) **State Planning Policy 2/07 Protection of Extractive Resources**. Queensland Government, Brisbane.

Department of Mines and Energy (2007b) **State Planning Policy 2/07 Guideline Protection of Extractive Resources**. Queensland Government, Brisbane. 120 pp.

Department of Mines and Energy (2007c) **Queensland mining industries, A report on the economic significance of mining and mineral processing to the Northern region**. Queensland Government.

Department of Natural Resources, and Department of Local Government and Planning (1997) **Planning Guidelines: Separating Agricultural and Residential Land Uses**. Queensland Government, Brisbane. 40 pp.

Department of Natural Resources and Department of Environment (1998) **Stormwater Quality Control Guidelines for Local Government 1998**. Queensland Government, Brisbane. 55 pp.

Department of Natural Resources and Mines (2002) **State Planning Policy 2/02 Planning and Managing Development Involving Acid Sulfate Soils**. Queensland Government, Brisbane. 11, 48 pp.

Department of Natural Resources and Mines (2005a), **Planning Guidelines for Water Supply and Sewerage** March 2005. Queensland Government.

Department of Natural Resources and Mines (2005b), **Barron resource operations plan. Implementing the Water Resource (Barron) Plan 2002**. Queensland Government, 2005.

Department of Natural Resources and Water (2001), **Total Management Planning Guidelines**, www.nrw.qld.gov.au.

Department of Natural Resources and Water (2002) **Water Resource (Barron) Plan** Queensland Government.

Department of Natural Resources and Water (2005) **Barron Water Resource Operations Plan** Queensland Government.

Department of Natural Resources and Water (2007a) **ClimateSmart Adaptation 2007–12: An Action Plan for Managing the Impacts of Climate Change**. Queensland Government, Brisbane. 28 pp.

Department of Natural Resources and Water (2007b) **Draft Regional Water Supply Strategy**. Queensland Government.

Department of Natural Resources and Water (2007c), **Queensland Urban Drainage Manual, Volume 1, Second Edition 2007**. Queensland Government.

Department of Natural Resources and Water (2008) **Resource Planning Guideline F10 Policy and Code for Preserving Water Quality in Declared Catchment Areas**. Queensland Government. Unpublished document. 9 pp.

Department of the Premier and Cabinet (2008) **Toward Q2: Tomorrow's Queensland**. Queensland Government.

Department of Primary Industries & Department of Housing, Local Government and Planning (1992) **State Planning Policy 1/92 Development and the Conservation of Agricultural Land**. Queensland Government, Brisbane. 6 pp.

Department of Primary Industries & Department of Housing, Local Government and Planning (1993) **Planning Guidelines: The Identification of Good Quality Agricultural Land**. Queensland Government, Brisbane.

Department of Primary Industries and Fisheries (2008), **Draft Wetland Management Handbook: A Guide to Managing Wetlands in Intensive Agriculture with Farm Management System**. Queensland Government, unpublished document.

Department of Public Works, **Smart Housing**. Queensland Government. http://www.build.qld.gov.au.

Department of State Development and Innovation (2004) **Smart ICT Taking it to the World: A Four Year Growth Strategy for the Information and Communications Technology Industry in Queensland**. Queensland Government, Milton. 40 pp.

Department of State Development and Innovation (2005), **Queensland Ethanol Industry Action Plan 2005-2007**, Queensland Government.

Department of Tourism, Fair Trading and Wine Industry Development and Tourism Queensland (2006) **Queensland Tourism Strategy**. Queensland Government.

Department of Tourism, Regional Development and Industry (2008a) **Sustainable Resource Communities Policy, Social impact assessment in the mining and petroleum industries**. Queensland Government,

Department of Tourism, Regional Development and Industry (2008b) http://www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=52902

Department of Tourism, Sport and Racing (1998), **Open Space for Recreation and Sport, Planning Principles: A Guide for Local Government.** Queensland Government.

Environmental Protection Agency (1999), **Strategy for the conservation and management of Queensland's wetlands**. Queensland Government, January 1999.

Environmental Protection Agency (2001a) **State Coastal Management Plan–Queensland's Coastal Policy**. Queensland Government, Brisbane. 92 pp.

Environmental Protection Agency (2001b) Sustainable Industries Division, **Queensland Water Recycling Strategy, An initiative of the Queensland Government October 2001**. Queensland Government.

Environmental Protection Agency (2002) **Biodiversity Assessment and Mapping Methodology**. Queensland Government, Brisbane. 65 pp.

Environmental Protection Agency (2003a) **Wet Tropical Coast Regional Coastal Management Plan**. Queensland Government, Brisbane. 212 pp.

