Alice Springs is the geographic centre of Australia – a place rich in natural and cultural heritage and a major economic hub servicing the southern region of the Northern Territory, as well as remote areas of South Australia, Western Australia and Queensland.

As the largest urban centre outside of Darwin and Palmerston, it is important to ensure Alice Springs has a plan to deliver the infrastructure and services that are necessary to support the changing needs of a diverse and growing community.

The Draft Alice Springs Regional Land Use Plan 2016 provides a long-term strategic framework to anticipate and manage future growth and development in the Alice Springs region.

It integrates land use, transport and infrastructure planning to deliver more sustainable and cost-effective outcomes for the community while safeguarding natural resources for future generations.

The Plan is the culmination of six months of investigations and consultations, including conversations with the community following the early release of a detailed discussion paper and the later release of a draft plan for further feedback.

As a reference document in the Northern Territory Planning Scheme, the Plan will guide more detailed planning including the future development of Area Plans in consultation with the Alice Springs community.

The Planning Commission is pleased to recommend the Draft Alice Springs Regional Land Use Plan 2016 for incorporation in the Northern Territory Planning Scheme.

Hon Gary Nairn AO
Chairman
Northern Territory Planning Commission

March 2016
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Executive Summary
The Draft Alice Springs Regional Land Use Plan considers the future land use needs for Alice Springs. This policy framework will guide more detailed planning, including the preparation of future Area Plans. The Plan is based on future population thresholds of 32,000 and 40,000 persons, as compared to the estimated resident population of 28,667 in 2014.

The Plan seeks to recognise Alice Springs’ history, culture and heritage, as well as its geographical and environmental context and its role as a key regional economic and administrative centre.

The Plan establishes an overarching regional framework for the development of Alice Springs, which is intended to be incorporated in the NT Planning Scheme. The planned distribution of land uses are shown on the Land Use Structure Map which follows.

The Land Use Structure Map provides a vision for Alice Springs. The land uses shown on the Land Use Structure Map do not necessarily reflect existing land use zones as contained in the NT Planning Scheme.

The Land Use Structure Map and the Land Use Plan will ultimately inform the potential rezoning of land, which will be the subject of a future separate process, including public consultation.

Urban Residential

Future residential demand will be accommodated both in the form of infill and greenfield development which collectively are shown as Urban land on the Land Use Structure Map. Urban land should promote a range of dwelling types to suit household, cultural and climatic needs. Adequate land supply needs to be facilitated in order to address housing choice and affordability.

Indigenous living areas are proposed to be integrated into the Urban land areas.

Activity Centres

The Alice Springs CBD forms a regional centre role and is the dominant commercial, cultural, administrative, tourist and civic centre. The CBD will be supported by existing and future (Kilgariff) local activity centres which service their population catchments which are distributed across the urban areas.

Activity Centres are identified as Commercial land on the Land Use Structure Map. Commercial land also includes linear corridor areas along the railway line and Stuart Highway, which will contain a mix of retail, office, warehouse and industrial uses.

Industrial

Light industries are presently established in precincts located to the north-west of the CBD. There is limited vacant land zoned for industrial uses, with the exception of the Brewer Estate, which has been purposefully located and established to accommodate more hazardous industrial activities.

Additional opportunities for light and general industries have been identified in Abattoir Valley and in Arumbera. The potential for the establishment of an intermodal facility requires further investigation in order to potentially enhance the efficiency of the transport and logistics sector and to support local business.

Rural Areas

Existing rural land will be retained to support pastoralism, agriculture and horticulture and protect the economic development of the Alice Springs region in the future.

Potential exists to establish rural living/housing opportunities within rural areas, subject to the preparation of future Area Plans. Rural living areas will need to avoid Water Management Areas, including the Roe Creek Borefield.

Natural and Conservation Areas

Alice Springs is characterised by an arid environment together with vast open spaces and conservation areas. The Plan recognises the continued contribution of these natural and conservation areas for the benefit of both the environment and Alice Springs community.

Potential exists for these areas to accommodate tourist or self-sustained residential uses, with minimal impacts on the environment.

Community Facilities

Alice Springs provides facilities and services to the wider region, particularly in the health sector, and has an important role in supporting remote communities. Future population growth will ultimately require the upgrade of a range of facilities, or the provision of new facilities including health services, child care centres, educational establishments and sport and recreation facilities.

In particular, appropriate levels of community facilities and services will be required to address population growth south of Heavitree Gap.
Infrastructure

Water, sewer, electricity, gas and communication networks will need to be augmented to cater for future population growth.

The Plan acknowledges the significance of Heavitree Gap, and future development south of the Gap is likely to represent a particular challenge for the provision of infrastructure. The cultural importance of the Gap must be recognised in respect to any additional infrastructure established through Heavitree Gap.

Future development will need to ensure the protection of natural freshwater sources and generally of sites of cultural and natural importance.

Transport

The Stuart Highway is the primary access route through Alice Springs and is used by a range of vehicle types. It also traverses Heavitree Gap, adjacent to the railway line. Future development south of Heavitree Gap will increase vehicle traffic and consequently is likely to require upgrades of the road network through the Gap.

Innovative engineering solutions would be required to address traffic increases.

A number of intersections within Alice Springs will need to be upgraded to manage increased traffic volumes. Road crossings will need to take into consideration flooding constraints associated with the Todd River.

The Adelaide to Darwin railway line will continue to accommodate freight and passenger services. A new railway station and tourism precinct is envisaged adjacent to the CBD. A new intermodal terminal is also being investigated south of the township.

