



Northern
Territory
Government

Greater Darwin Region Land Use Plan Towards 2030

Consultation Paper

**growing the
Territory**

A Territory Government initiative

Greater Darwin Region Land Use Plan Towards 2030 Consultation Paper

CONSULTATION

The Greater Darwin Region Land Use Plan – Towards 2030 Consultation Paper is placed on public exhibition to seek community input and support.

Minister for Lands and Planning

A message from the Hon Gerry McCarthy MLA

The Greater Darwin Region is unlike anywhere else in the country, and the Territory Government is planning for its future with the *Greater Darwin Region Land Use Plan – Towards 2030*.

The region's economy and population are growing.

Young Territorians are taking advantage of the job opportunities on offer and raising their families here, more people are moving from interstate to enjoy our lifestyle, and older Territorians are choosing to retire here.

The economic future is bright, supported by Government's record infrastructure program, and its commitment to securing major projects like INPEX, a Marine Supply Base and new mines.

The Territory 2030 strategic plan sets a roadmap for the future, including targets for affordable housing and the community's desire for new and sustainable urban design.

The Greater Darwin Region Land Use Plan – Towards 2030 provides the framework for reaching these targets, using sound economic forecasts to deliver sustainable residential development, drive economic growth and maintain our tropical lifestyle.

It outlines strategies to deliver a range of sustainable residential options, including the release of new land, infill development in existing areas and rural lifestyles.

It forecasts the release and development of commercial and industrial land to support and grow the region's economic potential.

At the heart of the Land Use Plan is the recognition by the Government and the community of the importance of Darwin Harbour and the region's waterways and environs.

The release of this consultation paper is a key step in the finalisation of a Land Use Plan that will guide the development of the region to 2025.

I encourage all Territorians to have their say so that Government and the community, working together, can deliver the best outcome for the region.

HON GERRY McCARTHY MLA





Contents

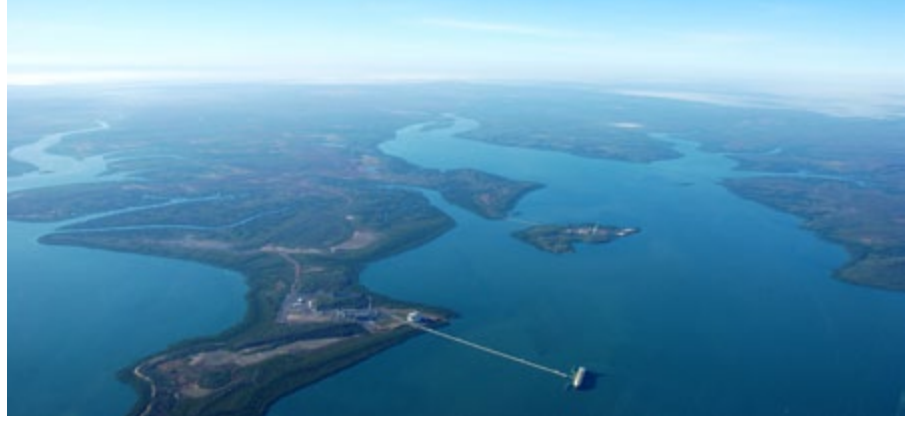
INTRODUCTION	Introduction 6 Our unique Region 7 Shaping the future for Greater Darwin Region 8
THE LAND USE PLAN IN OVERVIEW	The Land Use Plan in Overview 10 Planning for growth 11 Delivering ‘Territory 2030’ 12 The Greater Darwin Region Land Use Plan – Towards 2030 15 Planning for growth 20 Shaping the future 20
SECTION 01 THE LAND USE PLAN’S ROLE AND FUNCTION	The Land Use Plan’s role and function 22 What is a Regional Land Use Plan? Why do we need one? 23 The role of the Greater Darwin Region Land Use Plan – Towards 2030 24 The Land Use Plan’s relationship to key Territory government policies 25 Better urban design 26
SECTION 02 CONTEXT	Context 28 A rapidly growing population 29 Population growth scenarios towards 2030 30 A changing context 31 The Region’s economic profile 2011 32 A strategic approach to the future 33 Strategic directions for the Region 34
SECTION 03 POLICIES AND ACTIONS	Policies and actions 36 Targets of the Land Use Plan 37 Residential growth 38 Land for industry 47 Retail and bulky goods land supply 50 Commercial floor space 53 Infrastructure planning 54 Power, water and sewerage infrastructure 55 Social infrastructure 57 Funding infrastructure 58 Climate change 59 Natural heritage and biodiversity 60 A balanced housing market in the Region 61 Conclusion 62
SECTION 04 IMPLEMENTATION	Implementation 64 Northern Territory Government co-ordination 66 Partnering with local government 66 Land supply, monitoring and review 67 Review of planning instruments and other actions 68
APPENDICES	Appendix A Council of Australian Governments (COAG) criteria 72 Appendix B Industrial Land Supply by Area 73 Appendix C Investment in infrastructure forecast 74 Appendix D Background Data 78 Glossary of terms 81



Northern
Territory
Government

Introduction

The Greater Darwin Region Land Use Plan – Towards 2030 Consultation Paper takes Greater Darwin on a pathway to planned growth.



Our Unique Region

The Greater Darwin Region offers a lifestyle unlike any other in Australia. It is set apart by its monsoonal tropical climate, its remoteness from other state capitals, and its competitive proximity to the thriving cities of South East Asia.

The Region is centred around the beautiful Darwin Harbour and its catchment areas, where ecosystems are the centrepiece of our enviable lifestyle.

The Region has, for thousands of years, been the home to the Larrakia people. From the time of the first European settlement at Fort Hill in 1869, the Larrakia have been, and remain, an integral part of our community.

The Region retains spiritual and cultural significance for the Larrakia and other Indigenous groups. The term “Larrakia” refers to the language, the land and the people who remain the traditional custodians of the land and waters of the Greater Darwin Region.

More than 100 cultural backgrounds are represented in the Territory community today.

Since self-government the Territory has experienced significant growth and change, usually associated with the onset of major projects.

The military build up in World War II, rebuilding after the devastation of Cyclone Tracy, and the significant relocation of Army personnel and equipment

to Darwin in the 1990s all brought a boost in population and new economic opportunities for local industry.

The completion of the Alice Springs to Darwin railway in 2003 linked the Territory to the nation’s rail network, delivering new freight opportunities.

Arguably one of the most significant economic drivers in the Territory’s history was the commissioning of the \$1.75 billion ConocoPhillips LNG plant at Wickham Point in 2006.

The construction of the plant generated thousands of jobs and delivered a new industry to the Territory, confirming Darwin as an international gas hub.

In 2009, the Territory Government reached an agreement with the Northern Land Council and Traditional Owners regarding the Kenbi Land Claim. The agreement opened Cox Peninsula for potential development by, and for the benefit of, the Larrakia people.

The Greater Darwin Region is experiencing a period of high economic growth that is forecast to continue, fuelled by expansion of the defence, mining, gas and energy and service sectors.

The Territory Government is pursuing major projects that will sustain the economy into the future, including the INPEX Ichthys gas project, and the development of a Marine Supply Base and a Defence Support Hub.

The Government is delivering a record \$1.8 billion infrastructure program and supporting the release of industrial land.

Significant Government measures are also in place to meet demand for land and housing options including:

- > allocating 15% of all residential land release to affordable and social housing;
- > creation of an Affordable Rental Housing Company;
- > the development of Palmerston East – Johnston, Bellamack, Zuccoli and Mitchell;
- > supporting private residential developments such as Muirhead and the Palmerston Charles Darwin University Campus; and
- > planning for the new city of Weddell.

This work is not being done at the expense of the environment. The Government has established a Darwin Harbour Management Strategy, protected Glyde Point from heavy industry, and rejected damming the Elizabeth River. Government has also moved to introduce 5-star energy ratings for houses and 3.5 star ratings for units.

The Territory Government wants to harness economic and growth opportunities for the future benefit of Territorians, while protecting the environment and Territory lifestyle.

The Greater Darwin Region Land Use Plan – Towards 2030 Consultation Paper (the Land Use Plan) will be a central plank of Government achieving this aim.

Shaping the Future for the Greater Darwin Region

The Territory has the challenge and opportunity to develop the Region for the 21st century, with a balance of economic and population growth and social and environmental benefit. The Land Use Plan includes:

- > continuing the evolution of the Greater Darwin Region into a thriving, multicultural and modern capital city that is the centre of administration, tourism and retail;
- > consolidating Palmerston as a city of choice for young families;
- > developing distinct rural villages within the Litchfield area centring around a rural lifestyle;
- > more inter-connected, lively, urban and rural communities with distinct character;
- > providing land to meet present and future housing needs, delivering long term balance to the housing market and promoting affordability;
- > providing suitable land for our industries to grow;
- > creating a new tropical, sustainable and liveable city of Weddell to accommodate the growth in the Region;
- > continuing to protect Darwin Harbour and its catchments; and
- > supporting the future potential private development of the northern coast of Cox Peninsula adjacent to Darwin.

Vacant and underutilised land will be developed, and targeted redevelopment will take place on Multiple Dwelling and Medium Residential zoned land.

A wide variety of housing options will be developed, including town houses, duplexes and triplexes to meet increased demand from single-person homes and older Territorians.

Palmerston's development as a city of choice for families is being supported by the development of new suburbs in Palmerston East, and investment in key community and social infrastructure such as schools, sporting, religious and recreational facilities.

The Palmerston CBD will continue to grow into a modern city centre with residential development, retail, offices, an international hotel and residential apartments.

The rural areas of Litchfield will develop around villages with a district centre surrounded by larger areas for rural living. This will see block sizes reducing in and around the heart of the villages but retaining the larger rural residential lots outside of those areas.

At the centre of the Territory Government's land release program is a commitment to protecting the health of the Harbour, including:

- > maintaining a healthy environment;
- > supporting recreational use and enjoyment of the environment;
- > ensuring development is implemented in an ecologically sustainable manner;
- > protecting cultural values and heritage; and
- > fostering community awareness and stewardship of the Darwin Harbour Region.

The Land Use Plan has sustainability as a core focus, balancing economic and social growth with environmental needs.

The Territory has the challenge and opportunity to develop the Region for the 21st century.





Northern
Territory
Government

The Land Use Plan in Overview

The vision for the Region is for a series of more compact, interconnected, lively urban and rural communities.



Planning for growth

The Greater Darwin Region Land Use Plan – Towards 2030 Consultation Paper (the Land Use Plan) supports the Territory Government's aim to build a prosperous and sustainable future for the Territory.

The Land Use Plan provides a roadmap for growth in the Darwin, Palmerston and Litchfield areas, and seeks input from Territorians on its strategies and initiatives for a strong future for the Region.

More people are moving to the Territory to enjoy the opportunities and lifestyle on offer. Access Economics forecasts average annual population growth in the Territory of 1.8% over the next five years, compared to a national average of 1.6%. Palmerston is one of the fastest growing cities in the country.

It is expected an extra 53,000 to 70,000 people will call the Greater Darwin Region home by 2025.

The multicultural city of Darwin is the Region's centre of administration, tourism and retail. Palmerston is the city of choice for young families. The Litchfield area offers a set of distinct villages for work and leisure opportunities, while retaining the surrounding rural lifestyle.

The Greater Darwin Region is an important education centre and Defence centre. It is a cultural hub that reflects the thousands of years of occupation by Indigenous Australians and the more recent waves of settlement.

The average age of the Region's population is 32 years.

Younger people are staying to enjoy the broader employment opportunities and lifestyle on offer. Older people are choosing to retire here, and families are evolving into smaller units.

There is a need to respond to the particular housing aspirations and needs of our diverse population.

Climate change is bringing more extreme weather patterns which will impact on our cities and on how we use our resources and design our suburbs.

It is essential for Government and the community to understand how growth is likely to affect the Region, and shape the planning, design and building of our cities, towns and neighbourhoods to make them sustainable and prosperous.

The Land Use Plan will focus planning for the Region toward 2030, by assessing and responding to the challenges and opportunities before us to deliver a sustainable, prosperous future.

Consultation with the community and feedback from Territorians about this Land Use Plan is important and will inform the development of the final Land Use Plan.

Delivering 'Territory 2030'

The Territory 2030 Strategic Plan (Territory 2030) was developed in consultation with the community and provides a road map for the Territory's future.

Territory 2030 sets targets for affordable housing, and outlines the desire for new and sustainable urban design. It seeks an enriched society and community life for Darwin's people and a strong and stable economy.

It foreshadows the growth of the Greater Darwin Region as an international hub for exports, education, health services, tourism and operations and maintenance.

Territory 2030 sets targets to reduce use of water and electricity, cut greenhouse gas emissions, reduce reliance on private motor vehicles and reduce the amount of waste we produce. It says that we will protect the unique natural environment centring on Darwin Harbour.

It envisages a community that successfully balances growth and the environment, with more community-centred urban design that allows Territorians to connect with their location, climate, people and sustainability.

The Greater Darwin Region Land Use Plan provides a framework for delivering on these Territory 2030 targets.

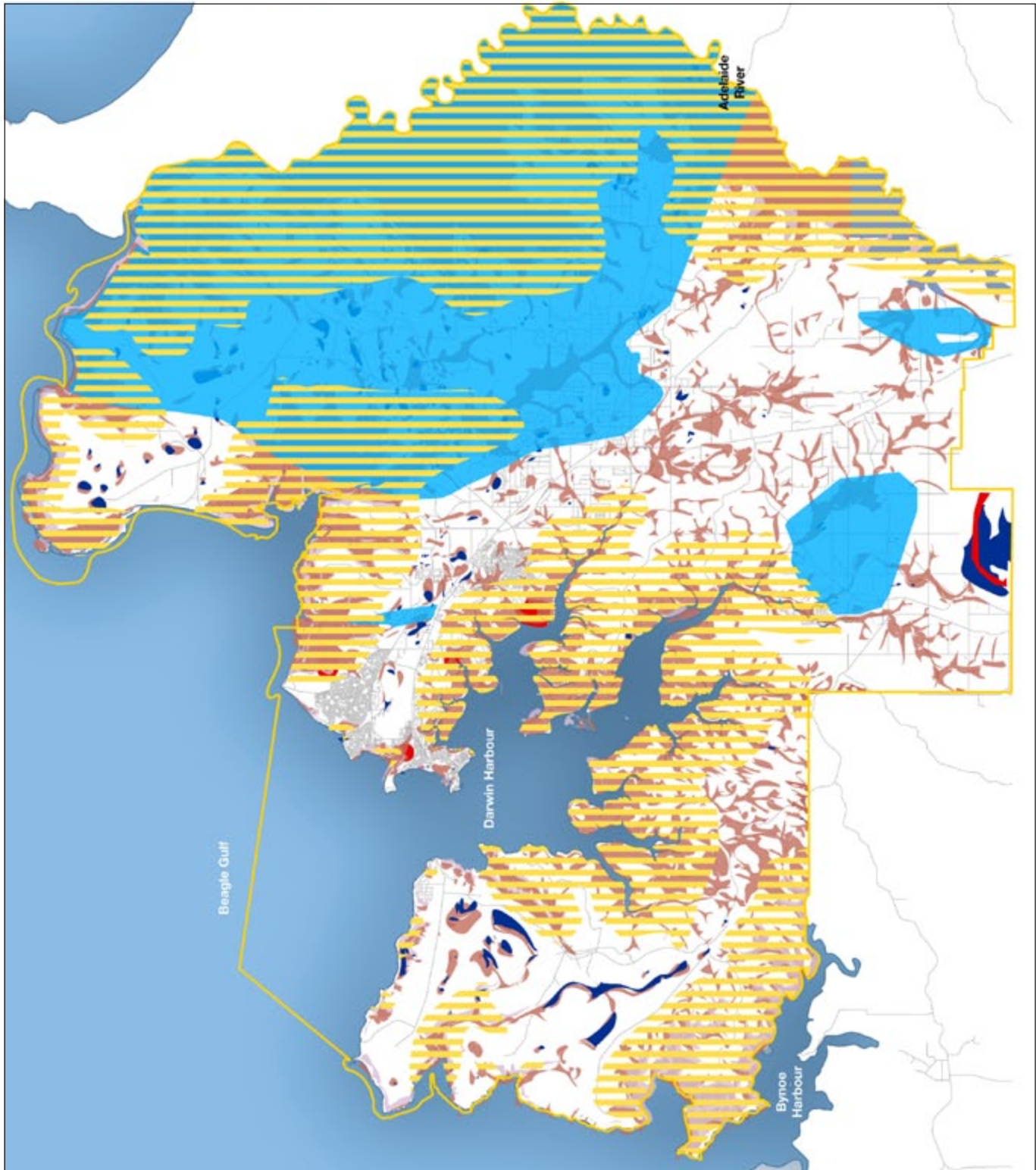
It delivers a range of population forecasts, and responds to the challenges of residential and industrial land supply, housing demand, sustainable urban design and energy efficiency.