Environmental Protection Agency (2003b) **Cardwell—Hinchinbrook Regional Coastal Management Plan 2003**. Queensland Government, Brisbane. 150 pp.

Environmental Protection Agency (2003c), **Draft Wetland Buffer Guideline: Queensland Wetlands Programme**. Queensland Government, unpublished document.

Environmental Protection Agency (2004a) **Queensland Greenhouse Strategy**. Queensland Government, Brisbane. 89 pp.

Environmental Protection Agency (2004b) **Recovery Plan for the Southern Cassowary Casuarius casuarius johnsonii 2001–2005**. Queensland Parks and Wildlife Service, Queensland Government, Brisbane. 24 pp.

Environmental Protection Agency (2005), **Queensland Water Recycling Guidelines December 2005**. Queensland Government.

Environmental Protection Agency (2006a) **Aquatic Biodiversity Assessment and Mapping Method AquaBAMM: A Conservation Values Assessment Tool for Wetlands with Trial Application In the Burnett River Catchment**. Queensland Government, Brisbane. 83 pp.

Environmental Protection Agency (2006b) **Queensland Water Quality Guidelines 2006**. Queensland Government, Brisbane. 121 pp.

Environmental Protection Agency (2006c) **The State of Waste and Recycling in Queensland**, www.epa.qld.gov.au/publications?id=2229, accessed on 29/01/08.

Environmental Protection Agency (2007a) **Mitigating the Adverse Impacts of Storm Tide Inundation**. Queensland Government, Brisbane. 47 pp.

Environmental Protection Agency (2007b) **State and Regional Coastal Management Plans–Queensland's Coastal Policy Implementation Guidelines for Development Assessment November 2007 Interim Guideline**. Queensland Government, Brisbane. 60 pp.

Environmental Protection Agency (2007c) **State and Regional Coastal Management Plans–Queensland's Coastal Policy Implementation Guidelines for Planning Schemes November 2007 Interim Guideline**. Queensland Government. 55 pp.

Environmental Protection Agency (2008a). **Towards Oil Resilience Community Information Paper** Queensland Government. www.epa.qld.gov.au.

Environment Protection Agency (2008b) **Queensland Government Environmental Offsets Policy**. Queensland Government.

Environmental Protection Agency (2008c) **Climate change in Queensland: what is the science telling us**. Office of Climate Change, Queensland Government.

Environmental Protection Agency, **Queensland Biodiversity Policy Framework: Sustaining Our Natural Wealth**. Queensland Government, 16 pp.

Environmental Protection Agency (2008d) **Queensland Best Practice Environmental Management Guideline–Urban Stormwater**. Queensland Government.

FNQ NRM Ltd. & Rainforest CRC (2004) **Sustaining the Wet Tropics: A Regional Plan for Natural Resource Management 2004-2008**. FNQ NRM Ltd, Innisfail. 208 pp.

FNQROC (2007), **Regional Development Manual**. Far North Queensland Regional Organisation of Councils. www.fnqroc.qld.gov.au.

Garnaut (2008). **Garnaut Climate Change Review Report**. www.garnautreview.org.au/contents.htm, accessed 20/10/2008.

Global Tourism and Leisure Pty Ltd (2003), **Tablelands Tourism Strategic Development Strategy**, February 2003.

Heuris Partners Ltd. (2008) **Oil Vulnerability Strategy/Action Plan For Queensland: Research Paper**. Report to the Minister for Sustainability, Climate Change and Innovation, September 2008, www. epa.qld.gov.au.

Hoeggh-Guldberg, O. & Hoeg-Guldberg, H. (2008). **The impact of climate change and ocean acidification on the Great Barrier Reef and its tourist industry**. Report commissioned by the Garnaut Climate Change Review, www.garnautreview.org.au

Lehrer J (2009) **How the city hurts your brain**. http://www.boston.com/bostonglobe/ideas/articles/2009/01/04/how_the_city_hurts_your_brain/

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. 243 pp.

Maunsell Aecom (2005) **Cairns Bus Priority Study**. Unpublished document.

Maunsell McIntyre Pty Ltd. (2001) **Myola Feasibility Study**. Unpublished document. 171 pp.

Maunsell McIntyre Pty Ltd and Environment North (2005) **Integrated Transport Study for Kuranda Range–Impact Assessment Study**. Unpublished document. 68 pp.

Mike Halliburton Associates and Transplan Pty Ltd (2007) **Atherton Tablelands Rail Trails Feasibility Study Draft Report**. Queensland Transport, Queensland Government.