Natural Resources

Water supply is drawn from confined aquifers within the Amadeus Basin. It is anticipated that a new borefield will need to be established at Rocky Hill, south east of Alice Springs. Water resources will need to be protected and managed in order to ensure their ongoing availability to service township needs, together with agriculture and horticulture activities.
Introduction
The Draft Alice Springs Regional Land Use Plan has evolved from previous work and is about identifying a structure which recognises the characteristics of the various components of the region.

The title of this Draft Alice Springs Regional Land Use Plan 2016 includes the year of publication to establish the vision, goals and intended outcomes of future development at a particular point in time. The documented vision and goals will inform more detailed planning for particular localities and the means, sequence, timing and specific responsibilities for implementation.

Plan Boundaries

The Alice Springs Region, for the purpose of this plan is defined as the whole of the Alice Springs Municipality. The defined region is shown on the Study Area map and also includes:

- the Joint Defence Facility Pine Gap (JDFPG) to the west
- the area known as Undoolya to the east
- the area known as Amoonguna to the south-east
- the Brewer Industrial Estate and the Alice Springs Correctional Centre to the south, and surrounding rural areas

The Alice Springs Central Business District, the administrative centre of the region, is located north of Heavitree Gap, otherwise known as The Gap.

Recognising that boundaries based on administrative entities are artificial in a natural environment, the investigations are not blind to relevant environmental and development interdependencies outside the administrative boundaries.

Opportunities for future development are constrained by a number of factors, including but not limited to:

- land capability
- water management areas
- existing Conservation areas
- flood risk
- cultural heritage
- the economic delivery of services and infrastructure

While engineering solutions can overcome some constraints, a framework for future development must be designed within the context of natural constraints and be sensitive to economic costs and impacts on the environment and culturally significant areas.
Plan Purpose

The Draft Alice Springs Regional Land Use Plan will shape the future development of the Alice Springs Region. It will consider the land use needs for Alice Springs and establish an overarching framework for future population thresholds of 32,000 and 40,000 persons, noting that the ABS Estimated Resident Population in 2014 was 28,667 persons.

It presents and summarises the findings that result from a broad range of investigations, including:

- demographics and population trends and projections
- residential supply and demand
- commercial and industrial supply and demand
- human service provision
- infrastructure and services
- transport/traffic
- cultural heritage
- land capability

The Planning Act (NT) and the Northern Territory Planning Scheme regulate the use and development of land in the Northern Territory. Schedule 2 of the NT Planning Scheme provides the opportunity to incorporate policies to guide interpretation of the provisions of the scheme. Area Plans in Part 8 of the Scheme identify more fine grained policy in relation to the expected nature of future development to further guide the interpretation of the scheme.

Incorporation of the Draft Alice Springs Regional Land Use Plan 2016 in Schedule 2 of the Scheme will establish a policy framework for the future development of the Alice Springs Region.

Given that timeliness and currency are imperative to the relevance of all levels of planning, it is envisaged that the Draft Alice Springs Regional Land Use Plan 2016 will be subject to review in response to future growth or other changing circumstances.

Plan Evolution

Functions of the Northern Territory Planning Commission include consultation with the community to inform the preparation of integrated strategic plans for inclusion in the NT Planning Scheme.

The Commission’s development of a Draft Land Use Plan for the Alice Springs Region involved an extensive process including:

- consideration of the strategic directions established by Framing the Future – the NT Government’s Strategic Plan
- review of past documents of relevance to the future development in the region including:
  - Alice Springs Land Use Objectives 1996
  - Mt Johns Valley Land Use Objectives 1996
  - Alice Springs Land Use Structure Plan 1999
  - Alice Springs Residential Development Study, 2009
  - Alice Springs Land Use Framework
  - Alice Springs CBD Traffic Management Study, 2013
  - Alice Springs CBD High Level Review of Public Parking Availability, 2013
  - Alice Springs CBD Discussion Paper, 2014
  - Alice Springs Land Use Study
  - Northern Territory Compact Urban Growth Policy, 2015
  - NT Government’s Major Works (as of 2012)
- the release of a Discussion Paper and associated Background Investigation Report, followed by a workshop with stakeholders and consultation
- the release of the Draft Alice Springs Regional Land Use Plan in November 2015 for public consultation.
Format of the Plan

The sections of this Draft Alice Springs Regional Land Use Plan can be summarised as follows:

- Introduction: identifying regional and sub-regional boundaries, the context within which the plan has been prepared, its evolution from previous work, and its purpose and role in guiding future development

- Regional Vision and Strategic Approach: incorporating key themes that inform the desired future for the region

- Regional Context and Policies: summarising how Alice Springs has evolved to date, the key factors that have influenced and will continue to influence development and describing desired outcomes and objectives that will guide land use planning decisions in the Alice Springs Region

- Land Use Structure: describing the overall structure of existing and future land use and development, discussing factors of influence in each land use category and highlighting constraints and opportunities
Vision and Strategic Approach

The Draft Alice Springs Regional Land Use Plan 2016 draws on the aspirations of the community to establish a strategic direction for long term growth.
Vision

The vision guiding this land use plan is a response to Alice Springs’ regional geography and history, recognising its present and future roles in a Northern Territory and national context.

The vision also captures many community aspirations expressed in submissions and at stakeholder briefings. Key elements of the vision for Alice Springs in the context of the Government’s four strategic goals identified in Framing the Future are outlined below.