It maps the need for long term infrastructure planning for roads, power, water, sewerage and telecommunications.

The Land Use Plan focuses on economic and social development, balanced with protecting the Territory's natural resources in a sustainable way.

Territory 2030 sets targets for affordable housing, and outlines the desire for new and sustainable urban design.





- Coastline
- Coastal Water
- Study Area
- Sewer plant buffering
- Areas affected by storm surge risk
- Areas affected by seasonal soil waterlogging or inundation for extended periods
- Wetlands and waterbodies
- 1:100 year flood
- Aquifer
- Biting insects including buffer area

Natural Landscape Elements



The Greater Darwin Region Land Use Plan – Towards 2030

The Greater Darwin Region Land Use Plan encompasses an area of approximately 419,500 hectares. It centres on Darwin Harbour and reaches to the Beagle Gulf in the North, Bynoe Harbour in the West, and Adelaide River in the East, and 20 kilometres inland from Darwin Harbour in the South.

The Region covers a wide spectrum of communities and environments, ranging from the Darwin CBD on the edge of the beautiful Darwin Harbour to the Malacca swamp on the Adelaide River, one of the Territory's wildest natural habitats.

The natural elements include areas affected by water logging and seasonal inundation, storm surge, natural wetlands, steeply sloping land, aquifers, soil and vegetation types, and biting insect breeding areas.

It covers recognised Larrakia sacred sites, other cultural and heritage sites, and parks and conservation reserves.

Airports, Department of Defence installations, and land identified for strategic industry and urban and rural communities are also included.

The Land Use Plan has been developed by mapping these natural elements and significant sites to identify priority areas for expanding existing communities, developing new population centres and optimum transport corridors, and areas to support industrial growth.

It provides the framework for Darwin to continue as the Region's administration, tourism and retail centre. It will be linked by a series of interconnected urban and rural communities each with their own distinct character and Territory lifestyles.

It provides the framework for Palmerston to continue to grow as the city of choice for families. The Litchfield area is planned to support a network of village centres.

The Land Use Plan also foreshadows establishment of Weddell as the next city in the Region. Work has begun on planning for this tropical, liveable and sustainable city with input from local, national and international experts.






The range of residential development across the Darwin, Palmerston and Litchfield Region will provide housing choices for Territorians in the CBD, suburbs and rural areas while retaining the Territory lifestyle.






Eight precincts within the Region are identified for potential growth to 2025:

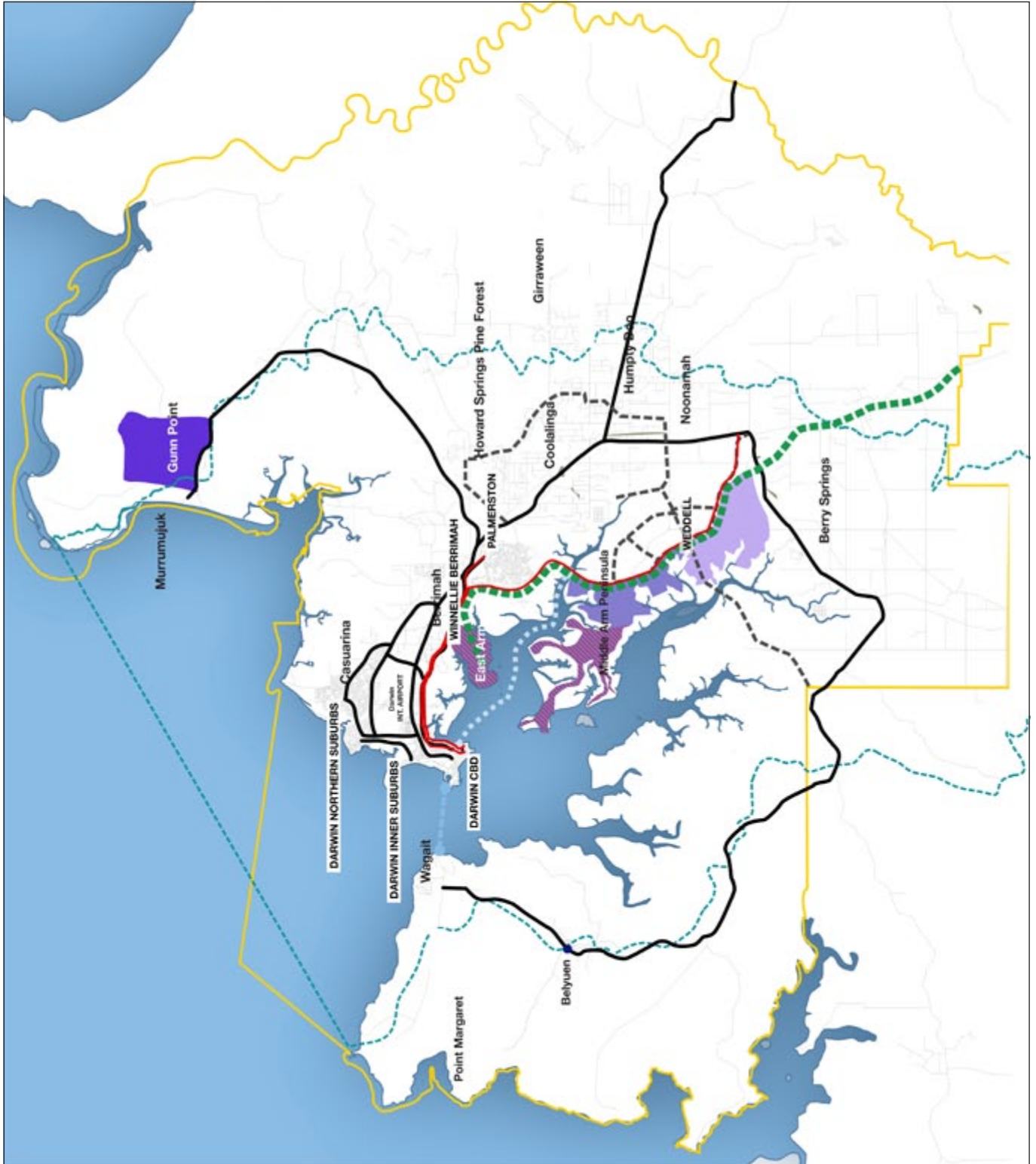
Darwin City Centre; Darwin Inner Suburbs; Darwin Northern Suburbs; Winnellie/Berrimah; Palmerston; Weddell; Litchfield; Cox Peninsula.



This is a snapshot of places that will contribute to accommodating residential and commercial growth.

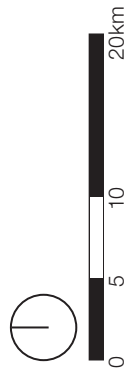
Area		Contribution to growth
<p>Darwin City Centre</p> <p>The existing CBD, Bayview and associated inner suburbs</p>		<p>Targeted infill and redevelopment will accommodate growth. Frances Bay, waterfront and key sites within the CBD are identified as places where higher density development can occur sustainably.</p> <p>The CBD has planning that allows building heights to 90 metres above ground level.</p>
<p>Darwin City – Inner Suburbs</p> <p>Cullen Bay, Fannie Bay, Stuart Park and The Gardens</p>		<p>There is potential for growth through continuing redevelopment, infill and some densification of medium density housing.</p>
<p>Darwin City – Northern Suburbs</p> <p>Including Casuarina</p>		<p>Development will occur by increased density in the area surrounding the Casuarina Shopping Centre and commercial area.</p> <p>There will be a mixture of Greenfield land releases, such as Muirhead, and infill development.</p> <p>Redevelopment of land for medium density housing will also be encouraged.</p>
<p>Winnellie/ Berrimah</p> <p>Berrimah Farm, Berrimah Prison Land and The Narrows.</p>		<p>Development and growth in this area will be a mixed use development of commercial, industrial and residential.</p> <p>Proposed redevelopment of Berrimah Farm and Berrimah Prison are examples of infill sites that could produce well located mixed residential and commercial development.</p>
<p>Palmerston</p>		<p>Residential development will continue in Palmerston, including the Palmerston East suburbs of Bellamack, Johnston, Zuccoli and Mitchell, and the Charles Darwin University campus site.</p> <p>The CBD will also be energised with targeted projects including the so-called ‘Super Block’. Residential development in the CBD will be promoted.</p>

Area		Contribution to growth
<p>Weddell</p>		<p>The new City of Weddell on Middle Arm Peninsula south of the Elizabeth River and associated future development areas around Noonamah will be the focus of new land release.</p> <p>Weddell is a Greenfield development site and is undergoing detailed master planning as a tropical, sustainable and liveable city, and a model for the future.</p>
<p>Litchfield</p> <p>Existing and planned development areas within the Litchfield local government area.</p>		<p>Development will occur in and around the identified rural villages district centres, namely Girraween, Pine Forest, Coolalinga, Fred's Pass, Virginia, Humpty Doo, Noonamah and Berry Springs.</p> <p>This will be mainly on infill sites with increased density in the heart of the centres.</p>
<p>Cox Peninsula</p> <p>Land at the northern end of Cox Peninsula.</p>		<p>This Greenfield site could be developed for urban residential and supporting community and commercial uses subject to the provision of essential services.</p> <p>Pending the settlement of the Kenbi land claim, the Cox Peninsula could be opened for private development for up to 10,000 people over the life of the Land Use Plan.</p>
<p>Darwin industrial options</p>		<p>Industrial land identified in the Land Use Plan includes East Arm and Middle Arm Peninsulas, and development of a Weddell industrial precinct, business park and commercial developments. The industrial land will cater for light, general and strategic industrial opportunities.</p> <p>Potential for future (beyond 15 years) industrial development at Gunn Point adjacent to the propose Murrumujuk area can be considered.</p>
<p>Darwin Port</p>		<p>Darwin Port Corporation controls and manages the land, waterways and facilities within the Port of Darwin.</p> <p>The Darwin port is expected to play a significant role for the future trade with Asia, including Singapore.</p> <p>The Darwin Port Corporation has announced the East Arm Wharf Facilities Master Plan 2030 Land Use Strategy, including a \$150 million upgrade to facilities.</p> <p>Additionally, the Government's proposed Marine Supply Base adjacent to the East Arm Wharf, and associated reclamation, land based works and package works would secure increased tonnage movement and exports and job growth.</p>



- Coastline
- Coastal Water
- Study Area
- Light Industry
- General Industry
- Strategic Industry
- Future Potential Industry
- Darwin Harbour Catchment Boundary
- Activity Corridors
- Rapid Transit Corridors
- Proposed / Future Roads
- Australian Railway
- Existing Ferry Route and Terminal
- Proposed Ferry Route and Terminal

Greater Darwin Region – Industrial Land Use



Planning for growth

By 2025

Growth

The Region anticipates growth of between 53,000 and 70,000 people

Dwellings

The Region will have between 21,000 – 28,060 additional dwellings

Retail

Core retail floor space will increase by up to an additional 125,000 sqm

Bulky goods

Bulky goods retail space will increase by up to an additional 76,000 sqm

Commercial

Commercial office space will increase by up to an additional 90,000 sqm

Industrial

Industrial land will increase by up to an additional 1,215 hectares for various industrial uses.

Shaping the future

The Land Use Plan is flexible and intended to work to 2025 to assist with short and medium term planning.

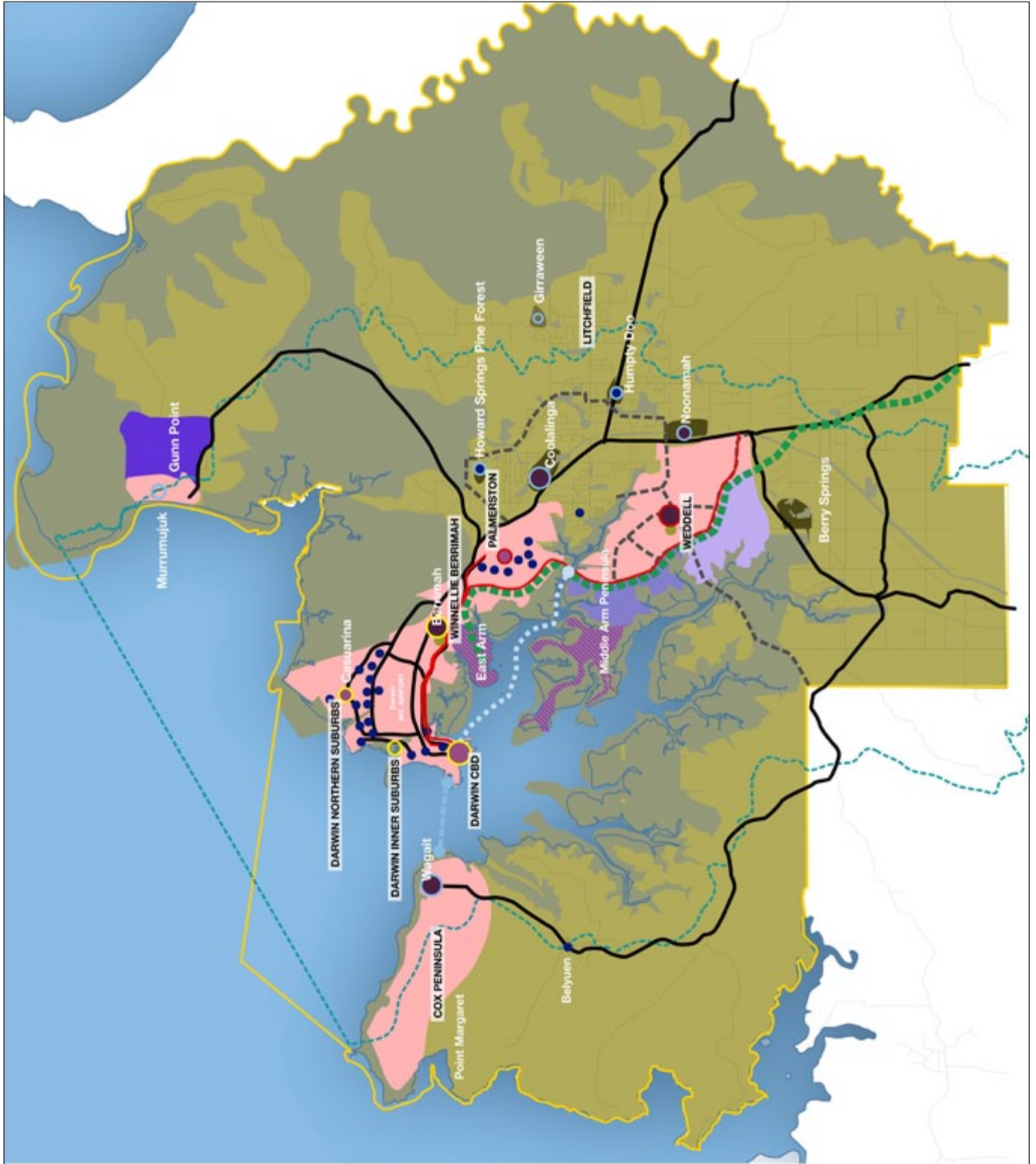
Growth must be planned and, at its core, sustainable.

The Land Use Plan accommodates a range of growth projections, while planning for the highest predicted growth rate.

It provides an evidence-based approach to the critical planning decisions that will need to be taken toward 2030.