National Native Title Tribunal (2007) **Eastern Kuku Yalanji people's native title determination**. 9 December 2007.

Northern Gulf Resource Management Group (2004) **Northern Gulf Regional Natural Resource Management Plan**. 199 pp.

Ports Corporation of Queensland (2003) **Port of Mourilyan Land Use Strategy**. www.pcq.com.au/mourilyan.cfm, accessed 29/01/2008.

Queensland Government and Commonwealth of Australia (2003) **Reef Water Quality Protection Plan 2003**. Queensland Department of Premier and Cabinet, Brisbane. 44 pp.

Queensland Government et al (2004)

Queensland Government (2007a), **ClimateSmart 2050 Queensland climate change strategy 2007: a low-carbon future**.

Queensland Government (2007b) **Queensland's Vulnerability to Rising Oil Prices: Taskforce Report**. Unpublished document. 158 pp.

Queensland Health (2002) **Guidelines to minimise mosquito and biting insect problems in new development areas**. Queensland Government.

Queensland Health (2005) **Health and social impact assessment of SEQ Regional Plan**. Queensland Government. 19pp.

Queensland Office of Climate Change (2008) **Issues paper: Review of the Queensland Government Climate Change Strategy**, Queensland Government, www.climatechange.qld.gov.au.

Queensland Police Service (2007) **Crime Prevention through Environmental Design: Guidelines for Queensland**. Queensland Government.

Queensland Transport (2001) **Rail Network Strategy for Queensland**, Queensland Government, www.transport.qld.gov.au.

Queensland Transport (2002a) **State Planning Policy 1/02 Development in the Vicinity of Certain Airports and Aviation Facilities**. Queensland Government, Brisbane. 20 pp.

Queensland Transport (2002b) **State Planning Policy 1/02 Guideline Development in the Vicinity of Certain Airports and Aviation Facilities**. Queensland Government, Brisbane. 54 pp.

Queensland Transport (2003) **Queensland Cycle Strategy**, www.transport.qld.gov.au/Home/General_information/Cycling/Strategy/, accessed 29/01/2008.

Queensland Transport (2005a) **Cairns Integrated Public Transport Plan**, Queensland Government, www.transport.qld.gov.au.

Queensland Transport (2005b) **Land Use and Public Transport Index**. Queensland Government.

Queensland Transport, **Queensland Transports Interest's in Planning Schemes**, Queensland Government, www.transport.qld.gov.au.

Queensland Transport, **Shaping Up: Shaping Urban Communities to support public transport, cycling and walking in Queensland**, Queensland Government, www.transport.qld.gov.au.

Queensland Transport and State Development, Tourism, Racing and Fair Trading (2002) **Queensland Commercial and Tourism Aviation Plan and Queensland Airports and Regulated Air Transport Plan in Queensland Aviation Strategy**, Queensland Government, www.transport.qld.gov.au.

Sinclair Knight Merz (2002) **Southern Cairns Integrated Land Use and Transport Study (SCILUT)**. Unpublished document.

Sinclair Knight Merz, WS Cummings Economic Research Services (1999) **Peninsula District Freight Study**. Unpublished document.

Smith, R. J., (2008) **Riparian and Wetland Areas on Cane Farms**. Smartcane Best Management Practice Booklet produced by WetlandCare Australia.

State Development and Innovation, Department of Primary Industries and Fisheries (2004) **Sustainable Land-Based Aquaculture Policy**. Queensland Government

State Development and Tourism Queensland (2002) **Queensland Cruise Shipping Plan**, www.tq.com.au/special-interests/cruise-shipping/plans-&-strategies/plans-&-strategies_home.cfm, accessed 29/01/2008.

Steering Committee of the Cairns Mulgrave Regional Transport Study (1993) **Cairns Mulgrave Regional Transport Study**. Unpublished document.

Tablelands Futures Corporation (2007), **Atherton Tablelands, Cairns Highlands Investment Environment, Tropical Northern Australia**, May 2007.

Timber Queensland (in preparation) **Queensland Plantation Strategy**.

Tourism Queensland (2002) **Queensland Ecotourism Plan 2003—2008**. Tourism Queensland, Brisbane. 46 pp.

Tourism Queensland (2005) **Tropical North Queensland Destination Management Plan**. 70 pp.

Tourism Queensland (2006), **Queensland Tourism Strategy—November 2006**. Queensland Government.

Treasury (2000), **Guidelines for Financial and Economic Evaluation of New Water Infrastructure in Queensland**. Queensland Government, September 2002.