Prosperous Regional Economy

- The Alice Springs Region continues to evolve as a place that is prosperous, sustainable and provides a diversity of lifestyles for residents
- The region continues to experience growth in a vibrant, diverse and prosperous regional economy that:
  - creates wealth and jobs as a national hub for transport, and a key centre for tourism
  - attracts new local, national and international investment

Confident Culture

- Alice Springs regional land use respects and promotes the local tangible and intangible indigenous culture
- Alice Springs is a multi-cultural centre, and should offer a healthy, active and enjoyable lifestyle taking advantage of the unique features the region offers

Strong Society

- The ongoing land use in, and development of, the Alice Springs Region facilitates people continuing to enjoy a strong sense of community, while valuing a diverse population and range of cultures
- The region supports remote communities in the wider area and continuously offers opportunities and services for all

Balanced Protection and Use of Regional Environment

- Alice Springs regional land use supports sustainability, catering for economic and community growth in balance with protection of the environment
- This is a developing region where residents live in harmony with the arid environment, making the most of all seasons, the natural biodiversity and landscape
National Centre of Strategic Importance

- As the only major city in Central Australia, Alice Springs continues to benefit from its role as a major service and tourism centre.
- As the second largest urban centre in the Northern Territory outside of Darwin/Palmerston, Alice Springs has a key role in administration and governance.

Strategic Approach

The Draft Alice Springs Regional Land Use Plan 2016 establishes an overarching regional framework to manage growth in anticipation rather than in response. The Plan includes a Land Use Structure Map that identifies development opportunities throughout the region and, within the Regional Context and Policies section, objectives which will guide more specific planning within the context of these opportunities.

The focus of the strategic framework and supporting policies is better integration of land use, transport and infrastructure planning, delivery of more sustainable and cost-effective outcomes for the community, with sensitivity to environmental and heritage values.

More detailed planning and subsequent development that is aligned with this strategic approach and informed by the objectives, will assist in balancing the community’s social and economic needs and the needs of the environment.
Regional Context and Policies
Alice Springs is strategically located within the centre of Australia, and is the principal service centre for the region. Alice Springs plays an important role in relation to transport and logistics, tourism and defence. Above all it is the centre of regional community, civic, government and social services for a particularly large region.

A number of factors affect the options available to accommodate future growth. These include the natural environment, cultural influences and the efficient provision of infrastructure to support future growth, with servicing through Heavitree Gap a significant constraint.

This section of the Plan summarises elements that affect the planned land use structure and outlines policies that will guide more detailed planning and land use decisions.

The Past

Before white settlement, Alice Springs was inhabited by the Arrernte Aboriginal people. Mparntwe (pronounced mbarn-twa) is the Arrernte word for Alice Springs and was created by the actions of several ancestral figures including the caterpillar beings Ayepe-arenye, Ntyarlke and Utnerrengatye, with the MacDonnell Ranges being but one of their creations.

Creation stories also describe traditional links with areas as far afield as Urlatherrke (Mt Zeil) in the West MacDonnell Ranges and Port Augusta in South Australia.

Within the Alice Springs region, some sites were used as traditional ceremonial camping areas. Some of these have become the areas that are now commonly known as ‘town camps’.

Arrernte people continue to live in Mparntwe, observe traditional law, look after the country and teach children the Arrernte language and the importance of their culture.

In 1862 explorer John McDouall Stuart led an expedition (his third and final attempt) through the Centre, to the north coast, navigating and mapping the country for white settlement. As arguably Australia's pre-eminent explorer, the Stuart Highway honours his remarkable feats of exploration and leadership.

The Alice Springs township was also known as Stuart during this time.

Following in Stuart's footsteps, the construction of the Overland Telegraph Line from Adelaide to Darwin was completed in 1872 and made it viable for pastoralists to take up leases in the Centre.

However, it was the discovery of alluvial gold at Arltunga, about 100 km east of Alice Springs, in 1887 that provided a population boom for the Centre.

Until the early 1930s, Alice Springs was the name given to the waterhole that was discovered and named by Government Surveyor WW Mills in March 1871, while exploring the MacDonnell Ranges during the construction of the Overland Telegraph Line.

The dual reference to Stuart and Alice Springs caused such confusion for administrators in Adelaide that on 31 August 1933 the township of Stuart was officially gazetted Alice Springs.

Alice Springs is named after Alice Todd, wife of the Superintendent of Telegraphs, Sir Charles Todd.

The Present

Alice Springs is characterised by a transient population with relatively high levels of migration into and out of the township. Population growth levels have fluctuated over the last twenty years however the 2014 estimated resident population indicates a population increase since 2011.

Today, challenges for the community include housing affordability and issues with the provision of essential infrastructure. Establishing certainty with respect to long term policies will assist in key infrastructure and investment decisions and will be a key ingredient for successful and appropriate growth.

A significant stakeholder in that policy development is the indigenous population. Aboriginal people are diverse and culturally rich. Their lands are resource rich and therefore a major contributor to the growth of Alice Springs.

A significant proportion of the indigenous population reside in indigenous living areas, most of which were initially settled in the 1970s with no connection to basic services such as water or electricity. Integration of the indigenous living areas into the urban area represents a key opportunity.

Many detailed technical investigations that supported previous strategic long term planning for the Alice Springs Region remain relevant today and have been the starting point for this plan. Much of this previous work has been reviewed and updated as part of the Background Investigation Report which has informed this Plan.

Railway yards in the 1930's
The Future

The fundamental factors to be considered in planning for the future are potential population and economic growth. Population growth drives residential land development, and has a strong influence on retail spending and floor space demands. Economic growth generates employment opportunities which further supports consumer confidence, household spending together with population growth and housing demand.