Meeting demand for development – short, medium and long term

	2006–2010	2011–2015	2016–2020	2021–2025	TOTAL
Up to... additional Dwellings	5,245 dwellings	7,220 dwellings	6,890 dwellings	8,705 dwellings	28,060 dwellings
Up to... additional Retail including Bulky Goods	–	66,800m ²	68,900m ²	66,000m ²	201,700m ²
Up to... additional Commercial	–	29,700m ²	31,800m ²	28,500m ²	90,000m ²
Up to... additional Industrial Land	–	230 hectares	405 hectares	580 hectares	1,215 hectares



- Coastline
- Coastal Water
- Study Area
- Existing Neighbourhood Centres
- Proposed Neighbourhood Centre
- Proposed Principal Activity Centre
- Central Business District
- Principal Activity Centre
- Proposed Specialised Activity Centre
- Natural Area
- Urban Development
- Rural
- Light Industry
- General Industry
- Strategic Industry
- Future Potential Industry
- Rural Intensification Nodes
- Darwin Harbour Catchment Boundary
- Activity Corridors
- Rapid Transit Corridors
- Proposed / Future Roads
- Australian Railway
- Existing Ferry Route and Terminal
- Proposed Ferry Route and Terminal
- RESIDENTIAL GROWTH TO 2025**
- High Growth > 4,000 dwellings
- Medium Growth 2,000-4,000 dwellings
- Low Growth < 2,000 dwellings

Greater Darwin Region Land Use Framework





Northern
Territory
Government

Section 01

The Land Use Plan's Role and Function

“The Northern Territory is a special place with a great future. Plans must be laid down for the next generation of Territorians.”

Territory 2030



What is a Regional Land Use Plan? Why do we need one?

The Greater Darwin Region is growing. More people are moving here from interstate to enjoy our great lifestyle, young Territorians are staying to take advantage of the job opportunities and to raise families, and older Territorians are choosing to retire here.

With Government's record infrastructure program, and its commitment to securing major projects like INPEX, a Marine Supply Base and new mines, our economic and population growth will continue.

It is a central role of government to respond to and shape that growth through planning based on sound economic forecasts and developed in consultation with the community.

The Greater Darwin Region Land Use Plan enables government to meet the future needs of our community by assessing how we move around our community now, and using this information for mapping growth areas and respond accordingly.

For example, most people in Darwin, Palmerston and Litchfield routinely travel to and from their homes to community centres, cities, and rural areas for work, school, health services, recreation and shopping.

The Land Use Plan uses that knowledge, combined with growth predictions, to give Government the framework for mapping growth on a neighbourhood and municipal scale. It shows the relationships between designated urban centres and transport corridors and allows Government to target investment toward priority growth areas.

Government can reserve land in strategic areas for residential and industrial use, protect and preserve environmentally significant land and waterways, and provide important recreation spaces.

Importantly, the Land Use Plan is about ensuring decisions made today maximise the opportunities for long term community needs. It is developed to encompass the whole area in which the people of a region live, work and play.

The role of the Greater Darwin Region Land Use Plan – Towards 2030

The Greater Darwin Region Land Use Plan builds on the targets and priorities identified in the Territory 2030 strategy developed in 2009 and is a key element of the Government's plans for the Territory's future.

The first Darwin Region Land Use Plan, created in the mid 1980s and revised in 1990, conceived of a sequence of new cities created around the East, Middle and West Arms of Darwin Harbour. It proposed dams to control tidal movement and would have destroyed the natural systems that sustain the harbour.

Over the last decade, the high value placed by Territorians on the health of the Darwin Harbour has been recognised by all levels of government. This Land Use Plan reflects the centrality of a healthy harbour to the future of the Region.

This new Land Use Plan is based on accommodating a predicted population growth in a range of between 53,000 and 70,000 people in the period from 2006 to 2025. It will also

accommodate expanding industrial development and economic growth, balanced with protection of the environment.

This includes the timely provision and linking of infrastructure and transport to land use planning, positioning the Region to minimise the city's ecological footprint.

There is adequate land available in the Region to meet demand for future residential, commercial, industrial and social needs in a sustainable way. It is a flexible plan showing where development can happen in the short, medium and longer term.

It identifies places for development, for green space and for neighbourhoods with access to community facilities - keeping a balance between nature and the built environment.

This Land Use Plan will be reviewed over time and in response to changing economic and population growth realities.

It will be integrated with the comprehensive group of strategies prepared by the Government to guide the future growth of the Territory.

These strategies include:

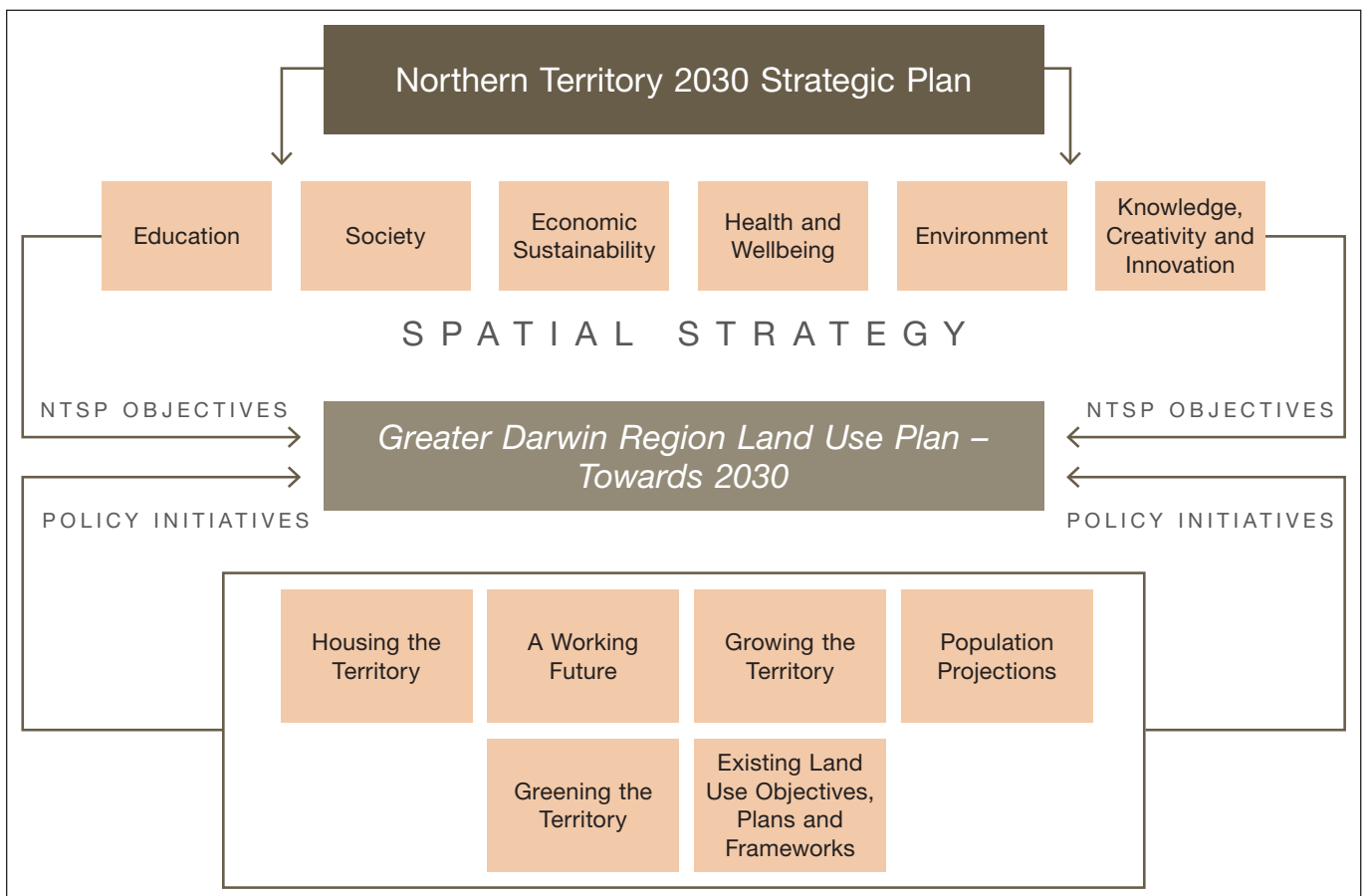
- > Greening the Territory - Climate Change Policy;
- > Housing the Territory; and
- > A Working Future.

The Land Use Plan respects the role of Local Government and looks to support the achievement of the Council of Australian Governments (COAG) agenda, agreed by Territory, State and the Australian Governments.

The next step in finalising the Towards 2030 Land Use Plan is public consultation for community input and support. Following public consultation all feedback received will be analysed and the Land Use Plan will be modified where appropriate.



The Land Use Plan’s relationship to key Territory Government policies



“Our communities will be well planned, with cities and towns planned to account for the needs of our people, our environment and our sustainable future.”

Territory 2030

Better Urban Design

A key finding of the Territory 2030 strategy was the community's concern about the look and feel of the Territory's cities and towns.

The Territory Government's Urban Design Advisory Panel was established to promote exemplary urban design and advise Government on issues affecting the growth and development of Darwin.

The Greater Darwin Region Land Use Plan builds on that by reflecting a focus on new urban development to bring a more 'human' dimension to the streetscapes.

It promotes cities in the Region having a more compact urban form, promoting walkability and sustainability for residents. More compact cities deliver affordability, sustainability and strong, connected communities.

The Land Use Plan supports an increased emphasis on infill development, particularly around activity centres and along major transport routes. This will create more compact urban form and better utilise

existing infrastructure and community facilities.

Growth in the Region will be balanced between Greenfield developments in outer areas, and redevelopment of vacant or underdeveloped land within existing urban areas.

The Land Use Plan for the Region is focused on interconnected cities and rural villages. Darwin city, with the existing CBD, the southern suburbs and the suburbs north of the airport, centred on the Casuarina regional centre, will have greater density through infill development.

Dual occupancy – or the development of two dwellings on a single allotment – is an important planning tool in meeting residential demand and improving housing sustainability.

Dual occupancy accommodation delivers 'infilling' through established areas and allows more people to live closer to the main centres, employment, shops, services and schools. It reduces urban sprawl and provides closer

links to public transport and reduced reliance on motor vehicles.

Our tropical climate requires large sites to provide for breezeways and natural light.

Dual occupancy development would only be allowed on large sites, with a proposed minimum area of 1,200 sqm.

Growth will also happen within rural villages.

This will assist in addressing not only community concerns about density, but also the greater community concern around the need to recognise the nature of the Territory's climate and to design appropriately for it. This involves using good design principles to create more fine grain streetscapes. It means fewer "inappropriate concrete boxes" that require traditional high energy cooling systems.





Northern
Territory
Government

Section 02

Context

It is essential that the government and the wider community plan together for increased growth and discuss the opportunities and challenges growth presents.

A rapidly growing population

The Northern Territory covers about 15% of Australia's land mass, but is home to only 1% of the nation's population.

The Territory's population in June 2009 was 225,938 persons. Indigenous Australians make up about one third of the Territory's population.

About 65% of the Territory's population – 148,133 people – is concentrated around the major centres of Darwin and Alice Springs.

As at June 2009, approximately 55% of the Territory population, representing 124,760 people, lived in the Darwin Statistical Division (SD). In Darwin City, there were 75,908 people (33.6%); Palmerston-East Arm had 30,005 residents (13.2%); and Litchfield had 18,847 people (8.3%).

Around 10% of the Region's population is Indigenous.

The Territory's population grew by 2.5% – or 5,435 people – in the year to June 2009.

Palmerston-East Arm SD experienced the fastest growth rate at 4.5%, an increase of 1295 people from June 2008 to June 2009. Palmerston was one of the fastest growing regions in the country during the period.

Darwin City Statistical Sub Division (SSD) grew by 2.6% – 1,924 people – and Litchfield SSD grew by 2.8%, or an extra 514 people.

Planning for future growth

The Territory Government is targeting major projects and strategic investments that will support a sustainable economic future for the Territory.

Projects such as INPEX, a Marine Supply Base, a record infrastructure program, private development of new hotels and commercial and retail ventures, and expansion of major assets such as the East Arm Wharf and the Darwin International Airport will all drive economic activity and bring more people to the Territory.

A growth in population will require Government investment in infrastructure and community services such as schools, power and water, roads and health services.

Population statistics and growth projections are important for understanding and planning for the potential future growth of the Region.

They form the basis of understanding potential future demand for land, and provide Government with the framework for the provision of suitable land for development.

Northern Territory Treasury forecasts that the population of the Darwin/Palmerston/Litchfield Region will grow by between 53,000 and 70,000 by 2025.

Base population forecast + 53,000 by 2025

Northern Territory base series population projections show population growth from 114,360 to 167,778 people within the Region.

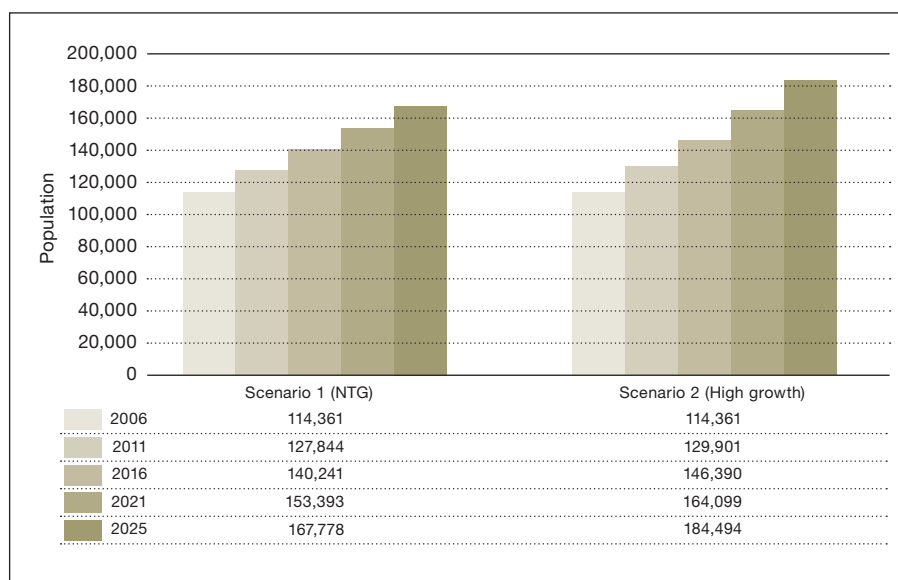
High population forecast +70,000 by 2025

Northern Territory high growth population projections show growth from 114,360 to 184,494 people within the Region. Appendix D for full details.

Population growth scenarios towards 2030

The Northern Territory Treasury High Growth Series to 2021 was taken and continued as a straight-line forecast to 2025.

- > Scenario 1: **Base population forecast**
- > Scenario 2: **High population forecast**



Summary of Greater Darwin Region Population Projections to 2025

Source: ABS Census Place of Enumeration Time Series Profile (2006), MacroPlan Australia (2009), Elton Consulting (2009).





A changing context

The Northern Territory is home to a unique community that enjoys the best lifestyle in Australia.

The average age of the Greater Darwin Region is 32, compared to a national average of 37. Like much of Australia, the Region has an ageing population, with almost half of its population growth in the 55 to 74 age group.

It is a highly mobile community, with high immigration, a routine turnover of Defence personnel, and fly in/fly out workers associated with mining and large construction projects.

About 10% of the Region's population is Indigenous, and the links of the Larrakia people to the land and waters stretch back for thousands of years. In 2009, the Northern Territory Government, the Northern Land Council and Traditional Owners reached agreement regarding the Kenbi Land Claim over the Cox Peninsula.

Darwin is one of Australia's most multicultural cities, and the community welcomes people from around Australia and around the world who move to the Territory and embrace its opportunities and lifestyle.

Significant investments have been made in preserving and enhancing the Territory's lifestyle.

The Government has moved to protect the Darwin Harbour for future generations, including protecting Glyde Point from heavy industry and rejecting damming of the Elizabeth River.

New recreation facilities have been developed, including a hugely popular water park in Darwin's northern suburbs. Plans are underway for a water park and international sporting facilities in Palmerston.

In support of recreational fishing, significant funding has been committed to construct and upgrade boat ramps and protect fish stocks.

The Waterfront development in Darwin's CBD has changed the face of the city, delivering a Convention Centre, wave pool, new hotels and restaurants, residential apartments and a Cruise Ship Terminal.

Young Territorians are taking advantage of the strong economy to build a career and family in the Territory. In a change from the past, more Territorians are now choosing to stay on after retirement and are seeking to downsize their housing requirements.

The Region's proportion of "couple family with children" decreased significantly between 1996 and 2006, though it remains the most dominant household type.

Traditional family homes are still needed, but there is a growing demand for alternative housing styles.