Weston, S. and Goosem, N. (2004) **Sustaining the Wet Tropics, Volume 2A Condition Report: Biodiversity Conservation**. FNQ NRM Ltd, Innisfail.

Wet Tropics Management Authority (1998) **Wet Tropics Management Plan**. Queensland Government, Cairns.

Wet Tropics Management Authority (2000) **Wet Tropics Nature Based Tourism Strategy: A Strategy for the Development and Management of Nature Based Tourism**. Queensland Government, Cairns. 74 pp.

Wet Tropics Management Authority (2001) **Wet Tropics Walking Strategy**. Queensland Government, Cairns. 59 pp.

Wet Tropics Management Authority (2004) **Wet Tropics Conservation Strategy**. Queensland Government, Cairns. 108 pp.

Wet Tropics Management Authority (2005) **Wet Tropics of Queensland World Heritage Area Regional Agreement**. Queensland Government, Cairns. 52 pp.

Working Group on Climate Change and Water (2008) WATER–**Report to Council of Australian Governments**, March 2008.

Abbreviations

AMCORD . . . . Australian Model Code for Residential Development
ATSIP . . . . . Aboriginal and Torres Strait Islander Policy
CBD . . . . . Central Business District
CPA . . . . . Cairns Port Authority
CPTED . . . . . Crime Prevention Through Environmental Design
CRC . . . . . Cooperative Research Centres Program
DCILGPS . . . . . Department of Communities and Information, Local Government, Planning and Sport
DIP . . . . . Department of Infrastructure and Planning
DME . . . . . Department of Mines and Energy
DMR . . . . . Department of Main Roads
DOGIT . . . . . Deed of Grant in Trust
DPI . . . . . Department of Primary Industries
DPI&F . . . . . Department of Primary Industries and Fisheries
DRO . . . . . Desired regional outcome
EPA . . . . . Environmental Protection Agency
EPBC . . . . . Environment Protection and Biodiversity Conservation Act, 1999
EPP . . . . . Environmental Protection Policy 1997
FEV . . . . . Fuel efficient vehicle
FNQ . . . . . Far North Queensland
FNQRCC . . . . . FNQ Regional Coordination Committee
FNQROC . . . . . FNQ Regional Organisation of Councils
FNQ2010 . . . . Far North Queensland Regional Plan 2000
GBR . . . . . Great Barrier Reef
HEV . . . . . High ecological value
ICT . . . . . Information Communication Technology
IDAS . . . . . Integrated Development Assessment System
ILUA . . . . . Indigenous Land Use Agreement
IPA . . . . . Integrated Planning Act 1997
JCU . . . . . James Cook University
KRA . . . . . Key Resource Area
LGA . . . . . Local Government Area
MPA . . . . . Master Planned Area
NRM . . . . . Natural resource management
NRW . . . . . Department of Natural Resources and Water
RLA . . . . . Rural living area
RLRPA . . . . . Regional landscape and rural production area
SEQ . . . . . South East Queensland
SCILUTS . . . . . Southern Cairns Integrated Land Use and Transport Study
SPP . . . . . State Planning Policy
TAFE . . . . . Technical And Further Education
TOC . . . . . Transit Oriented Community
UF . . . . . Urban footprint
WQO . . . . . Water quality objectives
WTWHA . . . . . Wet Tropics World Heritage Area
WTMA . . . . . Wet Tropics Management Authority

Glossary

Agriculture: production of food, fibre and timber, including grazing, cropping, horticulture and forestry.

Aligned strategies: strategies designed to achieve the desired regional outcomes through planning mechanisms that are not directly land use focused. Aligned strategies may include natural resource management plans, tourism and economic strategies, health delivery models, etc.

Assessable development: development specified in schedule 8, part 1 of the *Integrated Planning Act 1997*, or for a planning scheme area, development that is declared under the local planning scheme to be assessable development

Biodiversity: 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 a part.

Bioregion: The primary level of land classification in Queensland based on regional geology and climate, as well as major biota.

Broadhectare study: a study assessing future land supply by measuring available land stocks against growth trends.

Brownfield: areas of land previously used for industrial or other purposes available to be redeveloped for alternative purposes.

Buffer zone: an area adjacent to a waterway or wetland in which development, other than for required community infrastructure, does not occur in order to sustain and manage water quality of that waterway or wetland. Buffer zones do not occur within waterway envelopes.

Cadastre: public register of spatially represented separate properties.

Climate change: a change of climate attributed directly or indirectly to human activity which alters the composition of the global atmosphere, and is in addition to natural climate variability observed over comparable time periods.