The ABS identified at the 2011 Census a population for the Alice Springs Region of 25,185 persons. At June 2014, the ABS determined an Estimated Resident Population of 28,667 persons for the Alice Springs Region. Of that population, 11% is identified as Indigenous. The contribution of the indigenous population to the economy of the region is expected to increase in the future as they leverage their land assets to create economic and social benefits for themselves and their communities.

Threshold populations of 32,000 and 40,000 have been adopted to guide the identification of land required to accommodate growth in the short term and the longer term.

Targets based on projected population allow responses to emerging needs to facilitate efficient and economic investment in infrastructure and land development for housing, industry, commerce and community facilities.

Land for Residential Development

Additional population will increase the demand for housing. An additional population of approximately 3,333 persons (for a total of 32,000 persons), is expected to generate a gross demand for 1282 dwellings, based on the current average occupancy rate of 2.6 median persons per household. A further 8,000 population (for a total of 40,000 persons) is expected to generate a gross demand for 3,077 additional dwellings (a total of 4,359 dwellings).

Given the relatively stable characteristics in respect to the age profile and household composition, the predominance of single dwellings is expected to continue and be reflected in the demand for residential land.

Single dwellings are not the most efficient use of land, resulting in a lower yield per hectare as compared to other housing forms, such as flats and apartments. The continued predominance of single dwellings has implications in respect to the urban footprint and form of Alice Springs. Encouraging other household forms can result in the more efficient use of land and cost effective delivery of services. Opportunity exists for multiple dwellings to be accommodated in the CBD or immediately adjacent to existing local centres.

Dual occupancy also provides a potential opportunity to increase population near existing centres and services.

In terms of underlying demand, 220 dwellings were approved for construction in Alice Springs between 2010-2014, which represents an average of 44 dwellings per year. This is greater than the longer term average of 25 to 30 dwellings per year. It is important to note that the number of applications for new dwellings is influenced not only by demand, but also land supply factors. In other words, dwelling applications are not generated if there is not land available to develop.

On the assumption that future housing will be established generally in accordance with the existing housing mix, Table 1 identifies the additional dwellings by type, anticipated to be required to accommodate the future population growth in Alice Springs.

Table 1: Projected Dwelling Demand by Type

<table>
<thead>
<tr>
<th>Demand for additional dwellings</th>
<th>Population threshold of 32,000</th>
<th>Population threshold of 40,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>770</td>
<td>2,615</td>
</tr>
<tr>
<td>MD</td>
<td>384</td>
<td>1,308</td>
</tr>
<tr>
<td>Rural</td>
<td>80</td>
<td>270</td>
</tr>
<tr>
<td>Other</td>
<td>48</td>
<td>166</td>
</tr>
<tr>
<td><strong>Total additional dwellings</strong></td>
<td><strong>1,282</strong></td>
<td><strong>4,359</strong></td>
</tr>
</tbody>
</table>

On the basis that medium density housing will be encouraged within or adjacent to activity centres, the relative split between infill (30%) and greenfield housing (70%) demand is identified by Table 2.

Table 2: Projected Greenfield/Infill Contribution

<table>
<thead>
<tr>
<th>Demand for additional dwellings</th>
<th>Population threshold of 32,000</th>
<th>Population threshold of 40,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infill</td>
<td>384</td>
<td>1,308</td>
</tr>
<tr>
<td>Greenfield</td>
<td>898</td>
<td>3,051</td>
</tr>
<tr>
<td><strong>Total additional dwellings</strong></td>
<td><strong>1,282</strong></td>
<td><strong>4,359</strong></td>
</tr>
</tbody>
</table>
The Plan identifies a number of locations to accommodate these various forms of residential development across the region, including urban and rural areas.

Urban areas identified by the Plan include infill options in Alice Springs and the continued staged greenfield development at Kilgariff and Larapinta. Future growth areas include land at Undoolya, Mount Johns Valley, and Emily Hills.

Table 3 provides a summary of future potential suitable greenfield residential areas and the respective allotment and dwelling yields in these areas.

Table 3: Summary of Potential Residential Yields by Location

<table>
<thead>
<tr>
<th>Growth Area</th>
<th>Potential Lot (Dwelling) Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilgariff</td>
<td>1,800</td>
</tr>
<tr>
<td>Larapinta</td>
<td>300</td>
</tr>
<tr>
<td>Mount Johns</td>
<td>700</td>
</tr>
<tr>
<td>Emily Hills</td>
<td>1,024</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,824</strong></td>
</tr>
</tbody>
</table>

It is evident that these areas can potentially accommodate a significant proportion of the future housing supply required to support a population of 40,000 persons. Additional land may however be required if infill development does not progress as anticipated.

The Plan also endorses the continuation and ongoing development of rural living/rural residential lots which will contribute to the supply of housing.

The Plan recognises the importance of concurrent development occurring in a number of locations to ensure an adequate supply and variety of housing types and to generate competition in the market. The timing of development of residential land within the land use structure established by this Plan will be influenced by future infrastructure investigations and the preparation of Area Plans for individual localities.

The land identified for urban development also includes Community Living Areas which are small indigenous living areas that have been excised from pastoral leases. They all contain distinct indigenous communities based on language and kinship.

It is difficult to accurately estimate the population of these areas, due to a high level of visitation and mobility to, between and within the indigenous living areas.