The Government has moved to support Territorians looking to enter the property market by allocating 15% of residential land release to affordable and social housing, and enhancing its HomestartNT loan scheme for low to middle income earners.

Investment is also being made in accommodation for senior Territorians, including new public housing villages and support for private village development.

Average individual and household incomes in the Region are significantly higher than Australian averages. A higher cost of living for some services, due in large part to the Region's remoteness from other parts of Australia, can be challenging. Significant groups of both high-end and low income earners are in the population profile.

The Region's economic profile 2011

The 21st century will see Darwin take a pivotal role in the future growth of Australia.

As Australia's northernmost capital, Darwin is closer to Asia than other Australian capital cities. It truly is the geographic gateway between Australia and Asia.

Darwin is strategically located to benefit from the emergence of the new Asian economic powerhouses such as China and India, and to continue to strengthen ties with existing partners such as Indonesia, Malaysia, Vietnam and Singapore.

Within five flying hours of Darwin are Ho Chi Minh City, Singapore, Kuala Lumpur, Jakarta, Manila, Hong Kong, Bangkok and Hanoi – and more than 50 million people.

The Greater Darwin Region is a vital link between Australia's communications, trade, transport and logistics network and South East Asian markets and the rest of the world. Appropriate planning for future growth and development is essential if the Top End is to meet its potential as a trade hub.

The completion of the Alice Springs to Darwin railway in 2003 also heralded the completion of the Australasia Trade Route, connecting Australia to Asia via rail and sea through Darwin.

The importance of the Trade Route will grow in line with increased exploration and export to Asia of minerals, oil and gas.

The ConocoPhillips LNG plant in Wickham Point confirmed Darwin as Australia's second international oil and gas hub. The Government is pursuing the INPEX Ichthys gas project.

The Government has also announced its intention to proceed with the establishment of a Marine Supply Base – a purpose-built facility to deliver rapid and efficient servicing of the offshore petroleum and gas industry. It would ensure Darwin has world-class marine infrastructure to support oil and gas exploration and developments in the Region.

A \$150 million upgrade of the East Arm Wharf has commenced, and is supported by a record Government investment in the Territory's infrastructure, including roads. Global demand for the Territory's natural resources, and investment in the Territory's tourism industry will also contribute to job opportunities and economic growth.

Such projects will attract and help retain skilled workers to support ongoing economic growth.

Alongside these industries is a growing manufacturing sector, as well as the stable Defence and government services.

Retail investment is growing, evidenced in major projects such as the Bunnings expansions in Darwin and Palmerston, and the AXIS 12°130° proposal for the Darwin International Airport precinct. Commercial investments will continue to grow in line with population increases, tourism and business demand.



A strategic approach to the future

In preparing the Greater Darwin Region Land Use Plan Consultation Paper, the Territory Government has taken a strategic approach to assessing where and how future development will occur.

In line with community views garnered through Territory 2030, it's proposed that Darwin, Palmerston and Litchfield will form a region of more compact cities offering a tropical, sustainable and liveable lifestyle.

It will be supported by strategic decisions such as the current Government policy of allocating 15% of residential land release to affordable and public housing.

The new tropical, sustainable and liveable city of Weddell will take its place in the Darwin-Palmerston-Litchfield growth triangle as home for up to 50 000 people.

Strategic industrial land will be made available to support the aim of the Region becoming a national and international trade and oil and gas hub.

A series of strategic principles will provide the framework for planning and implementing growth.

Strategic Directions

The Land Use Plan's strategic principles have sustainability as a core focus.

A strategic approach to the future leads to well-planned, well-designed and well-connected urban communities.

A strategic approach will allow better integrated land use planning, transport and infrastructure corridors that assist government in delivering more sustainable and cost-effective outcomes for the community.

It will ensure a balance between the community's social and economic needs and the needs of the environment.

Sustainability benchmarks used nationally and globally have been adapted to the Territory context to ensure the Land Use Plan supports a sustainable future for the Region.



Strategic directions for the Region

- 1 Accommodating future residential growth and diversity
- 2 Creating a more sustainable future
- 3 Supporting strong and healthy communities
- 4 Promoting economic development
- 5 Retaining a green region
- 6 Integrating land use and transport and infrastructure planning
- 7 Regional connections

Accommodating future residential growth and diversity

The Land Use Plan will support access and choice, assist housing affordability, and achieve compatibility between employment, transport infrastructure and population growth.

Growth will be accommodated through a combination of new development areas, increased density along transport corridors and centres, and the use of under-utilised land within the broader urban framework.

Strategic Direction 01

Creating a more sustainable future

Future development in the Region will be managed with an emphasis on the ecological footprint maintaining a healthy Darwin Harbour and enhancing the economy and quality of life of the residents.

To build and maintain community identity, reduce car dependency and utilise contemporary measures to conserve water and energy.

Strategic Direction 02

Supporting strong and healthy communities

Creating liveable communities with distinct local character and identity.

Compact forms of residential development within discrete neighbourhoods, incorporating a mix of uses and residential densities to encourage alternative modes of transport and the efficient delivery of infrastructure.

The coordinated and timely delivery of social infrastructure for health, sport, education and recreation to support the range of community needs and to enhance social inclusion for an ageing population, disadvantaged communities and new neighbourhoods.

Strategic Direction 03



Promoting economic development

Growth accommodated in urban areas through a combination of activity centres, specialised employment centres and additional growth through diversification in tourism and recreation.

Access to transport to assist in linking jobs to homes, ensuring employment containment of the Region and efficiency of services.

A hierarchy of centres to guide and accommodate growth and provide accessible facilities for communities.

Strategic Direction 04

Retaining a green region

This will ensure that the tropical lifestyle and natural environment and biodiversity continue to be enjoyed by residents, and new development is balanced with enhanced natural corridors and open space.

Sustainability at the centre of planning and urban development.

Recognising that the health of Darwin Harbour is central to the future of the Region.

Strategic Direction 05

Integrating land use and transport and infrastructure planning

A series of strategies will be developed to improve integration of land use planning, transport and infrastructure planning.

This will achieve critical elements of the national agreement, the Commonwealth of Australian Governments Agreement (COAG) for more compact and sustainable urban development.

Strategic Direction 06

Regional connections

Consolidating urban growth to reduce travel time and distances and improve access to essential services.

Connectivity between alternative modes of transport, cycling and walking to assist in reducing car dependence.

Mixed residential, commercial and community development along transport corridors to reduce the impacts of traffic congestion.

The Greater Darwin Region Land Use Plan - Towards 2030 to introduce better coordination and sequencing of land use and transport planning to improve overall efficiency.

Strategic Direction 07



Northern
Territory
Government

Section 03

Policies and Action

The Towards 2030 Land Use Plan is a comprehensive strategic response to key challenges setting out a strategic plan, policies and an action oriented implementation strategy.



Targets of the Land Use Plan

The Greater Darwin Region Land Use Plan – Towards 2030 provides a roadmap for strategic policies and actions to ensure the supply of industrial and residential land to 2025.

It recognises the need to preserve culturally significant sites, such as sacred sites, and to protect the Region’s environmental assets including the Darwin Harbour and waterways.

It supports Territorians’ desire for a more sustainable community and will build on programs underway, including Green Suburbs and Green Streetscapes and 5-star energy ratings for homes.

It maps the release of strategic land for industrial growth. Ongoing targeted land release will complement the growth of the Darwin Business

Park and Defence Support Hub, and the push for new major projects such as the Marine Supply Base and INPEX.

Residential land release will continue, meeting the range of housing needs and aspirations in the community. Palmerston East will be completed, a new city of Weddell will be developed, and development of rural villages and infilling through Darwin’s suburbs and CBD will all help meet demand.

The Land Use Plan is an important step in fulfilling the Territory’s commitment to the Council of Australian Governments objective of ensuring *“that Australian cities are globally competitive, productive, sustainable, liveable and socially inclusive and are well placed to meet future challenges and growth.”* (Appendix A)

Residential Growth

Land for industry

Retail and bulky goods land supply

Commercial floor space

Infrastructure planning

Social infrastructure

Funding infrastructure

Climate change

Natural heritage and biodiversity

Balanced housing market

Residential Growth

Around 28,060 additional dwellings by 2025

Based on Treasury high growth population forecasts, the Greater Darwin Region is expected to need up to 28,060 additional dwellings by 2025.

Short-term population growth figures highlight demand for an additional 1,500 to 1,700 dwellings a year. Extensive activity is underway to meet that demand.

Residential land is being turned off faster than before, and Government is allocating 15% of its residential land release to social and affordable housing.

Activity is centred primarily on the new suburbs of Palmerston East – Bellamack, Johnston, Zuccoli and Mitchell. Together these suburbs will deliver housing for about 6000 Territorians over the next four years.

Construction of homes in Bellamack is well underway, with housing construction in Johnston expected to start early in 2011.

Charles Darwin University, in association with CIC Australia and the Larrakia Development Corporation have established a development partnership for the residential redevelopment of the Charles Darwin University Palmerston campus.

Defence Housing Australia is progressing its development of Muirhead in Darwin's northern suburbs.

In Darwin's CBD, approximately 2000 units have been developed since 2006.

In the long term, planned residential land and housing development will continue to be balanced between new land releases – Greenfield sites, and redevelopment of vacant or underdeveloped land – 'brownfield', or infill sites.

Dual occupancy on blocks 1,200 sqm or larger is proposed, helping meet residential demand close to urban centres through infill developments.

Rural villages and the new city of Weddell will play important roles in meeting demand for housing.

Growth will occur at different rates across the Region and will vary between the different land uses.

To monitor and plan for growth in a sustainable manner, appropriate infrastructure will be planned for and provided.

The Land Use Plan maps the delivery of residential land across eight precincts – Darwin City Centre; Darwin Inner Suburbs; Darwin Northern Suburbs; Winnellie/Berrimah; Palmerston; Weddell; Litchfield; and Cox Peninsula.



The Region's residential development potential

Name	Number of additional dwellings up to 2025	Development Potential
1 Darwin City Centre	up to 3,320	<p>Growth will be accommodated through infill and redevelopment of vacant or underdeveloped sites.</p> <p>Higher density is expected within this area.</p> <p>Existing zoning allows residential development up to 90m or 30 storeys.</p> <p>Key waterfront sites are identified as places for higher density.</p>
2 Darwin Inner Suburbs	up to 2,900	<p>There will be redevelopment of underdeveloped or vacant sites.</p> <p>There is potential for more multiple dwellings along rapid transit corridors or activity corridors taking into account capacity and servicing costs.</p>
3 Darwin Northern Suburbs	up to 3,185	<p>There will be a balance between new Greenfield development, such as Muirhead, and redevelopment of underdeveloped or vacant sites. There is potential for more medium density residential development for a targeted number of dwellings.</p> <p>Casuarina Shopping Centre area has been identified for increased density.</p>
4 Winnellie/Berrimah	up to 1,825	<p>Redevelopment of Berrimah Farm and Berrimah Prison as infill sites will produce a well located, sustainable mixed commercial, industrial and residential development. Proposed redevelopment will be in line with COAG principles and international objectives to decrease urban carbon footprints.</p>
5 Palmerston	up to 5,470	<p>Greenfield development, such as Bellamack, Johnston, Zuccoli and Mitchell and the Charles Darwin University site at Durack, will comprise the major growth within the Palmerston area. Increased residential development within the CBD will be encouraged.</p>
6 Weddell	up to 7,230	<p>The vision for Weddell is to provide 10,000 housing lots in a tropical, sustainable and liveable city. As the Territory's newest city on a Greenfield site, Weddell presents the opportunity to design a sustainable city that will be a model for cities and towns of the future. The area will need to accommodate various housing types and densities.</p> <p>Planning for Weddell is underway, and approximately 7,230 dwellings are needed to accommodate the growth within the next 15 years.</p>
7 Litchfield	up to 3,130	<p>Growth will be accommodated through more dense development within and around rural villages, with lots down to minimum 800 sqm, and rural residential land rural living subdivision of between 4,000 sqm, 1ha, 2ha and 8ha. Infrastructure head works and services will be required to support this in a cost efficient way. Girraween, Howards Springs Pine Forest, Coolalinga, Fred's Pass, Virginia, Humpty Doo, Noonamah and Berry Springs will see development of infill sites.</p>
8 Cox Peninsula	up to 1,000	<p>The Territory Government, Northern Land Council and Traditional Owners reached agreement regarding the Kenbi Land Claim in 2009. The Larrakia Development Corporation has flagged its intention for a mixture of residential and industrial development on the Peninsula, pending final resolution of the Land Claim.</p> <p>The cost of delivering infrastructure to the area will be significant. Based on current infrastructure capacity, the Cox Peninsula could deliver about 241 additional services. Pending the resolution of the Kenbi Land Claim, potential private development could deliver between 5,000 to more than 30,000 dwellings, pending the delivery of appropriate infrastructure.</p> <p>This Land Use Plan provides for 1000 dwellings.</p>



Dwelling targets to 2025

The Land Use Plan identifies eight regional precincts for targeted residential development.

Identifying precincts for residential growth allows for targeted and coordinated planning and delivery of essential and community infrastructure as the population grows.

Throughout, the targets set by the Land Use Plan incorporate a range of key issues, including:

- > Character of the area;
- > Location and access to services and activity centres;
- > Mix of densities and housing types;
- > Respecting the tropical lifestyle and climate; and
- > A healthy Darwin Harbour and catchment

Setting the overall dwelling target

The residential growth of up to an additional 28,060 dwellings was calculated for the Territory Government by economists and planners using a series of detailed investigations.

It is a high growth assessment based on the 2006 population and then the combined effect of a range of factors, including forecast economic and population growth, household size, available urban and rural village land, and the provision of social and transport infrastructure in line with the COAG agreement (Appendix A).

Setting the dwelling numbers in each precinct

The proposed number of dwellings suggested for each precinct was determined through investigations into the existing and potential capacity of residential zoned land in each area.

It included a review of available zoned land in each area and analysis of the potential increase yields. The natural constraints in the Darwin, Palmerston and Litchfield Region were also investigated to determine which land was capable of being developed.

Planners have also identified potential infill sites that could be rezoned for residential use.

Estimated – additional dwellings

The table shows predictions in five-year time frames beginning in 2006.

In developing The Land Use Plan as a comprehensive land use plan for the Region, an assessment has been made of the optimum capacity for additional residential dwellings in each of the areas.

NAME	Total potential No of dwellings	Additional dwellings 2006-2010	Additional dwellings 2011-2015	Additional dwellings 2016-2020	Additional dwellings 2021-2025	Total additional dwellings to 2025
1 Darwin City Centre	3,720	1,020	1,015	815	470	3,320
2 Darwin Inner Suburbs	3,540	740	560	1,015	585	2,900
3 Darwin Northern Suburbs	3,960	870	1,510	410	395	3,185
4 Winnellie/Berrimah	3,950	25	800	760	240	1,825
5 Palmerston	6,060	1,780	2,535	1,035	120	5,470
6 Weddell	10,000	0	580	1,800	4,850	7,230
7 Litchfield	3,480	810	220	955	1,145	3,130
8 Cox Peninsula	30,000	0	0	100	900	1,000
Target		5,245	7,220	6,890	8,705	28,060

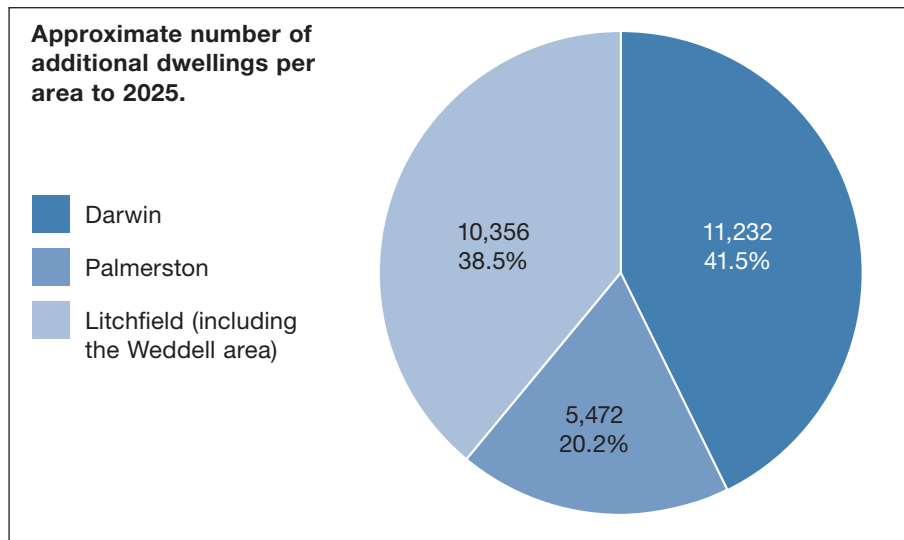
Local Government Areas in the Region

Greater Darwin Region

The Region has three local government areas: Darwin City Council, Palmerston City Council and Litchfield Council.