Concurrence agency: an entity prescribed under the *Integrated Planning Act 1997* as a referral agency with concurrence powers for a development application made under the Integrated Development Assessment System.

Conservation: the protection and maintenance of nature while allowing for its ecologically sustainable use.

Contaminant: has the meaning under s11 of the *Environmental Protection Act 1994*. Schedule 8 of the *Environmental Protection Regulation 2008* lists prescribed water contaminants.

Critical habitat: habitat essential for the conservation of a protected wildlife population, or community of native wildlife, regardless of whether special management considerations and protection are required.

Cultural heritage: a place or object with aesthetic, architectural, historical, scientific, social or technological significance to present, past or future generations.

Cultural resource: place or object with anthropological, archaeological, historical, scientific, spiritual, visual or sociological significance or value, including such significance or value under Aboriginal tradition or Torres Strait Island custom.

Deed of Grant in Trust (DOGIT): a type of land tenure issued under the *Land Act 1994* that is non-freehold and granted for a particular purpose, commonly for Aboriginal communities where the Aboriginal Shire Council is the trustee.

Desired regional outcome (DRO): regional policies set out the desired regional outcomes, principles and policies to address growth management in a region. The policies guide state and local government planning processes and decision making. Local government planning schemes must be consistent with the intent of the desired regional outcomes, objectives and policies.

Development: building, plumbing or drainage, or operational work, lot reconfiguring, or material change of use of premises.

Draft regulatory provisions: Draft State Planning Regulatory Provisions (Regional Plans) May 2008.

Dwelling yield: the number of dwellings or lots per hectare.

Ecological sustainability: A balance that integrates protection of ecological processes and natural systems at local, regional, state and wider levels; economic development; and maintenance of the cultural, economic, physical and social wellbeing of people and communities.

Ecosystem: a community of organisms interacting with one another and the environment they live in.

Ecosystem services: services provided by the natural environment essential for human survival.

Ecotourism: nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable.

Environmental offset: an action taken to counterbalance unavoidable, negative environmental impacts that result from an activity or development. An offset may be located within or outside the geographic site of the impact. Environmental offsets are only applicable when the impacts cannot be avoided or minimised, and if all other Government environmental standards have been met *(Queensland Government Environmental Offsets Policy July 2008)*

Environmental values: (a) a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or (b) another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Existing urban area: area currently developed for urban purposes, area with current approvals to be developed for urban purposes or area identified to be developed for urban purposes in currently approved planning instruments.

FNQ region: The five local government areas within the FNQ region—the regional councils of Cairns, Tablelands and Cassowary Coast, and the Aboriginal Councils of Yarrabah and Wujal Wujal—and the waters adjacent to these areas (see map 2).

FNQ Regulatory Provisions: Far North Queensland Regional Plan 2009–2031 State Planning Regulatory Provisions, Far North Queensland State Planning Regulatory Provisions 2009 (short title), or regulatory provisions.

Freight Efficient Vehicle (FEV): a motor vehicle with trailers that is capable of moving freight efficiently. Typically this involves exceeding the usual size limits for Queensland roads in order to increase the payload. For example, a 53.5m road train.

Good quality agricultural land: land which is suitable for growing four or more crops sustainably as determined by land suitability survey that matches crop needs to soil landscape and climate characteristics (i.e. soil landscape suitability classes 1–3 for four or more crops).

Greenfield: areas of undeveloped land in the urban footprint areas suitable for urban development.

Greywater: wastewater from showers, laundry, and kitchen sinks, excluding toilet waste.

High Ecological values (HEV): Systems that are effectively unmodified or other highly valued systems. EPA has identified these areas as part of the ongoing roll out of Schedule 1 of the Environmental Protection (Water) Policy. The maps are available by contacting the EPA.

Implementation action: action which serves to implement part or parts of the FNQ Regional Plan.

Indigenous cultural heritage: 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 (ILUA): voluntary agreement between a native title group and others about the use and management of land and waters.

Infill development: new development that occurs within established urban areas where the site or area is either vacant or has previously been used for another urban purpose. The scale of development can range from the creation of one additional residential lot to a major mixed-use redevelopment.

Integrated Development Assessment System (IDAS): the system through which development applications are assessed by the relevant assessment manager. Established under Chapter 3 of the *Integrated Planning Act 1997*.

Inter-urban breaks: non-urban land areas that separate or surround urban villages, towns and metropolitan areas.

Intergenerational equity: the present generation's responsibility to ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.

Intra-urban breaks: non-urban land areas or green space within urban footprint areas which separate suburbs or groups of suburbs.

Key performance indicator: broad measure of sustainability used to monitor the progress of the implementation of the regional plan.