Indigenous living areas currently experience a number of issues, including the shortage of housing, overcrowding, the lack of road maintenance and social infrastructure.

In order to support the housing needs of the indigenous population, the following actions could be considered:

- widen the range of housing forms and promote affordable housing choice
- provision of basic service infrastructure including social services and associated facilities

The above should be considered in continuous consultation with the indigenous community and stakeholders.

Land for Retail Development

The CBD Discussion Paper\(^3\) and recent additions to the NT Planning Scheme\(^4\) presented a number of considerations and concepts and more critically introduced a number of policies that are relevant to the potential future development of the CBD.

These included:

- compact centres with higher density and suitable transitions to lower density areas
- building height to be increased from 3 to up to 8 storeys in some areas, under certain criteria
- increased focus on urban design and architecture
- protection of key views and vistas
- enhanced pedestrian amenity, weather protection and shading
- crime prevention through environmental design

The potential long term expansion of the CBD to incorporate the western area around Whittaker Street has been identified in the NT Planning Scheme. The expansion is envisaged for future commercial, service commercial and industrial development, and a potential transport interchange.

Based on existing floor space provision within Alice Springs, the demand for additional retail floor space within the CBD is not likely to be significant in order to cater for a future population of 40,000 persons.

Expansion of the CBD will be at odds with the benefits that accompany intensification, particularly where new development includes a substantial residential component. Planning policies that facilitate increased building heights also need equal emphasis on amenity and place making in order to capture desired urban character and preserve views from and to the surrounding natural setting.

While the primacy of the CBD should be retained and reinforced, Alice Springs lacks local centres which provide a diversity of offering and experiences. Considering measures to increase the viability and attractiveness of such centres is important. Such centres have the potential to further develop, however the viability of these centres will only improve should their catchment populations increase, through increased residential densities adjacent to the centres.

\(^3\) Alice Springs CBD Discussion Paper, 2014

\(^4\) Northern Territory Compact Urban Growth Policy, 2015
It is expected that approximately 1,800 dwellings will be ultimately developed in Kilgariff, resulting in a potential population of 4,680 persons. Given that community uses such as a primary school could also be established in Kilgariff, there should be sufficient demand (in terms of retail spending from within the catchment population) to support the establishment of a local/neighbourhood centre in Kilgariff, when it approaches full occupancy.

This future centre could include a small scale supermarket of 1,500-2,000 square metres, and potentially specialty retail and community uses. It is unlikely retail activity would be viable in the early years of the development.

The Area Plan for Kilgariff identifies a future commercial area which could accommodate such a centre.

Land for Industrial Development

Regional and national economic performance is likely to have a significant influence on growth in general and on industrial development. Population growth will have the strongest influence on the growth of building, construction, light and service industries, such as hardware, building supplies and auto repairs.

The growth of general and strategic industrial uses will likely be driven by many factors including the growth in transport, storage and logistics to meet the growing demand for consumer items.

The existing proportion of blue collar workers in Alice Springs is approximately 26%. A population of 32,000 would theoretically represent an additional blue collar workforce of 867 persons, and a population of 40,000 would represent an additional blue collar workforce of 2,080 persons.

Based on a general rate of 15.7 industrial jobs per hectare, Table 4 identifies the following industrial land demand for each population threshold. It is evident that 133 hectares are anticipated to be required to service a 40,000 persons.

<table>
<thead>
<tr>
<th>Future industrial employment</th>
<th>Population threshold of 32,000</th>
<th>Population threshold of 40,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce (number of jobs)</td>
<td>867</td>
<td>2080</td>
</tr>
<tr>
<td>Land equivalent (ha)</td>
<td>56</td>
<td>133</td>
</tr>
</tbody>
</table>

Arumbera

Arumbera is located south of Heavitree Gap. The land is relatively flat, and is located adjacent to major road and rail infrastructure. The Department of Lands, Planning and the Environment (DLPE) was granted an Authority Certificate in 2012 which enabled the development of the site for industrial purposes.

Subsequently, an Area Plan was prepared and integrated in the NT Planning Scheme. Further planning is required to prepare development concepts including a detailed road layout and drainage network in response to any cultural constraints.

The Area Plan encourages the development of the land as a “future major employment area” and includes the potential creation of intermodal facilities. Although it supports industrial uses for a majority of the site, it also integrates:

- residential uses along the railway line, hence the retention of the existing Community Living Areas
- the retention of existing recreation uses to the west

As stated in the Area Plan, future investigations will need to address potential drainage and soil erosion issues. Any development will also need to be supported by preliminary investigations especially in regard to separation distances and buffer requirements (noise, odours, dust etc), depending on the type of industry.

Consultation will need to be undertaken to address necessary buffers to sacred sites and interface with and/or improvement to the existing Community Living Areas.

Noting the land demands identified above, Arumbera and Brewer have more than sufficient capacity to service a population of 40,000 persons. However the locations can perform different roles, with Arumbera best suited to light and general industrial use, with the Brewer Estate best suited to special industry, where external impacts may be greater.
Abattoir Valley

Abattoir Valley is land located to the north-west of the CBD. This land has potential cultural heritage constraints, however a portion of it may be developed, east of the railway line, subject to more detailed investigations.

Overall, the anticipated yield in terms of new allotments is not considered to be significant, however it does provide additional industrial / employment land opportunities north of Heavitree Gap.

Alice Springs Airport

The Alice Springs Airport presents a further long term opportunity. The draft Master Plan for the Airport envisages a mix of uses including residential, commercial, industrial and primary production, along with the air, road and other transport-based industries.