This graph provides housing projections for the Darwin, Palmerston, Litchfield (including the Weddell area) areas, excluding the forecast potential growth on Cox Peninsula, to 2025.

While this graph totals 27,060 additional dwellings, the addition of 1,000 dwellings for Cox Peninsula takes this number to a total of 28,060 additional dwellings in the area to 2025.



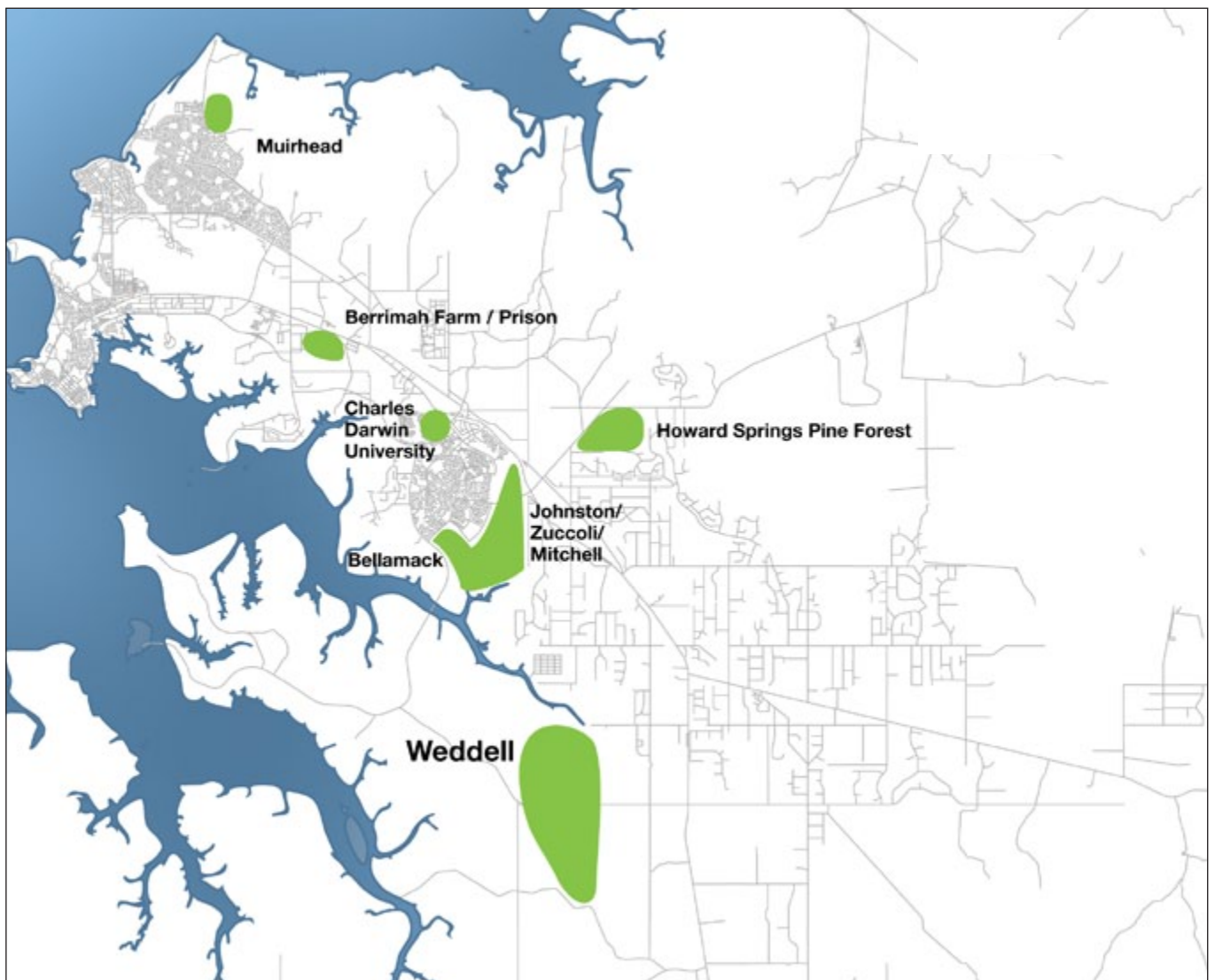


Locations for residential development

While a range of factors, including the actions of private landowners will affect where housing will occur, the locations that are likely to see more than 500 dwellings built are shown below.

There will also be development opportunities for individual owners as a result of:

- > Densification along transport corridors at activity centres;
- > Medium density; and
- > Development within rural villages.



Expanded housing choices

A central aim of the Greater Darwin Region Land Use Plan is to support a balanced housing market that meets the needs of our diverse community.

In recent years, the Greater Darwin Region's population growth rate has been amongst the highest in the nation and significant projects have been undertaken to meet housing demand.

The average age of the population is 32, yet this is balanced by an ageing population. An increasing number of single households, retired and elderly persons, and changes in household sizes will continue to require a diverse range of housing options.

While the 'family home' will remain a primary housing choice, the Land Use Plan will provide additional opportunities for a variety of single housing, medium density and unit development across the Region.

Younger Territorians are seeking more sustainable building types offering low energy outputs, low cost and often located within walking or cycling distance from work. Older Territorians may be seeking to downsize, leaving homes with large gardens for smaller dwellings or units requiring less maintenance and closer to shops and services.

The development of the Palmerston East suburbs of Bellamack, Johnston, Zuccoli and Mitchell – including the allocation of 15% of land for affordable and social housing – is a centrepiece of meeting demand for a more traditional 'family home'. HomestartNT, the Government's home loan scheme, is offering support for low to middle income earners to buy their own home.

These will be supported by the future development of the city of Weddell. Private developments such as Lyons, Muirhead, and the Palmerston CDU campus are also meeting demand for houses.

Appropriate rezoning is occurring across Darwin and Palmerston suburbs and in the rural area to meet demand for housing and lifestyles in these areas. Private developments like The Avenue (Hasting stage II), the redevelopment of the Ross Smith Guest House site in Parap, and numerous medium density developments in Larrakeyah, Stuart Park, Woolner and Fannie Bay are complementing Government projects such as the redevelopment of the Wirrina public housing complex in meeting demand for inner-suburb homes.

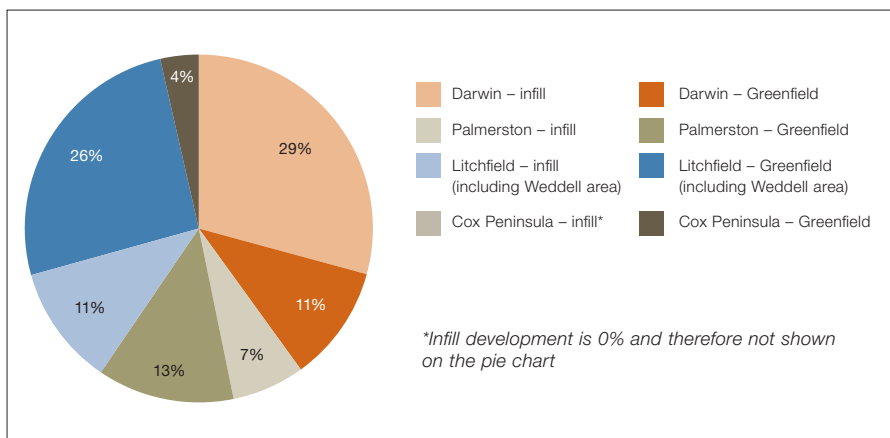
The face of Darwin's CBD has also changed as the city has grown and developed, with more than 2000 units constructed since January 2006.

The increased demand for seniors' accommodation is also being addressed through public and private developments. Work is underway on a 40-unit public housing Seniors Village in Bellamack, and more are planned for Malak and Johnston. The Southern Cross Aged Care facility is on track to be opened in 2010, further expanding the market.

The Government has also announced its intention to establish an Affordable Housing Rental Company to help meet demand in the crucial sector of the housing market.

To ensure future housing demand is met across the region in a sustainable manner, housing growth is proposed to be equally distributed through infill and Greenfield developments such as Weddell, Palmerston East, and potential private developments at Cox Peninsula.

Balanced housing supply – infill and “Greenfield”



The role of medium density dwellings

Population growth forecasts and the changing nature of the Region's community have identified a growing demand for appropriately-designed medium density housing in established areas.

The potential capacity of existing Medium Density Residential and Multiple Dwelling Residential zoned land has been assessed, and areas of possible rezoning for medium density housing are being examined.

Suitable rezoning for multiple dwellings has been successful in suburbs such as Parap, Farrar, Rosebery, and Stuart Park, creating more housing options in these areas.

In addition, the Department of Lands and Planning (DLP) is working towards drafting performance criteria aimed at improving the design of multiple dwelling buildings.

DLP will also undertake a study to identify commercial areas that can accommodate additional multiple dwelling residential buildings, creating vibrant places where people can live, shop and work.

The study is focused on providing a diversity of dwellings to cater to the Greater Darwin Region's growing population within these commercial centres, with streamlined approval processes. It will also provide guidance on how to evolve places that began as commercial and retail centres into strong, mixed-use community hubs.

The impact of these kinds of projects is well illustrated at the new Darwin Waterfront precinct where residential apartments have been constructed above restaurants and lifestyle stores and overlooking the wave lagoon and recreation area.

The Government is proceeding with an expression of interest process to develop a 6,060 square-metre block in the Palmerston CBD that would deliver ground-level commercial properties, and a mix of residential, commercial and tourist accommodation on upper levels.

A balanced supply of a mix of housing types and densities is important in enhancing housing affordability, access and choice in the market, delivered in a sustainable way.



Development within rural villages

The rural lifestyle is a highly-valued housing option for Territorians in the Greater Darwin Region.

An important step in meeting demand for this style of housing will be increasing the amount of appropriate residential development in the rural area. This will be centred on existing district centres, supporting the development of distinct rural 'villages' surrounded by rural living land.

Planning for these developments will need to be mindful of the limits of natural resources such as the Howard East Aquifer. The Land Use Plan proposes some urban-sized lots in defined rural villages, expanding out with a mixture of rural residential lots between one- and five-acres.

In some rural centres, the ageing population will increase demand for townhouses, triplexes and duplexes to give older rural residents more housing choice.

The expansion of dwellings around the identified rural villages is proposed to occur over a 15-year period. It is forecast the villages could accommodate an additional 3,130 dwellings over this time frame, although final yield would be determined through detailed engineering studies and Area Plans.





Land for Industry

Industrial land supply across the Region

The Greater Darwin Region's geographic location to Asia, placement on the Australasia Trade Route, strong Defence presence and vast mineral resources have it well placed to not only grow its existing industries but to expand supporting industries.

The Territory is open for business, and the strategic release of suitable land for industrial development is essential to realising these opportunities and continuing economic growth.

There is currently about 470 hectares of vacant industrial-zoned land in the Greater Darwin Region. Of the 470 hectares, approximately 267 hectares is zoned for light industry, 142 hectares for general industry and 61 hectares for strategic type industries.

Different sized parcels of land are required to accommodate a mix of industrial and economic activity. Good access to road, rail and the Port are important in determining the suitability of land for industrial development.

The Land Use Plan identifies 1,215 hectares of additional industrial land to support the Region's economic future, across light, general and strategic industry. It includes appropriate industrial-zoned land around the new city of Weddell. Annexure B provides a breakdown of the program to 2025.

The Territory Government has announced its intention for strategic, clean industry around Darwin Harbour and has protected Glyde Point from heavy industry.

The Territory has a strong track record of attracting world-class developments, including offshore projects such as ConocoPhillips' Bayu-Undan and ENI's Blacktip developments, which use Darwin as a service hub.

The multi-billion dollar INPEX project has identified Darwin's Middle Arm as the focus of final investment decisions.

To support the growth of Darwin as an oil and gas hub, the Territory Government is seeking to establish a world-class Marine Supply Base adjacent to Darwin's East Arm Wharf.

Significant investment is also being made in the East Arm Wharf, with a \$150 million infrastructure program underway.

The Darwin Business Park, operated by the Territory Government's Land Development Corporation, is a 100 hectare industrial precinct located adjacent to the freight terminal of the Darwin-Adelaide railway.

More than \$200 million has been invested by private companies in the Business Park, and a further 21 lots are identified for release.

The 53 hectare Defence Support Hub, also being managed by the Land Development Corporation, will support the development of speciality services for the Defence Forces and other industries including mining, oil and gas and transport.

Work is well advanced on the potential industries that might be attracted to the Territory.

Any major industrial opportunity is likely to require significant parcels of industrial land capable of accommodating international-scale projects. Each proposed site will need specific environmental assessments to be undertaken.

Factors that can influence where strategic industry activity occurs include:

- > Topography;
- > Access to key utilities;
- > Access to workforce;
- > Proximity to the sea;
- > Access to transport networks;
- > Linkage to other complementary industrial processes; and
- > Long-term expansion opportunities.

The supply and timing of strategic industrial land is dependant on a range of factors including world markets, availability of resources, and investment strategies of multi-national companies.

Government understands these major projects would warrant specific community input and discussion.

PROGRAM FOR INDUSTRIAL LAND RELEASE 2011–2025

2011 – 2015	additional 230 hectares
2016 – 2020	additional 405 hectares
2021 – 2025	additional 580 hectares



Meeting Infrastructure needs

The Region requires significant investment in major transport infrastructure to support its economic future.

In 2010-11, the Territory Government is delivering a record \$1.8 billion infrastructure program, including a \$311 million investment on roads.

A \$150 million infrastructure program is being delivered to upgrade East Arm Wharf and significant investments are being made to improve Power and Water infrastructure.

Major projects associated with the natural gas sector will require planning for strategic industrial land release on suitable and serviced land.

There is a need to identify a large area of land, of around 1,000 hectares or more, located away from residential areas but within access to a deep water port. Such land will accommodate future potential heavy industries and gas-based industries.

Various portions of land have been assessed within Darwin Harbour, including East Arm, Middle Arm and Channel Island, as well as large portions of land outside the Darwin Harbour area.

Future private development proposed by the Larrakia Development Corporation could deliver some industrial land on the Cox Peninsula as appropriate.

Identification and provision of these industrial lands to accommodate growth is subject to future infrastructure needs and timing.

Appendix B provides full details of release staging for industrial lands.

Meeting the needs for Defence Land

About 13,000 Defence personnel and their families are currently stationed in the Northern Territory, based primarily in the Greater Darwin Region.

The Defence presence is continuing to grow, delivering real opportunities for industry and the community.

Darwin is Australia's busiest naval port, and Australian and international Navy vessels regularly visit the city for recreation. The Territory is also host to a number of joint training military exercises each year.

The arrival of new military platforms in the Territory, including Abrams tanks, Tiger Armed Reconnaissance Helicopters and Armidale Class Patrol Boats, will provide new opportunities to grow the Defence support sector.

Sound planning is essential in meeting the demand for both industrial and residential land for Defence-related activity.

Headworks are progressing for the 53-hectare Defence Support Hub located near Robertson Barracks. The Hub will provide industrial land to support the growth of speciality services for the Defence Forces and other industries.

The new suburb of Lyons in Darwin's northern suburbs has delivered around 620 homes. It will soon be complemented by the development of Muirhead by Defence Housing Australia (DHA).

Following negotiations with the Territory Government, DHA has advised it will allocate 30% of the lots to Defence housing, 15% for social and affordable housing, and the remainder for private homes.





Retail and bulky goods land supply

As the Region's population and economy grows, demand for retail trade and floor space will also grow.

The current need for additional retail floor space is estimated to be 60,000 sqm.

High growth forecasts indicate an estimated need of 201,000 sqm of additional retail floor space by 2025. This represents 125,000 sqm of core retail space and 76,000 sqm of bulky goods space.

A number of strategic issues have been identified for the supply of retail land.