Key Resource Areas (KRA): locations across Queensland that have been found to contain important extractive materials such as sand, gravel and rock resource of State or regional significance which has been included in the State Planning Policy: Protection of Extractive Resources (SPP) and it will be included in the local government planning scheme when the planning scheme is made or amended.

KRAs have three parts to them:

(1) The resource/processing area covers the site where the sand or rock resource occurs and where a processing plant is or could be located.

(2) The land around the resource/processing area, which is called a separation area.

(3) A transport route, which is used to transport the raw quarry products from where they have been extracted out to a rail link or the nearest and most suitable State controlled road. This transport route also has a separation area.

Land use policies: policies with a land use planning focus which can be delivered through a range of IPA planning tools (e.g. planning schemes, priority infrastructure plans, the Integrated Development Assessment System).

Land use study: study establishing a land use pattern and identifying land use categories.

Landholder: landowner, land manager, person or group of people with an interest in the planning area through special lease, mining claim, occupational licence, occupation permit, exploration permit, stock grazing permit, pastoral holding, permit to occupy, and trustees of land set aside for public purposes.

Landscape character: distinct pattern or combination of landscape elements that occurs consistently in parts of the landscape and often conveys a characteristic sense of place.

Local activity centre: a neighbourhood or other local centre identified in the local government planning scheme but not necessarily in the regional plan.

Major Transport Corridor: a corridor that either provides a regionally significant function or carries high levels of people and/freight regularly. For example, access roads to ports and key resource areas, railway lines, roads that will carry in excess of 15 000 vehicles per day in the foreseeable future and rapid transit corridors.

Master Planned Area: has the meaning under IPA.

Master planning: an integrated planning process used to identify the preferred future spatial structure and land use planning intent of an area. The term is sometimes used by developers, but has particular meaning in relation to declared Master Planned Areas under IPA.

Mixed use development: development within a blend of retail, commercial, government, community, cultural, education, health, sport and recreation, entertainment and other leisure activities within or in close proximity to medium or high density residential development.

Mode share: mode share, or mode split, is a traffic / transport term which describes the percentage of travellers using a particular type of transportation. Transport modes include private motor car, freight vehicles, public transport, cycling and rail.

Mount Peter: The area between Edmonton and Gordonvale, generally west of the Bruce Highway, but also including the area immediately to the east of Edmonton, identified to accommodate significant new growth for Cairns and the region (part of the southern growth corridor extending from Woree to Gordonvale). Mount Peter has been declared a Master Planned Area under IPA.

Natural resources: soil, vegetation, plants, animals, minerals, air and water that are utilised for economic benefit or community wellbeing.

Nature-based tourist attraction: a tourist attraction established to provide managed visitor access for the purpose of promoting an understanding of ecological values of the locality.

Net residential density: measure of housing density expressed as dwellings or lots per hectare, calculated by adding the area of residential lots and the area of local roads and parks, and then dividing by the number of dwellings or residential lots created.

No net loss: habitat losses are offset into areas with equal or higher biodiversity values.

Overriding public interest: applies where the long-term social benefits of any modification outweigh the loss of natural wetland benefits, and no other site is available. Determining the existence of 'overriding public interest' is best achieved through a land-use planning framework and an appropriate impact assessment process.

Passive outdoor recreation: the use of land for outdoor recreation but excluding motorised activities, organised racing (e.g. for cars, motor cycles, horses, dogs), showground, theme park, pony club, and commercial sports ground.

Pattern of development: urban settlement pattern to accommodate growth. Pest species: plant and animal species that have established in areas outside their naturally occurring distributions.

Planning Minister: Minister administering section 2.5A of the *Integrated Planning Act 1997*. Regional target: particular aim or goal to be achieved by a particular time.

Planning scheme: planning instrument made by a local government under division 3.8 of the *Integrated Planning Act 1997*.

Population density: number of persons per square kilometre.

Population projection: population prediction that is the most likely outcome over the 20 year timeframe of the plan.

Potable water: water suitable for human consumption.

Precautionary principle: where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

Preferred pattern of development: preferred urban settlement pattern to accommodate growth.

Protected area: protected areas including national parks, conservation parks, resources reserves, nature refuges, coordinated conservation areas, wilderness areas, World Heritage management areas and international agreement areas.

Protected wildlife: presumed extinct, endangered, vulnerable, rare or common wildlife.

Regional activity centre: a centre or proposed centre identified in the FNQ regional activity centre network. These centres support a concentration of activity, including higher density living, business, employment, research, education and services.