Regional Landscape and Natural Resources

Desired Regional Outcome

Natural attributes of the Alice Springs Region, that have high biodiversity values and contribute to the amenity enjoyed by residents and the economy, are identified and managed sustainably.

The Alice Springs Region is rich in natural resources and associated natural attributes. These present many and varied opportunities for urban and rural development able to sustain human occupation in well-managed and attractive environments while contributing to the growth, wellbeing and prosperity of successive generations of local, regional, territory and national communities.

As elsewhere, natural resources must be used and managed in appropriate and sustainable ways, recognising the pressure that development can place on finite and renewable resources and the environment. Therefore, development opportunities must be weighed against the constraints inherent to the natural environment and the potential impacts of developments.

While technologies can sometimes be responsibly and feasibly employed to overcome constraints, the economic and environmental costs may not always be justified. The preparation of a long term regional land use plan is a key factor in identifying the opportunities and constraints, and in establishing broad policies with the objective of delivering balanced outcomes over time.

Environment and Heritage

Key Environment and Heritage Objectives

- Recognise the positive contribution that the region’s natural landscape and habitats make to the amenity enjoyed by residents, tourists and other visitors and ensure detailed planning considers the need to further enhance these contributions by providing appropriate protection to contributors to the natural estate

- Protect and maintain the significant biodiversity and habitats (natural landscapes) of the region, including the threatened plants and animals under the Parks and Wildlife Commission Act (NT) and the Environment Protection and Biodiversity Conservation Act 1999 (Cth)

- Protect prescribed archaeological places and objects, including sites of Aboriginal origin via the provisions of the Northern Territory Aboriginal Sacred Sites Act (NT)

- Protect and manage regional culture and heritage recognising their capacity to enrich lives and provide a sense of connection for locals and visitors via the provisions of the Heritage Act (NT)

- Minimise the detrimental impact of development on the environment through conserving wildlife corridors and minimising human impacts on key populations and habitats of the unique flora and fauna of the region

The region’s landscape and environment contain many significant biodiversity values and provide a backdrop for tourism and recreation, as well as a range of opportunities for primary production. The ancient and rich Aboriginal heritage provides a context for traditional cultural activities and community recognition. Land is fundamental to indigenous identity and cultural vitality and as such, in any planning for growth, the identification and protection of heritage sites, buildings and objects based on indigenous culture, tradition and historical events must be prominent.

Flora, Fauna and Threatened Species

Alice Springs is located within the MacDonnell Ranges Bioregion of the Interim Biogeographic Regionalisation.

The MacDonnell Ranges Bioregion is one of the most important refugial areas in arid Australia, supporting many endemic plant taxa and isolated occurrences of plants more typically associated with higher rainfall areas (often referred to as relictual plants). It also supports resident populations of some plant and animal species that are significant at the Northern Territory and national level.
Many ecosystems and species are highly localised, typically to the most fire-protected, topographically complex sites (such as gorges and escarpments), and/or to places with unusually persistent moisture availability.

In Central Australia’s Sites of Conservation Significance, 43 nationally-listed and 72 Territory-listed threatened species are found.

**Conservation Zones**

Sites of Conservation Significance, Conservation Zones and National Parks for the region are shown on the Sites of Conservation Significance Map.

DLPE has identified 67 of the most important sites for biodiversity conservation within the Territory. Each site has been assessed as being of National or International Significance based on its biodiversity. The recognition of these sites imposes no additional regulatory or legislative requirements or control on management and use of the land, over and above any particular existing requirements of the area.

The MacDonnell Ranges are considered internationally significant and are classified as a Site of Conservation Significance at a Territory level. About 11% of the Ranges is managed as conservation reserves and is used for conservation and tourism, while other parts are used for residential purposes.

There are also eight formal conservation areas within Alice Springs, including West MacDonnell National Park, Alice Springs Telegraph National Historical Reserve, Joint Geological Geophysical Reserve, Simpsons Gap National Park, Alice Springs Desert Park, Emily and Jessie Gaps Nature Park, Ilparpa Swamp Wildlife Protected Area and Kuyunba Conservation Reserve.

These locations provide substantial environmental, economic and social benefits. Parks, reserves, conservation areas and remnant vegetation have many functions; providing essential recreational experiences for residents, adding significantly to the amenity of residential areas and conserving native plants and animals.

Formal conservation areas such as reserves and National Parks within the Territory are declared under the Territory Parks and Wildlife Act (the Act). Declaration under the Act specifies appropriate land use within the conservation areas and all are managed by the Parks and Wildlife Commission NT.
Areas of Natural Significance

LEGEND
- Study Area
- Alice Springs CBD
- Railway
- Arterial Road and Transport Corridor
- Existing Collector Road
- Planned Collector Road
- Airport
- River / Creek
- MacDonnell Ranges
- National Parks and Protected Areas
- Conservation Zones
- Site of Conservation Significance

National Parks and Reserves
1. Tjantjá / West MacDonnell National Park
2. Alice Springs Telegraph Station Historical Reserve
3. Joint Geological / Geophysical Reserve
4. Simpson's Gap National Park
5. Alice Springs Desert Park
6. Yeperenye / Emily And Jessie Gaps Nature Park
7. Ilperpa Swamp Wildlife Protected Area
8. Kuyunba Conservation Reserve
Land Suitability

Key Land Suitability Objectives

• Evaluate potential for development within the context of the sustainable use of land by identifying opportunities and constraints associated with a variety of inter-related factors, including:
  ○ soil characteristics
  ○ natural vegetation
  ○ topography
  ○ water resources
  ○ natural drainage systems

• Minimise the potential costs associated with addressing impacts on the environment and appropriate locations for various land uses by giving priority to consideration of the suitability of land

Evaluating the suitability of land within the region for particular land uses and specific developments is a key element in preparing a regional land use plan. Land and water resources have a fundamental influence on determining an appropriate land use structure.