- > The proposed AXIS 12°130° retail/business park development beside Darwin International Airport would deliver 45,000 sqm of bulky retail and related floor space, and is likely to meet current bulky floor space demand.
- > A further 76,000 sqm of bulky goods demand is likely to be predominately met through a stand-alone centre with remaining floor space spread across other centres.
- > In the medium-term, a new principal activity centre is likely to align with planned land releases and intensification along the Stuart Highway transport corridor.
- > A specialised business park facility is proposed for the Stuart Highway corridor.
- > The establishment of a major department store in Darwin's CBD would reinvigorate the city's position as a primary retail destination.
- > Pending the resolution of the Kenbi Land Claim, private development could deliver between 2,000 and 2,500 sqm of retail space on Cox Peninsula once the population reaches 8,000 people.

The Towards 2030 Land Use Plan proposes retail hubs across the Region to provide an integrated approach to the growth of the population, workforce, lifestyle, education and services in a sustainable way.

Snapshot of the Region's retail centres

Central Business District

Darwin CBD will remain the primary centre in the Region.

Principal / Major Activity Centres

The current centres of Palmerston and Casuarina remain major activity centres. Future major activity centres are planned for Weddell, Coolalinga and Berrimah.

Secondary Activity Centres

Hibiscus Village and Coolalinga are examples of current secondary activity centres in the Region. Secondary activity centres provide a wide mix of commercial, service, community and social facilities and typically contain one or more supermarkets.

Neighbourhood Activity Centres

There are many neighbourhood activity centres. As future infill development and increased density occurs, these local neighbourhood centres will be busier and more viable. In the rural areas there are centres at Howard Springs Pine Forest and Humpty Doo. Future centres are predicted for Noonamah and Berry Springs. If development is undertaken at Cox Peninsula, Wagait has been identified as likely to grow to a neighbourhood activity centre over the life of this Plan and eventually a major activity centre.

Specialist Activity Centres

The Land Use Plan proposes specialist activity centres, with a mix of bulky goods and retail uses, at the Darwin International Airport, in the Berrimah area and at Weddell. Specialist activity centres are normally associated with key retail activity centres and a mix of uses, and are spread across the Region to meet the needs of the market.



Additional retail floor area for the Region

The likely staging and distribution of new retail floor space, including bulky goods space, over the next fifteen years is detailed in the table.

Current Activity Centres	Precinct	Existing floor area (m ²)	2011 – 2015 (m ²)	2016 – 2020 (m ²)	2021 – 2025 (m ²)	Additional new total floor area (m ²)**
Darwin City	1	57,608	6,000	6,000	4,700	16,700
Parap Village	2	3,000	1,000	1,000	2,000	4,000
Casuarina	3	51,500	5,000	3,500	2,000	10,500
Hibiscus	3	4,640	3,000	2,000	4,000	9,000
Northern suburb neighbourhood centres	3	21,000	2,100	1,000	1,000	4,100
Palmerston	5	40,167	7,000	6,000	6,000	19,000
Palmerston neighbourhood centres	5	10,000	5,000	6,000	4,000	15,000
Coolalinga	8	4,500	7,000	2,000	2,000	11,000
Humpty Doo	8	2,300	2,100	2,000	0	4,100
Sub-total		194,715	38,200	29,500	25,700	93,400
Proposed Activity Centre						
Berrimah	4		2,800	4,000	7,400	14,200
Weddell	7		0	6,000	7,000	13,000
Noonamah	8			2,000	2,400	4,400
Cox Peninsula	9		0	0	0	0
Sub-total		0	2,800	12,000	16,800	31,600
RETAIL TOTAL		194,715	41,000	41,500	42,500	125,000
Specialised Activity Centre						
Jape Homemaker Village	3	34,200	2,000	2,000		4,000
Airport Business Park	3	10,000	7,000	5,000	10,000	22,000
Berrimah	4	6,500	15,000	14,000	8,000	37,000
Other		27,235	1,800	2,000	1,000	4,800
Weddell	7			4,400	4,500	8,900
BULKY GOODS TOTAL		77,935	25,800	27,400	23,500	76,700
Total retail target			66,800	68,900	66,000	201,700

The additional floor area (m²) required is based on an estimated total retail turnover density of \$5,690/sqm as well as target population growth. The initial retail growth is greater than the population growth due to the present need for additional retail floor area.

Commercial floor space

Office and commercial floor area for the Region

The timing and staging of the requirement for additional office space is influenced by a complex range of market factors. The take up of commercial opportunities depends on the scale and timing of residential growth, the corresponding growth in jobs and the economy and the actions of private landowners.

A total of around 90,000 sqm of additional area is predicted to be required by 2025. This is made up of 72,000 sqm of core commercial office space and 18,000 sqm of secondary office space.

All core space is planned for Darwin CBD in five-yearly releases of 22,000 sqm – 26,000 sqm. The remainder is generally distributed across Berrimah, Parap Village, Casuarina, Hibiscus, Palmerston, Coolalinga and Weddell.

This Towards 2030 Land Use Plan has focussed primarily on core and secondary office space in centres. A new business park provides an opportunity for a critical mass of office uses and is seen as important for the Region.

Staging of additional commercial area for the Region to 2025

The table below illustrates the likely staging and distribution of commercial floor space across the areas to 2025.

Core Office	Precinct	2011 –	2016 –	2021 –	Total additional floor area (m ²)
		2015	2020	2025	
Darwin City	1	23,700	25,800	22,500	72,000
Secondary Office					
Palmerston	5	2,500	1,000	1,000	4,500
Berrimah	4	500	1,000	600	2,100
Parap Village	2				0
Casuarina	3	1,500	1,000	1,500	4,000
Hibiscus	3	500	1,000		1,500
Coolalinga	8	500	500	800	1,800
Other		500			500
Weddell	7	0	1,500	2,100	3,600
Sub-total		6,000	6,000	6,000	18,000
OFFICE TOTAL		29,700	31,800	28,500	90,000

Infrastructure Planning

Integrated land use, infrastructure and transport planning is central to delivering a good lifestyle in cities.

The Towards 2030 Land Use Plan will be supported by detailed infrastructure planning to ensure that essential services and key community facilities, such as schools, parks and child care centres, are delivered to keep pace with a growing community.

This strategic planning is reflected in projects such as the new Primary and Middle Schools in Rosebery, dedicated open space and conservation areas in the new suburbs of Johnston and Bellamack, and investment in expanded health services for Palmerston.

A more sustainable approach to transport planning is underway.

The Land Use Plan identifies existing major transport routes and transit corridors. The provision of corridors that integrate cycling, walking and public transport is fundamental in reducing the reliance on private cars and improving accessibility between urban centres.

Significant investment has been made to expand the Region's public transport system, including the addition of new orbital bus routes and a link from Humpty Doo to Palmerston. This is supported by the establishment of park and ride facilities in Humpty Doo, Coolalinga and Noonamah to encourage take-up of public transport.

Early planning for Weddell has also identified the need for integrated public transport routes as part of the initiatives to create a sustainable city.

The Government has also introduced a program to enhance and expand the Region's bicycle paths.

A Northern Territory Transport Strategy is in development which will provide high level policy principles and strategic direction for transport in the Northern Territory. A regional transport study for the Greater Darwin Region (including development of a Public Transport Strategy) is also proposed.

Rapid transit and potentially light rail are long term public transport options. The NT Government has planned and reserved rapid transit corridors along key arterial routes in the Greater Darwin Region.

A Darwin CBD Public Transport Study in 2009 indicated that to be viable, rapid transit (such as rapid bus transit) requires at least 3,000 passengers per hour and even greater passenger numbers per hour for light rail. Darwin's most frequently patronised bus route currently carries approximately 1,000 passengers per hour at peak times. Projected increases in public transport patronage in Greater Darwin Region indicate that the number of passengers required to support rapid transit are unlikely to occur in the Region in the short to medium term. However, ongoing investigation and planning for future rapid transit corridors will be required. Ongoing development of current bus services include express bus services and bus priority measures will continue to be developed and investigated in the short term.





Power, Water And Sewerage Infrastructure

The Territory Government's Power and Water Corporation is delivering a five-year, \$1.6 billion infrastructure investment program.

More than \$1.2 billion is allocated to a range of capital works projects. These include works at the Weddell and Channel Island Power Stations, and strategic substations across Palmerston and the northern suburbs; boosting the capacity of the Darwin River Dam; and closing the Larrakeyah sewerage outfall.

Almost \$270 million is committed to a repairs and maintenance program for the essential services infrastructure.

Strategic investment in water, power and sewerage will need to continue to meet demand from a growing population.

Water

Water consumption per capita in the Greater Darwin Region is significantly higher than in other Australian cities.

Territory 2030 sets a target of reducing household potable water use by 30% by 2020. To support the community to save water, the Government is offering rebates for water saving appliances and rainwater tanks.

The Government is also establishing regional water allocation plans, structured around:

- > Ensuring the rivers, wetlands and wildlife get the water they need first. Remaining available water is then allocated for drinking, industry and other uses.
- > The water in the ground and the rivers are managed together.
- > Climate variation is factored in so that the amount of water available for water users can be varied, for example in periods of low rainfall.

Non-residential water needs, such as industrial and commercial, make up about 50% of water demand. Targeting reductions in non-residential demand, such as water recycling in industrial and commercial uses, and in the external use in residential areas provide the best opportunities for water conservation.

While reducing water use is an important step in creating a more sustainable community, there will still be an increased demand for water supply.

The Towards 2030 Land Use Plan will guide the investigation of issues such as the capacity of the Region's various water sources and the sustainability of continued use of groundwater resources.

Extensions to the reticulation system will also be required to supply future development.

Provision of headworks to support new development areas, and investigation into the capacity of the reticulation systems to cope with additional load in existing areas will be required.

Key issues

- > Potable water for the Region is supplied from Darwin River Dam and the Howard East Borefield. Water is pumped to the McMinns Transfer Station for chlorination and fluoridation, and then pumped to a series of ground level and elevated storage tanks for reticulation to Darwin, Palmerston and part of Litchfield.
- > Non-reticulated parts of Litchfield and Cox Peninsula rely on groundwater. The integrity of the aquifer will be protected.
- > Current water supply sources (excluding Manton Dam) provide some 46GL/a, and current usage is about 40GL/a.
- > A \$14.8 million project is underway to raise the wall of the Darwin River Dam, boosting capacity by 20% (8GL/a) on completion. Other options being investigated to meet future demand include increasing the number of bores in the McMinn Borefield.
- > Any future use of Manton Dam for water supply would need to consider its existing recreational use.

Power

The Region's electricity supply comes from the Power and Water Corporation's gas turbine power station at Channel Island, with a secondary supply from the Weddell Power Station.

Strategic development of the power network will require ongoing review to meet demand as residential and industrial land is released.

The Region's natural environment presents challenges in maintaining a reliable power reticulation system, including cyclones, monsoonal storms, tree damage and wildlife, particularly bats. These environmental factors have a particular impact on above-ground power lines.

The Government, through Power and Water, has a policy of underground power supply in all new urban areas. A program is also underway to replace overhead power lines with underground cables throughout Darwin's older suburbs. Nightcliff has now been changed over to underground power, and work is continuing in Rapid Creek and Millner.

Territory businesses have so far been awarded contracts valued at more than \$35 million through this program.

Power and Water Corporation has a forward works program that is focused on supplying the power needs of developing residential, business and industrial areas.

Sewerage

The Region's urban areas are serviced by reticulated sewerage disposal systems.

The Territory Government has a strong commitment to protecting the health of Darwin Harbour.

The Power and Water Corporation's Darwin Region Sewerage Strategy reflects that commitment and aims to:

- > Provide capacity for a growing population and industry base; and
- > Improve the performance of the Region's wastewater treatment and disposal facilities and reduce potential impacts on the environment from sewerage operations.

The Corporation has allocated \$57 million to deliver the Strategy, including closing the Larrakeyah Outfall and augmenting the Ludmilla Wastewater Treatment Plant.

The Strategy will guide the provision of sewerage infrastructure in the future.

Closure of the Larrakeyah sewage outfall will mean that all sewage discharged from the reticulated system is treated prior to eventual discharge to the environment.

With the exception of the Humpty Doo Wastewater Treatment Plant which treats sewage from the community, commercial and residential users in the nearby district centre, rural area sewage is treated in septic tanks with disposal via absorption trenches or in package treatment plants.

Development of rural villages will require upgraded infrastructure and services, including the potential delivery of full reticulation.

Further investigations in relation to constraints and opportunities for reticulating and treating sewage will be required as infill and medium density development occurs in urban areas.

The Territory presently reuses about 5% of its treated sewage, and the costs associated with reuse are currently similar to those of potable water.

The Leanyer Wastewater Treatment Plant is the only significant reuse facility in Darwin, providing treated water for irrigation of the Marrara golf course.

The Government supports the installation of non-potable water mains through proposed new residential suburbs to provide for future use on open spaces such as sporting fields and golf courses.



Social infrastructure

The Greater Darwin Region has a critical role in the Territory of providing social infrastructure and services to the Region's residents and the community of the broader Top End region.

Social infrastructure is absolutely vital in delivering and maintaining a good quality of life, and lifestyle, for a community.

The Region's key social infrastructure includes Royal Darwin Hospital, Charles Darwin University, Marrara Sports Complex, Darwin Entertainment Centre, the Museum and Art Gallery of the NT, law courts, churches, schools and parks.

Significant pieces of social infrastructure have been developed across the Greater Darwin Region in recent years. The Darwin Convention Centre and Waterfront precinct, Leanyer Recreation Park and its waterslides, new cycle paths and bike ways, Palmerston Library and Recreation Centre, Larrakia Football Stadium and Palmerston boat ramp have all added to the amenity of the Region and enhanced its lifestyle.

Green spaces and beautification projects are an important part of a city's sustainability and liveability.

The concept master plan for the redevelopment of Darwin's Old Hospital Site includes an 8.7 hectare tropical park. It will include a suitable commemoration of the site's history, the Kahlin Compound and the Larrakia.

The Territory Government has also committed to developing Flagstaff Park at Myilly Point as a public park, preserving the coastal resource for community use.

The major entry points to Darwin's CBD will also be redeveloped in beautification projects.

Current regional facilities generally meet the needs of the population and have some capacity to absorb future demand. However, some services will be stretched by a larger population.

Palmerston in particular will become a focus of social infrastructure as its new suburbs develop. Two new schools have been built, and Government has announced the construction of international-standard sporting facilities and a water park in Palmerston.

Early planning for the new city of Weddell has identified the need for social infrastructure including parks and open spaces, schools, churches and municipal buildings.

In planning social infrastructure for the future, it is important to preserve the past.

The spiritual and cultural heritage of the Region's diverse community will need to be carefully considered and preserved. This may be through preservation of existing locations such as sacred sites, the Chung Wah Temple and the old Town Hall. It may be showcased through museums such as the Defence of Darwin museum, archiving in libraries, or commemoration in other ways such as the proposed Kahlin Compound memorial at the old Hospital site.

Key Proposals for Social Infrastructure

- > Augmentation of the Royal Darwin Hospital, as well as some existing, related community health services.
- > Continue investigations for a second major health facility in the Region to service expanding growth.
- > Undertake detailed planning and provide the full array of social infrastructure facilities in new Greenfield areas, including for Weddell. Should Weddell's population reach 50,000, its social infrastructure is likely to include six primary schools, two middle schools, two senior colleges, police and fire services, NT Library and other recreation, churches and places of worship, child and family services.
- > Undertake detailed planning of augmentation required to schools and other facilities in rural villages and infill areas.
- > As specific development proposals emerge, investigations will be undertaken to identify cultural heritage sites, including sites protected by the *NT Aboriginal Sacred Sites Act*, and the *NT Heritage Conservation Act*.

Meeting the identified education needs in the Region is a high priority in line with the strong commitments to Education in the Territory 2030 Strategic Plan.



Funding infrastructure

Social infrastructure

Northern Territory Government agencies have identified costs for social infrastructure in the development of 10 year capital works infrastructure program estimates submitted in 2008. These estimates provide a foundation for costing the social infrastructure identified in this Land Use Plan and will be updated as part of the next phase of more detailed planning.

Other infrastructure

The Towards 2030 Land Use Plan for the Region has been developed in association with the planning of other infrastructure needs and some preliminary cost estimating.

For Greenfield sites, estimates of total costs per lot are \$80,000 - \$120,000 depending on location.