Regional Coordination Committee: committee established by the Planning Minister under section 2.5A.3 of the *Integrated Planning Act 1997* to advise the Queensland Government on the development and implementation of the regional plan.

Regional ecosystem: vegetation communities consistently associated with a particular combination of geology, landform and soil.

Regional issue: an issue with regional significance.

Regional landscape and rural production area: the greatest area of land in FNQ. It includes land with one or more of the following values:

- areas of high ecological significance
- regional ecosystems that are endangered or of concern
- Wet Tropics World Heritage area and protected area tenures
- cassowary, mahogany glider and other rare and endangered species
- coastal beaches and wetlands
- good quality agricultural land and strategically important agricultural land
- natural economic resources including extractive resources, native forests and forestry plantations
- water catchment and groundwater areas
- outdoor recreation areas and open space
- land forming strategic and regionally significant inter-urban breaks.

Regional plan: the Far North Queensland Regional Plan 2009-2031, developed in accordance with section 2.5A of the *Integrated Planning Act 1997*.

Regional Planning Advisory Committee: committee established by the Planning Minister under section 2.5.2 of the *Integrated Planning Act 1997* to advise the Queensland Government on the development and implementation of the regional plan.

Regional plan policy: set out the desired regional outcomes, objectives and policies to address regional management in FNQ. The policies guide state and local government planning processes and decision making. Local government planning schemes must be consistent with the intent of the desired regional outcomes, principles and policies.

Regulatory provisions: see FNQ Regulatory Provisions.

Regulatory maps: set of maps referred to in schedule 1 of the FNQ Regulatory Provisions, identifying land categories defined under division 1 of the regulatory provisions.

Regulatory provisions: regulatory provisions for the FNQ region made under section 2.5C of the *Integrated Planning Act 1997*.

Rural living area (RLA): locations currently designated for rural residential development in local government planning schemes where further rural residential development is permitted under the regional plan.

Required community infrastructure: necessary community services (such as telecommunications, power, and water supply) and desirable community infrastructure (such as bridges, pathways and cycle-ways) that are required by state or local government planning instruments for new urban developments and cannot be feasibly located outside the buffer zone or waterway envelope.

Residential development: development for a residential purpose at a scale greater than a single dwelling on an existing lot and includes rural residential development, relocatable home park, retirement village and a private residence. It does not include short-term accommodation.

Riparian: banks of land adjacent to a waterway or wetland which contribute to its ecological balance, preservation and continuation.

Rural lifestyle: land that is zoned rural in a local government planning scheme but has a lot size of 0.25– 5 hectares and has the potential to be used a lifestyle block.

Rural precinct: land designated by the Planning Minister as a rural precinct.

Rural residential: land that is zoned for a rural residential purpose in a local government planning scheme.

Rural residential purposes: residential purposes involving single dwellings on lots greater than 2500 square metres.

Rural village: location named in accordance with the *Place Names Act 1994* that comprises residential dwellings, some urban activity and is not located within an urban footprint area.

Scenic amenity: landforms and seascapes creating the region's visual imagery including (but not limited to) mountain ranges, coastal escarpments, beaches, rivers, valleys, agricultural land, creeks, rainforests, wetlands, estuaries and islands.

Self-containment: the proportion of local employed workforce that actually work within the same area. This does not include workers from outside the local area or people from the local area who work elsewhere. A community with an even jobs-residents balance is generally considered to be self-contained and self-reliant.

Self-sufficiency: the proportion of the local employed workforce that could potentially find employment within the local area. This is the numerical balance between the number of jobs and the number of people in a geographically defined community. It does not consider where people actually do work.

Sensitive land uses: residential areas, health, education and childcare facilities and areas of high ecological significance.

Settlement pattern: spatial distribution of urban and rural land use, employment, population, centres and infrastructure.

Significant project: project declared under section 26 of the *State Development and Public Works Organisation Act 1971*.

Southern growth corridor: The area from Woree to Edmonton to Gordonvale, west of the highway, was identified in the previous regional plan as being the preferred area for growth. The area from Woree to Edmonton is now largely developed.

Structure plan: has the meaning under IPA.

Tourist activity: an activity that is reliant on the tourist trade. It includes short-term accommodation and incidental commercial and retail activity.

Tourist attraction: a natural or man-made feature that is the primary focus of a tourist activity and may include a walking track, board walk, cable car, waterfall or water feature. It does not include associated short-term accommodation, commercial or retail activity.

Tourist development: a generic term used to describe development for the purpose of providing for tourist activities and includes tourist attractions.

Traditional owners: Aboriginal people particularly concerned with land if they are members of a group that has a particular connection with land under Aboriginal tradition.