In simple terms, land suitability refers to the suitability of a given area to accommodate a particular land use. Land evaluation is the process of evaluating the suitability of land to accommodate different land uses, so potential consequences can be predicted.

Land may be inherently fit for a range of land uses, so the balance in deciding which use is to be preferred will be determined by other factors, such as the extent of the land available and values of the competing land uses to the community.

Given Alice Springs is located within an arid climate and can be subject to extreme weather conditions the potential disturbance of land needs to be carefully managed to avoid the erosion of soil.
Natural Resource Management

Natural resources in the region underpin economic activity, including the support of land use and development.

Key Natural Resource Management Objectives

- Foster responsible and efficient use of land resources to maximise the economic benefits and minimise detrimental impacts on the environment particularly through:
  - identifying, protecting and managing natural water sources including aquifers and surface water catchment to provide ongoing access to adequate and affordable water sources
  - identifying and protecting land with high capability for agriculture and horticulture, particularly where this land occurs in association with sustainable water resources

Water Resources

Alice Springs draws its main water supply from the Roe Creek Borefield, approximately 15km south of the town centre. Water is drawn from confined aquifers within the Amadeus Basin, known as the Mereenie Aquifer System and the Pacoota Sandstone and Shannon and Goyder Formations. This water resource is considered non-renewable and is effectively being “mined”. As the water is being mined, a “maximum allowable yield” has been determined by ensuring that extraction does not exceed 25% of the total storage volume in 100 years. Water levels at Roe Creek have been steadily falling since extraction started in the 1960’s. Due to the lowering water level at Roe Creek, at some time in the future a new borefield will need to be established at Rocky Hill, approximately 15km south east of the Alice Springs Airport. Horticultural use of potable quality water in the Rocky Hill area should be restricted to preserve the water for the future public water supply.

The Draft Alice Springs Water Allocation Plan maintains the allocation of the majority of groundwater in the Amadeus Basin Aquifers for use as public water supply. Due to the non-renewable nature of the water supply, water sensitive urban design should be of primary consideration when planning for the Alice Springs region.

The significant aquifers and Water Management Area are identified on the Water Resources Map.

Rural uses within the catchments of the aquifers have both benefits and potential detrimental impacts on the resource. The low ratio of impervious to natural surfaces associated with rural lifestyle uses assists in maintaining annual aquifer recharge and the sustainability of this resource. On-site waste disposal, usually associated with rural lifestyle development must be appropriately managed to avoid the risk of contamination.

To reduce the potential for exceeding the maximum allowable yield cap, there must be significant consideration of potential increases in water use due to growth in population and industry. Whilst there are significant horticultural activities near Rocky Hill, expansion of such activities will require an assessment of water use and soil suitability. Water intensive crops such as grapes may be unsuited in areas with unconsolidated sediments such as areas to the east of Alice Springs, specifically that area bounded by the Ross Highway, Roe Creek and Todd River.

From a non-consumptive perspective the NT Government has followed the principle that 95% of surface water flows shall be allocated for environmental, aesthetic, recreational, indigenous cultural and other public benefit outcomes. This will preserve surface water features, the health of the environment and maintain regional catchment recharge into aquifers within the District. It is assumed that this protection of environmental values will also maintain the condition of places that are valued by indigenous people for cultural purposes.

5 Alice Springs Water Allocation Plan 2013-2018
Water Resources

LEGEND
- Study Area
- Alice Springs CBD
- Railway
- Arterial Road and Transport Corridor
- Existing Collector Road
- Planned Collector Road
- Airport
- River / Creek
- MacDonnell Ranges
- Water Management Area
- Borefield
- Proposed Rocky Hill Water Main Corridor (future easement required)
Natural Hazard Risks

Desired Regional Outcome

Development that provides appropriate security for people and property.

History in many parts of the world demonstrates that hazard risks for people and property can be exacerbated by irresponsible, ill-considered and imprudent development in the context of risks associated with the natural environment. The Plan is founded on a comprehensive land use structure where location of existing and proposed land uses is determined following detailed evaluation of opportunities and constraints. The plan will therefore have a significant role in minimising the potential for future development to create new and unacceptable risks for people and property.

The Plan considers the range of diverse and complex natural hazard risks to people and property in the Alice Springs Region. Key risks include flooding and climate change.

Key Natural Hazard Risk Objectives

- Adopt responses to risk associated with natural disasters that accord with the Council of Australian Government’s (COAG) National Strategy for Disaster Resilience, including:
  - limiting the intensification of land use within the 1 per cent Annual Exceedence Probability (AEP) flood tide level and locating new development above these levels
  - adopting design responses during more detailed planning and design for future development and on an individual site basis to minimise the potential for damage from destructive weather events

The Todd River is a normally dry, sandy river bed in Alice Springs that has a catchment area located mainly to the north of Alice Springs. Heavy rainfall, together with the rocky terrain and steep river slope of the catchment area, can sometimes cause flash flooding in the Todd River.

The areas prone to flooding are depicted in the Flooding Areas Map, which includes the area to the east of the CBD and a large area to the south-east of the township between the Ranges and the airport. Development within these areas will need to take into consideration flood frequency.