These costs include headworks costs such as essential services to streets – water, sewer, power and roads - and estimated at about \$30,000 per lot; as well as internal development costs linking essential services to individual sites and estimated at \$60,000 - \$120,000 per lot.

The exception to these estimates is development on Cox Peninsula where initial costs would be much higher because of the need for significant infrastructure. For this reason only 241 lots are currently planned at Cox Peninsula using existing infrastructure.

With infill style development, costs vary according to the extent and capacity to which a site is currently serviced. The cost of augmentation to internal development works is typically in the order of \$20,000 to \$30,000 per lot to cater for the new lot arrangement. Headworks costs are covered by fees applied by the Power and Water Corporation to the development.

Indicative per unit costs for residential and industrial development are presented in the Infrastructure Costs tables in Appendix C.

Climate change

The Towards 2030 Land Use Plan supports the Northern Territory Climate Change Policy 2009.

A compact city will assist in achieving the goal of an overall reduction in carbon emissions of 60% by 2050 and the nine key elements for collaborative action, particularly building green cities and towns.

The Land Use Plan proposes that development should generally be contained within the existing urban development areas and rural villages to minimise the Region's ecological footprint ensuring a sustainable region for the future. The Towards 2030 Land Use Plan is one of many strategic policy documents that have been developed to take into account the particular challenges that climate change presents the Region. The Land Use Plan has been prepared in the context of the following sustainability policies:

- > Future planning controls will require the installation of water sensitive urban design (WSUD) to control stormwater runoff and discharge.
- > Water and sewerage systems will need to be extended and upgraded and dual reticulation will be required to allow grey water re-use in Greenfield sites.
- > New developments will encourage reduced water consumption by providing recycling systems, water conservation measures, education and demand management.
- > Existing energy systems to be expanded and upgraded to ensure reliable supply and investigation of alternative power supply strategies such as solar or diesel / solar.
- > Waste management and reduction to be part of urban and rural development areas.
- > An investigation of groundwater / surface water interactions on the Cox Peninsula to determine long-term capacity of Imuluk Springs and alternative water source options such as the Darwin River Dam extension or construction of a desalination plant.
- > Sustainable and cost-efficient infrastructure, such as sewage disposal and treatment systems in areas like the Cox Peninsula to be provided.
- > Vulnerability mapping to be used to identify areas at high or severe risk of climate change impact such as rising sea level, emerging tropical diseases and severe storm events in developing future areas.
- > Accessibility for emergency services and cyclone infrastructure to be incorporated as part of new and existing Greenfield site development.
- > Urban and rural development to reflect the Territory lifestyle and identity, including culturally and geographically appropriate housing designed for a tropical climate.

Natural heritage and biodiversity

The community of the Region places a high value on the protection and conservation of the natural environment with a particular focus on coastal and wetland habitats including mangroves, inland lagoons, streams and riparian vegetation. The habitats are often linked by seasonal surface and groundwater flows which make it imperative that planning for future development includes an integrated approach to the protection of these natural values. This Towards 2030 Land Use Plan has been prepared taking account of the significance of Darwin Harbour and the natural environment to the Region and to the local community.

Parks, reserves and remnant vegetation provide essential recreational experiences for residents in the area covered by the Land Use Plan and they add significantly to the amenity of residential areas (eg. the value of Casuarina Coastal Reserve to the residents from Nightcliff to Lyons). Furthermore, they act to conserve the native plants and animals that residents value so much. Increased development will remove some of the natural bush areas that are currently

acting as buffer zones and wildlife corridors. This development will create water, sediment, pollution and fragmentation issues in the parks and remnant vegetation, and will increase weed risks and impact on feral animal and fire management that can threaten the quality in these areas. Good planning will be needed to minimise those risks.

The predicted increased population will also increase crowding on existing parks which may decrease the quality of the visitor experience. There will be a need to develop new parks to spread the visitor load and maintain wildlife corridors to offset the impact of new developments. Increased population as outlined in the Land Use Plan will also displace some of the existing recreational opportunities in the outer Darwin area. New areas and parks, further from Darwin, will need to be established to enable these recreational activities to continue.

Darwin Harbour and the creeks and rivers that feed it are recognised by the community as iconic features of the broader region. The creation of the Darwin Harbour Advisory

Committee (DHAC) to advise the Territory Government reflects the importance many place on the harbour. The Committee's focus is on sustainable development and long-term protection of the harbour. The committee has released a Darwin Harbour Strategy, which identifies five key goals each supported by guidelines to be considered in decision-making that may impact on the harbour and its catchment.

The five goals of the Darwin Harbour Strategy are to:

- > maintain a healthy environment
- > support recreational use and enjoyment of the environment
- > ensure that development is implemented in an ecologically sustainable manner
- > protect cultural values and heritage
- > foster community awareness, industry partnerships and stewardship of the Darwin Harbour Region.

The Greater Darwin Region Land Use Plan supports the goals and strategy for Darwin Harbour.



A balanced housing market in the Region

The Greater Darwin Region Land Use Plan – Towards 2030 seeks to provide land to support the population growth that can underpin growth in the Region’s economy.

The availability of appropriate and affordable housing as a key issue affecting the social and economic wellbeing of the Territory was identified in Territory 2030 Strategic Plan.

In planning for future growth the focus remains on retaining the balance between quality of life and amenity. Growth will not occur at the expense of conserving the unique biodiversity, landscape, social well being and cultural diversity of the Region.

The Land Use Plan sets out how the anticipated growth over the next 15 years can be accommodated. It will happen in a range of ways. A greater amount of additional Greenfield land will be available for housing within the next 15 years, as well as infill in existing neighbourhoods. More medium density housing and more dwellings in rural villages will also be provided.

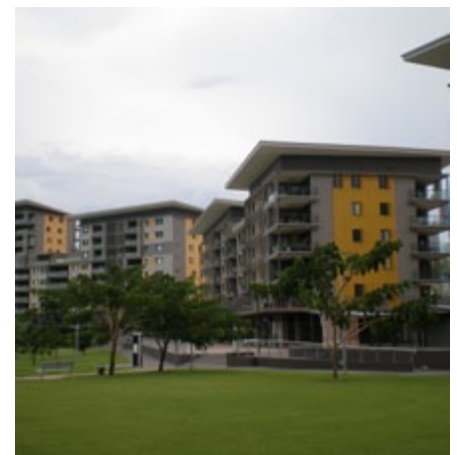
The Land Use Plan is the preferred growth plan for a range of reasons. A more compact city supports sustainability and the Council of Australian Governments criteria for long term planning for major cities. (See Appendix A)

By planning for a high growth scenario the Government can plan with confidence for investment in needed social infrastructure to support a larger community.

If growth slows, the release of land or development can reflect that change. It is far simpler to slow down rather than speed up the release of appropriate land and infrastructure in response to changing circumstances.

The Territory Government is taking leadership in planning for change rather than reacting to growth.

This Plan is to enable the Region to accommodate major economic activities arising from critical investments, such as in resources, gas and exploration. It responds to opportunities that will significantly benefit the Region and the national economy.



Conclusion

The Territory 2030 Strategic Plan sets a vision for the future of the Northern Territory in consultation with the community, which is a long term vision for a sustainable future. It recognises that the Northern Territory is a special place with a great future. It recognises that plans must be laid down now for the next generation of Territorians so that we can accommodate and benefit from growth while enhancing the things that give our community its distinctive lifestyle. Central to this is the Darwin Harbour and its catchment.

Like Territory 2030, the Greater Darwin Region Land Use Plan – Towards 2030 is a plan about the future. It is a guide to enable growth in the Region that will give opportunity to many and maintain and enhance the quality of life the people in the Territory value.

Weddell, planned as a tropical, liveable and sustainable city and the Territory's newest Greenfield site fits within the Land Use Plan, as do planned developments on land owned by Charles Darwin University at Palmerston and Defence Housing Australia at Muirhead.

The Land Use Plan also goes well beyond the already announced projects to shape sustainable development to 2025 and beyond.

The Greater Darwin Region Land Use Plan – Towards 2030 is a platform for future prosperity and a strong community. It will provide much needed housing for a growing population, reduce rental stress and provide appropriate housing choice for singles and older people.

It is intended to work as a flexible framework to guide growth while maintaining ongoing consultation with the community with regular reviews.

The implementation plan detailed in the next section will deliver co-ordination across Territory Government agencies and a collaborative approach by local councils, developers and the community.





Northern
Territory
Government

Section 04

Implementation

The *Greater Darwin Region Land Use Plan – Towards 2030* will require coordination across a range of government agencies and regular review and monitoring.



The Greater Darwin Region Land Use Plan will have impacts across the community as well as on a wide range of NT Government agencies. Implementation will require a coordinated approach to a range of planning and funding implications arising from land development.

It will require coordination across a range of Government agencies, with a key role for the Department of Lands and Planning. It will also require close coordination with local government and work with the private sector.

The Land Use Plan has been developed in the context of Territory 2030, the overarching Strategic Plan. It is also working with a range of policy initiatives including A Working Future, Growing the Territory, Greening the Territory, Population Projections, Housing the Territory as well as existing land use objectives, plans and frameworks.

A rolling five-year program of investigation and then delivery of infrastructure to facilitate development will be an important part of the implementation process. It is likely that funding support will be required from the Australian Government to meet some of the infrastructure requirements in the Land Use Plan.

A growth strategy is subject to market conditions, consumer choice and non government investment decisions. Growth relies on identifying and satisfying the needs of residents and/or businesses. The implementation plan will need to link land use, development and growth by providing infrastructure services to facilitate coordinated delivery to 2025.

Growth across the Greater Darwin Region is likely to occur in varying ways and relies on:

- > Government release of land
- > Development of private land
- > Provision of associated infrastructure
- > Involvement of all levels of government and the private sector.

The key implementation tasks are:

- > Monitoring supply and releasing land across all market segments
- > Monitoring population and economic growth
- > Programming infrastructure investments to enable the sensible balancing of markets
- > Encouraging competition in land markets
- > Fostering innovation and cost efficiency in land developments
- > Encouraging good quality appropriate urban/built form.

Northern Territory Government co-ordination

Agency co-ordination will focus on a number of key issues including:

- > Updated population projections and demand analysis.
- > A forward land release plan which confirms what will be released in the next 12-18 months.
- > An annual forum with industry to allow an open information exchange between government agencies and industry so that there is always an up to date understanding of progress, opportunities and challenges.

Partnering with local government

Housing availability and affordability is a challenge involving all levels of government, indigenous and non-indigenous landowners, developers and the community sector.

Meeting these challenges will require the active support and involvement of the three local councils, Darwin City Council, Palmerston City Council and Litchfield Council.

The cornerstones of the working relationship between the NT Government and these councils will be:

- > Sharing market and growth information.
- > Examining opportunities and innovations to improve the design and cost of development.
- > Co-ordinating the provision of services to achieve a seamless approach to development.



Land supply, monitoring and review

Monitoring and review of the Greater Darwin Region Land Use Plan is critical to ensure sufficient land is provided to support the Region's growth over time. The Land Use Plan provides a flexible framework to meet the immediate needs for land supply in the Region.

The Land Use Plan has been framed recognising a number of issues, including those listed below:

- > Detailed planning studies for land subject to the Greater Darwin Region Land Use Plan may result in significant changes in potential yield.
- > Climate change investigation and possible inundation of land could have a negative effect on the provision of dwellings.
- > The detailed studies for Weddell will reveal any constraints, such as biting insects, which could have an effect on the expected yield of Weddell.

- > The outcomes of the Berrimah Farm contamination investigation could influence the expected yields in this area.
- > Decisions by Government not to use and/or approve development of land parcels for residential use could have an effect on the ultimate provision of dwelling yield unless, for example, reductions to one element of the Land Use Plan are balanced by increases in another element.
- > Decisions by a higher than expected number of land owners to land bank rather than develop their sites could also have an impact.

A governance framework for the Greater Darwin Region Land Use Plan – Towards 2030's implementation provides clear accountabilities within Government for delivery and monitoring.

Monitoring and review mechanisms provide a feedback loop to allow for adaptive management in response to changing circumstances and new information. If the Land Use Plan is to achieve its objectives and vision, monitoring is vital. The regular monitoring, particularly of the residential land release program, will involve two-way exchange with the development industry.

Review of planning instruments and other actions

Implementation of the Greater Darwin Region Land Use Plan – Towards 2030 will lead to changes to the NT Planning Scheme to achieve a number of the policy aspirations. Below is a list of recommended changes to the statutory planning scheme as well as other key actions to be undertaken. Amendment of the NT Planning Scheme is required to replace the existing Darwin Regional Land Use Framework (2007) with the proposed Greater Darwin Region Land Use Framework and associated planning principles.

Statutory planning actions

- > Amendment of the statutory planning documents, including the NT Planning Scheme to address:
 - A definition of hierarchy of centres.
 - Principles for town and activity centres and appropriate statutory controls to achieve the desired format of centres.
 - Additional residential typologies, new minimum lot sizes in rural residential and residential zones, increased densities in identified areas, nodes, and transport and development corridors.
 - Amendments to the industrial zones in relation to allowable land uses and yields to achieve job creation.
- > Inclusion of sustainability principles for development in statutory planning documents in order to begin to implement the NT Government policy commitments in relation to energy and water efficiency requirements and cross ventilation for residential and office buildings.
- > Providing for flexibility in the land development processes in order to release land in a timely manner to meet demand.
- > Providing mechanisms and implementation strategies to enable master planning and design of Greenfield land releases to allow for the integration of uses and a functional town centre.
- > A strategy on housing typology and preference, and integrated social and employment facilities to meet the needs of transient people from aboriginal communities visiting or residing in the Region.

Other actions

- > An approach to assist with funding and constructing key infrastructure, whether new or augmentation of current, for major densification or infill development.
- > An approach to funding and implementation of infrastructure in rural residential areas or rural service activity centres.
- > An approach to preserving land along transport corridors and around transport activity centres for future development opportunities.
- > An approach to integrating the provision of appropriate social facilities in growth areas based on a proposed general standard requirements guideline.
- > Negotiating with the Australian Government for funding for major infrastructure.
- > An approach to decision making on matters that may affect the Darwin Harbour and its catchment.
- > Community engagement in land use planning for rural villages and activity centres.





Northern
Territory
Government

Appendices

- Appendix A **Council of Australian Governments (COAG) criteria**
- Appendix B **Industrial land supply table by area**
- Appendix C **Infrastructure costs tables – indicative only**
- Appendix D **Background data**

Glossary of Terms

Appendix A

Council of Australian Governments (COAG) criteria

Objectives and Criteria for Future Strategic Planning Of Capital Cities

Objective

To ensure Australian cities are globally competitive, productive, sustainable, livable and socially inclusive and are well placed to meet future challenges and growth.

Criteria

Capital city strategic planning systems should:

1. Be integrated: –
 - a. across functions, including land-use and transport planning, economic and infrastructure development, environmental assessment and urban development; and
 - b. across government agencies.
2. Provide for a consistent hierarchy of future oriented and publicly available plans, including: –
 - a. long term (for example, 15-30 year) integrated strategic plans;
 - b. medium term (for example, 5-15 year) prioritised infrastructure and land-use plans; and
 - c. near term prioritised infrastructure project pipeline backed by appropriately detailed project plans.
3. Provide for nationally-significant economic infrastructure (both new and upgrade of existing) including:
 - a. transport corridors;
 - b. international gateways;
 - c. intermodal connections;
 - d. major communications and utilities infrastructure; and
 - e. reservation of appropriate lands to support future expansion.
4. Address nationally-significant policy issues including: –
 - a. population growth and demographic change;
 - b. productivity and global competitiveness;
 - c. climate change mitigation and adaptation;
 - d. efficient development and use of existing and new infrastructure and other public assets;
 - e. connectivity of people to jobs and businesses to markets;
 - f. development of major urban corridors;
 - g. social inclusion;
 - h. health, liveability, and community wellbeing;
 - i. housing affordability; and
 - j. matters of national environmental significance.
5. Consider and strengthen the networks between capital cities and major regional centres, and other important domestic and international connections.
6. Provide for planned, sequenced and evidence-based land release and an appropriate balance of infill and Greenfield development.
7. Clearly identify priorities for investment and policy effort by governments, and provide an effective framework for private sector investment and innovation.
8. Encourage world-class urban design and architecture; and
9. Provide effective implementation arrangements and supporting mechanisms, including:
 - a. clear accountabilities, timelines and appropriate performance measures;
 - b. coordination between all three levels of government, with opportunities for Commonwealth and Local Government input, and linked, streamlined and efficient approval processes including under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999;
 - c. evaluation and review cycles that support the need for balance between flexibility and certainty, including trigger points that identify the need for change in policy settings; and
 - d. appropriate consultation and engagement with external stakeholders, experts and the wider community.