Transit: public transport, for example, bus, rail or ferry services.

Transit oriented communities: mixed use residential and commercial areas, designed to maximise the efficient use of land through high levels of access to public transport.

Universal housing: residential dwellings with design and structural capability to accommodate changes needed for people with different abilities

Urban activity: residential development, industrial, retail, commercial, sporting, recreation or community purpose, normally found in a city or town.

Urban development: a general term including residential, industrial, retail, commercial, sporting, indoor recreation, short term accommodation, community activities and a range of other urban land uses. It does not include rural land uses such as agriculture and horticulture.

Urban footprint: land predominately allocated to provide for the region's urban development needs to 2031. The area includes land to accommodate the full range of normal urban uses, such as housing, industry, business, infrastructure, community facilities, recreation and urban open spaces. It may also include some rural residential areas next to urban areas and well located near urban services and facilities. The areas may also contain constrained land, such as wetlands, floodplains, steep hill slopes or areas of high ecological significance.

Urban purposes: purposes 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.

Vision: the community's long-term aspirations for the region.

Water quality objectives (WQOs): are the numerical concentration limits, mass or volume limits per unit of time or narrative statements of indicators established for waters to enhance or protect the environmental values for those waters. WQOs may be long term goals for water quality management, depending on the existing condition. WQOs are defined in Schedule 1 of the EPP Water 1997 for some catchments and the Queensland Water Quality Guidelines 2006 defines WQOs for those areas not in Schedule 1 of the EPP Water 1997.

Water resource plan: plan approved under section 50(2) of the *Water Act 2000*.

Waste water: means a liquid waste, and includes contaminated stormwater

Waterway: a natural drainage feature along which surface water flows, including the tidal and non-tidal reaches of rivers, creeks and streams, and excluding minor drainage features such as gullies and spoon-drains. A waterway would be a feature that is assessed using a stream ordering classification system as being order 1 or larger.

Waterway envelope: a mapped area that encompasses the waterway and strips of land adjoining each waterway bank for the purposes of this policy. Maps of waterway envelopes for the FNQ Regional Plan area will be prepared by NRW for Master Plan Areas and for planning schemes when a scheme is made or reviewed.

Wetland: areas of permanent or periodic/ intermittent inundation, whether natural or artificial, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6m. For the purposes of the regional plan, wetlands do not include waterways as defined above.

Wildlife corridor: corridors of vegetation linking areas and allowing wildlife movement throughout habitats.

World Heritage area: sites of outstanding universal natural or cultural significance included on the World Heritage List.

Zoned land: land allocated or identified as a zone, domain or area in a planning scheme, including a strategic plan in a transitional planning scheme.

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- FNQ State Agency Champions Network
- FNQ Regional Managers Coordination Network
- Regional stakeholder groups
- Local government
- State government
- Commonwealth government
- Staff from the Department of Infrastructure and Planning

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- Mr Jason O'Brien—Member for Cook
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- Cr Val Schier—Mayor of Cairns Regional Council
- Cr Bill Shannon—Mayor of Cassowary Coast Regional Council
- Cr Percy Neal—Mayor of Yarrabah Aboriginal Shire Council
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Queensland Government departments:

- Department of Communities, Disability Services, Aboriginal and Torres Strait Islander Partnerships, Multicultural Affairs, Seniors and Youth
- Department of Education, Training and the Arts
- Department of Emergency Services
- Department of Local Government, Sport and Recreation
- Department of Main Roads
- Department of Mines and Energy
- Department of Natural Resources and Water
- Department of the Premier and Cabinet
- Department of Primary Industries and Fisheries
- Department of Public Works, Housing and Information and Communication Technology
- Department of Trade, Employment and Industrial Relations
- Department of Tourism, Regional Development and Industry
- Environmental Protection Authority
- Queensland Health
- Queensland Police Service
- Queensland Transport
- Queensland Treasury

Local government:

- Cairns Regional Council
- Tablelands Regional Council
- Cassowary Coast Regional Council
- Wujal Wujal Aboriginal Shire Council
- Yarrabah Aboriginal Shire Council

Commonwealth departments:

- Department of Environment, Water and the Arts
- Great Barrier Reef Marine Park Authority
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Images courtesy of David Campbell, FNQ Planning Team, Cairns Regional Council, Queensland Transport, News Ltd—Cairns Post and Innisfail Advocate, Department of Main Roads, Wet Tropics Management Authority, Shaun Sims—Capture Advertising, Steve McDermott—Terrain NRM Pty Ltd, Powerlink and Ports Corporation of Queensland.

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