Appendix B

Industrial land supply by area

The staged take-up and allocation of new industrial land over this period and across the nine precincts is predicted to be as shown below.

Proposed land to be released and developed for industrial	Potential yield (ha) ^{***}	Targeted yield (ha) ^{****}	2011-2015	2016-2020	2012-2025	Total
CURRENT VACANT LAND						
Light industrial	266	250	25	60	165	250
General Industrial	142	140	25	90	25	140
Strategic industrial	61	60		50	10	60
Total			50	200	200	450
CURRENT IDENTIFIED PRECINCTS						
1 DARWIN CITY CENTRE	0	0				0
Light industrial						
General Industrial						
Strategic industrial						
2. DARWIN INNER SUBURBS	145	60	20	35	5	60
Light industrial	145	60	20	35	5	60
General Industrial						
Strategic industrial						
3. DARWIN NORTHERN SUBURBS	100	50	5	15	30	50
Light industrial	100	50	5	15	30	50
General Industrial						
Strategic industrial						
4. WINNELLIE/BERRIMAH	3,100	640	150	240	250	640
Light industrial	240	200	100	90	20	210
General Industrial	60	50	20	20	10	50
Strategic industrial	2,800	390	30	130	220	380
5. PALMERSTON	134	40	5	10	25	40
Light industrial	134	40	5	10	25	40
General Industrial						
Strategic industrial						
6. WEDDELL	1,200	105	0	0	105	105
Light industrial	1,200	105	0	0	105	105
General Industrial						
Strategic industrial						
7. LITCHFIELD	1,600	320	50	105	165	320
Light industrial	50	20	20			20
General Industrial	550	100	30	30	30	90
Strategic industrial	1,000	200		75	135	210
8. COX PENINSULA	1,152	0				
Light industrial	152	0				
General Industrial						
Strategic industrial	1,000					
ANY AREA	1,000+					
Specialised large industry (note)						
Total (ha)	7,431	1,215	230	405	580	1,215

Source: MacroPlan, Elton Consulting (2009)

* MacroPlan project calculation of annual need of 35 ha to meet NT High Series population growth

** MacroPlan calculated the required rolling stock land to ensure sufficient industrial land for 15 years

*** potential yield was calculated in the project based on desk top assessment

**** Targetted yield is the targetted amount of ha that is required over 15 years to ensure demand is met.

(note) - specialised industry is identified land for large industries who have a specialised field (e.g. Aluminium) and require large parcels of land

Appendix C (i)

Residential land use – investment in infrastructure forecast: headworks costs

Name	Estimated total additional dwellings	Headworks Cost (\$M)	Cost per dwelling (\$)
Weddell	10,000	\$311	\$31,000
Cox Peninsula (initial)	3,300	\$1,340	\$405,000
Cox Peninsula (ultimate)	40,000	\$1,780	\$45,000
Berrimah Farm and Darwin Prison	1,200	\$36	\$30,000
Palmerston Eastern Suburbs	3,000	\$110	\$37,000
Lee Point (Muirhead)	1,786	\$56	\$31,000
North Karama	300	\$9	\$30,000

Source: Aurecon 2009; DPI 2009 Headworks development Costs

The following should be noted in relation to the headworks costs presented in the above table:

- > *The cost of servicing Weddell residential area has been shared equally with the Weddell industrial area.*
- > *Where major infrastructure items benefit other area, a percentage of this cost has been allocated. For example, 30% of the cost of the Weddell Arterial has been allocated to the cost of servicing Weddell, as this freeway also services Palmerston, Middle Arm, Cox Peninsula and the greater rural area to the south and west of Weddell.*
- > *In order to supply the early stages of Cox Peninsula, most of the major headworks items are required. It has been assumed in the calculations that 75% of the total headworks cost is required for the initial stages. This predominantly consists of infrastructure costs associated with water and electricity supply. The Land Use Plan provides for both immediate (241) and future expansion opportunities in Cox Peninsula. This table demonstrates costings if 3,300 or 40,000 dwellings were developed.*

In addition to headworks costs, internal development costs for the Greenfield development range from \$80,000 to \$120,000 per lot depending on such factors as topography, soil conditions, land use mix, WSUD treatment and landscaping. For example, the internal development cost for Berrimah Farm and Darwin Prison areas has been determined to be around \$104,500 per lot.

In-fill development and densification costs vary depending on the extent to which a particular site is currently serviced. Predominantly in-fill development and densification consists of upgrading the water, sewer and electrical supply to cater for the new lot arrangement. The cost is typically in the order of \$20,000 to \$30,000 per lot. Upgrading of external headworks is covered by the PWC WASSEP and DSEP fees allied to the development.

Appendix C (ii) Cost per type of housing provision

The anticipated costs for the housing typology across the Region are outlined below:

Growth Plan	
Total Population	184,494 people*
Additional dwellings	28,060
Cost (\$M)	
Land release	\$579.4m
Densification	\$90m
Infill sites	\$152.3m
Future land	\$1,460m

Source: Aurecon 2009; DPI 2009

Notes:

**Based on the NT Population High Series to 2021 and a straight line forecast to 2025.*

- 1. Land Release - Includes Weddell, Lyons, Muirhead, Johnston, Zuccoli, Mitchell, Rosebery, Bellamack, Berrimah Farm and Berrimah Prison*
- 2. Assumes \$20k average headworks cost associated with each lot*
- 3. Table includes costings for 3300 dwellings for Cox Peninsula + 4000 dwellings in Noonamah area.*
- 4. It has been assumed that 75% of the total headworks cost is required for the initial stages of Cox Peninsula. This predominantly consists of water and electricity supply infrastructure costs.*

Appendix C (iii) Industrial land use – investment in infrastructure forecast

Industrial land development headworks costs are presented in the table below. The costs are for the full development of these areas and, should staging occur, the relative proportion of cost should be applicable.

Headworks Development Costs – Industrial

Area	Estimated Area (Ha)	Total Development Cost (\$M)	Costs per Ha
Weddell	1,200	890	\$538,000
Aerial Farm	66.36	25	\$380,000
Pinelands	74.92	27	\$362,000
Humpty Doo	133.17	52	\$391,000
Hidden Valley (Explosives Reserve)	256.62	133	\$520,000
Archer	129.54	49	\$377,000
Middle Arm	1,881.58	422	\$224,000
Yarrawonga (Defence Support Hub)	53	18	\$347,000
Darwin Business Park	34	19	\$544,000
Strangways	352.24	171	\$485,000
Tivendale Road	81.53	33	\$405,000
Hidden Valley Business Park	45.05	16	\$361,000
Wishart Road	103.23	37	\$360,000

Source: Aurecon 2009; DPI 2009

Appendix C (iv)

Additional Major Infrastructure Costs

Infrastructure	Cost
Weddell Arterial	\$178M
Over water link between East Arm and Blaydin Point	\$165M
Over water link between Channel Island Rd and Cox Peninsula Rd	\$202M
Ferry Terminals	\$50M
Total	\$595M

Source: Aurecon 2009; DPI 2009

Appendix D

Background data

Population Data

The particular data sources for the population used as a basis of the Greater Darwin Region Land Use Plan – Towards 2030 are from the following sources:

- > Australian Bureau of Statistics (ABS). *Regional Population Growth, Australia, 2008-09*. Catalogue No. 3218.0. Released 30/03/2010.
- Australian Bureau of Statistics (ABS). *Population by Age and Sex, Regions of Australia*. Catalogue No. 3235.0. Released 11/08/2009.
- Australian Bureau of Statistics (ABS). *2006 Census of Population and Housing Darwin (SD 705)*.
- > The population projection set for the Land Use Plan for the Greater Darwin Region is the population as projected by the NT Treasury for the Northern Territory as a whole and the Greater Darwin Region to 2021, then using a straight line projection to 2025 for the Region.
- > The residential growth of up to an additional 28,060 dwellings was calculated by considering the predicted population growth and the average household size of 2.57 persons per household (NT Treasury).

Data sets informing locations of dwellings

Through a series of detailed investigations by planners and economists, the locations of the proposed increase in dwellings were developed. These investigations considered the combined effect of a range of factors including forecast population and economic growth, population changes including the increasing numbers of people living alone, constraints on available urban and rural village land and the provision of well planned and funded social and transport infrastructure. The Greater Darwin Region Land Use Plan – Towards 2030 provides:

- > A balanced approach between obtaining a compact regional and urban form and the challenges posed by climate change, sprawl and access to social facilities.
- > Linking land use and transport planning.
- > Creating transit corridors to link to activity corridors and transit nodes.
- > Developing existing vacant or underdeveloped land in urban areas, known as infill or brownfield development.

- > Facilitating housing diversity by identifying potential areas where duplex and multiple dwelling urban development can occur, particularly focusing on areas close to activity centres and along activity corridors.
- > Enabling some smaller lots within and around rural nodes to improve housing choice in rural areas.
- > Development of currently identified Greenfield development areas.
- > Development of potential future land areas, such as Cox Peninsula.

Data informing projections of needed retail, commercial and industrial

Future retail growth

- > The recent growth in the Region has placed pressure on the availability of land for retail floor space.
- > There is a need of an additional 60,000 sqm of retail floor area to service the current population.
- > Future demand for retail floor space will increase from 194,900 sqm in 2006 to 319,915 sqm in 15 years, an increase of 125,000 sqm.
- > Future bulky goods retail floor space will increase from 78,000 sqm in 2006 to 153,935 sqm in 15 years, an increase of an additional 76,000 sqm.
- > The proposed airport retail/ business park development, earmarked to provide about 45,000 sqm of retail and related floor space is likely to meet current retail floor space requirements.

Determining the amount of additional retail required

- > The amount of retail space was calculated by taking the amount required in the future minus the current amount and dividing that area by the 15 year period to obtain the amount of retail floor area to meet the growing population.

- > Taking into account where current retail is provided, land constraints opportunities for development, retail growth was allocated per area depending on current hierarchy of activity centres, or new Greenfield development. For example a new retail centre would be required in Weddell in the future.
- > An expenditure based approach and use of economic modelling is the methodology used to determine future retail provision.
- > The assessment of the amount of future retail land to accommodate growth is based on a range of factors, including:
 - The future population growth forecast
 - Current and future floorspace per capita (sqm per person) of retail supply available, which is approximately 1.82 sqm of floor space per every resident
 - Retail turnover per retailer
 - Retail turnover growth
 - Retail turnover mix
 - Average per capita expenditure levels
 - The amount of floorspace that can be sustained by the forecast investment.

Future commercial growth

- > The office hierarchy comprises core office, located within the Darwin CBD and secondary office in other activity centres.
- > There is future demand for an additional 72,000 sqm of core office space within 15 years and an additional 18,000 sqm of office space within other activity centres.
- > In total an additional 90,000 sqm is predicted to be needed by 2025. The timing and staging of take up of additional office space is influenced by a complex range of factors.
- > Commercial office space is calculated on commercial office space per capita. The study area currently requires 0.87 sqm per capita of core office space, and this is anticipated to increase to between 0.94 – 1.05 sqm per capita in 2025 years.

Determining the amount of additional office space required

- > The assessment of the amount of commercial floor area to accommodate growth described above considered a range of factors listed below:
 - The future population growth forecast
 - Understanding the current number of white collar workers
 - Understanding the composition of the current labour force participation rates, unemployment rates, types of industries and occupations
 - Forecasting employment by industry and occupation type (it has been assumed that the proportion of total white worker population will increase while blue collar employment may decrease.)
 - Understanding the hierarchy of office floor space
 - Forecasting jobs by location (e.g. working from home, workers who have a fixed location for a job or do not have a fixed location but travel around)
 - Considering employment self sufficiency and containment.

Future industrial growth

- > The Towards 2030 Land Use Plan's response to the challenges of growth means the need to provide for a 15 – year supply of zoned industrial land to meet market demand.
- > Industrial development will continue to be mostly focused around Darwin Harbour to enable access to the deep water port.
- > The current supply of vacant industrial land is about 470 hectares.
- > The Land Use Plan proposes a rolling land bank of 525 hectares to cater for a 15 year supply to maximise market choice and range of lot sizes.
- > The requirement, based on two different methodologies explained below, is between 287 and 525 hectares, depending on range of economic and population outcomes.
- > The Land Use Plan is framed around a take up rate of 35 hectares per annum.
- > There remains a need to identify a large area of land of around 1000 hectares or more, located away from residential areas but still within access of a deep water port, to accommodate future potential heavy industries and for further gas based industries.

Determining the amount of additional industrial land

Two methodologies were used in establishing sufficient industrial land for the Region's growth.

A consumption based approach

- > This studied recent take up of industrial land from the current supply of 470 hectares as well as location and take up based on market trends and economic conditions.
- > This showed a need for between 25 hectares (medium growth) to 35 hectares (high growth) per annum.
- > If this growth was achieved, there is a need for around 400-560ha of industrial land over the period between now and 2025.

A labour force based approach

- > This researched the relationship between available industrial land and the projected blue collar labour force.
- > Labour force assessment looks at future labour force based on the unemployment rate, number of people at an age to participate in the economy and the mix of industries. This assessment does not estimate future requirements of Specialised Industry and Defence or large scale port and gas related industries with low employment yields.
- > The Labour force based approach results in a requirement per annum of between 14 hectares (NTG base population projection series) to 18 hectares (high population projection series).
- > To support this growth 220 – 300 hectares of industrial land would be needed between now and 2025.
- > These estimates do not take into account future specific requirements of large scale industries.

Glossary of terms

Activity Centres

Are mixed-use urban areas where there is a concentration of business, administrative, civic, retail, entertainment, employment, research, education and community uses and, increasingly, residential development. Activity Centres allow for clustering of uses and activities to provide social, environmental and economic benefits for the community and business such as improved accessibility and productivity. They are an important concept in urban planning for transit oriented development, which seeks to intensify land uses around public transport nodes to facilitate greater sustainability in the way people and goods move around cities.

Reference: Melbourne 2030, City of Sydney 2030.

Accessible transport

Accessible transport is public transport that meets the needs of all residents, visitors and workers. Accessible public transport is vital for people with disabilities and those with impairments in particular, so that they have the opportunity to play a full part in society. Accessible transport ensures that every stage in the journey can be accessed by people with disabilities.

Affordable housing

Housing that is affordable for lower to middle-income households, when housing costs are low enough to enable the household to meet other basic, long-term living costs. For example, housing costs should be less than 30 per cent of the household income for occupants in the bottom 40 per cent of household incomes. Lower income households are households with income in the bottom 10 to 40 per cent of all household income distribution.

In the 2008 Federal budget, moderate income was determined as up to \$70,000 for a household.

Source: Australian Government; Department of Families, Housing, Community Services and Indigenous Affairs.

Accessibility

Refers to the extent to which people are able to access employment, goods and services, either through proximity or transport links to connect places.

Compact city

The compact city is designed to make more efficient use of existing land resources and infrastructure by containing new development within existing urban areas. The compact city helps to reduce car usage as public transportation becomes more viable at higher urban densities. In addition, the compact city provides for better accessibility and reduced travel times, which help contribute to an improved quality of life.

Densification / growth

Areas where medium and high density development enable more dwellings to be accommodated to meet the needs of a growing population.

Medium density

There is no one definition of medium density housing. It is sometimes used to refer to all housing other than detached dwellings or high-rise flats, or to specific forms of single and two-storey attached housing with group titles. It can be expressed in various ways, including people per unit area, dwellings per unit area or floor space ratio. It is most useful to define medium density housing in terms of land area per dwelling unit. In the context of This Land Use Plan, the density generally assumed by the term is around 60 – 150 sqm land area/dwelling unit.

Reference: Australian Housing and Urban Research Institute (Southern) 2002.

Rural villages

A location that comprises residential dwellings, some urban activity and is not located within the urban footprint.



Northern
Territory
Government

Department of Lands and Planning
GPO Box 1680
Darwin NT 0801
www.nt.gov.au/planning