The Northern Territory adopts the one per cent Annual Exceedence Probability (AEP) flood extent and floodway as the basis of land use planning. This means development is restricted in any area where there is a one per cent or greater chance of inundation in any one year.

Development Related Constraints and Opportunities

Desired Regional Outcome

A region that offers a range of well-planned, discrete, and sustainable communities, providing convenient and accessible residential, employment, transport, and other service opportunities.

Development Structure

Key Development Structure Objectives

- Recognise the diversity of the community and the consequential range of aspirations in relation to housing type, location and lifestyle
- Enhance the economic viability of infrastructure and services by creating sustainable local communities
- Encourage consolidated and compact development that facilitates land use and infrastructure efficiencies, increases choice and conserves the regional environment
- Encourage mixed use development, focused in and around activity centres and public transport nodes or high frequency routes
- Encourage the provision of a range of housing options that facilitate housing choice and affordability to meet diverse community needs
- Encourage urban design that takes account of the arid climate to minimise the creation of heat islands
- Develop activity centres to maximise local employment opportunities, availability of services, walkable neighbourhoods and the use of public transport
Flooding Areas Map

LEGEND
- Study Area
- Alice Springs CBD
- Railway
- Arterial Road and Transport Corridor
- Existing Collector Road
- Planned Collector Road
- Airport
- River / Creek
- MacDonnell Ranges
- Water Management Area
- Defined Flood Area
Sustainability

Alice Springs is located within an arid climate where the management and use of water resources is a key priority. The future urban form of Alice Springs will have a key influence on sustainability. Performance criteria are likely to be established to facilitate more sustainable development, noting the need to recognise climate and climate change.

Compact Urban Form

Population growth in the Alice Springs Region has historically been predominantly accommodated in new low density urban suburbs or on rural lots. This approach, responding to the preference of many residents for single detached houses does not necessarily represent the optimal use of land and infrastructure.

The undersupply of urban residential land in recent years has contributed to rising housing costs. Housing prices and the residential rental market remain beyond the reach of many, particularly those wanting to move to the region or enter the market. While many residents continue to aspire to traditional urban or rural lots, affordability is encouraging many in the community to consider alternatives.

Within that context a fundamental principle in the land use plan is the provision of land to accommodate genuine choice of housing types and locations, and an appropriate supply of each to address affordability.

The overarching priority in accommodating growth is to maintain the amenity enjoyed by the majority of residents in existing suburbs and established rural lifestyle areas, while providing opportunities for infill development close to facilities and services (particularly public transport) to satisfy the varying aspirations of the community.

Future urban growth areas will provide a range of housing opportunities including traditional single detached dwellings, with more compact and higher densities in appropriate locations particularly those close to facilities and services.

Within existing urban and rural areas priority will be given to maximising the potential population capacity of infill sites. This will:

- make the most efficient use of available infrastructure capacity and local services
- contribute to the creation of viable communities
- limit the impact on the majority of existing residents
- reduce the need to travel
- improve access to services
- reduce impacts on the environment and natural resources.

More compact residential development, particularly on previously undeveloped sites in established areas and in greenfield developments, creates opportunities for synergies between various land uses such as education and health facilities. More compact development, which provides mixed uses and greater housing choice while limiting the impact on established areas, can also assist in creating stronger and more active communities.

Urban form needs to be managed in a way that:

- uses land efficiently
- minimises transport demands
- encourages cost effective provision of infrastructure and services
- is consistent with the diversity of the community’s economic and environmental values
- creates and supports viable activity centres offering a range of services and opportunities for local employment
- fosters a sense of local community and identity.

The lifestyle and character valued by many residents in established areas is recognised. The focus is on finding the appropriate balance between protecting the aspirations of existing residents while providing for the varying aspirations of others.

Housing Choice and Affordability

Housing need is influenced by a range of factors including life-cycle needs, socioeconomic circumstances, specific needs of people with disabilities and the needs for short term and emergency accommodation.

A greater range and mix of dwellings is needed to create a more liveable, community. The land use plan seeks to encourage housing choice and influence affordability by identifying opportunities for residential development of various types in a number of locations. It is impossible to completely eliminate impacts on all established residential and rural areas.

However, identifying specific localities for new and innovative housing styles will reduce the potential impacts of ad hoc proposals distributed randomly throughout existing urban and rural areas. Future detailed planning for particular localities will provide opportunities for the community to consider specific proposals.
Rural development in the Alice Springs Region is characterised by a range of larger lots in a rural setting where reticulated services are generally limited to power supply. Designated rural living areas also have access to reticulated water. The low to very low densities are attractive to a considerable number in the community but do occupy significant areas to house a relatively small number of people.

However, potential other economic, social and environmental impacts of such low density of development include:

- higher proportional cost of infrastructure, including roads
- higher transport costs
- potential pollution over time through a concentration of on-site effluent disposal systems
- potential cross-subsidisation of services by urban residents

Rural Living and Rural Residential are existing land uses zones which accommodate very low density forms of housing located in rural settings, satisfying the aspirations of many in the community.

With the increasing focus on affordability and sustainable use of resources, the Plan continues to provide opportunities for those who seek a lifestyle outside urban areas. This approach:

- offers practical solutions to the predicted population growth outside the existing urban footprint and addresses the environmental challenges of such growth
- minimises uncoordinated responses to continued growth
- improves housing choice and affordability

Approximately 6% of the existing housing supply in Alice Springs comprises rural living/rural residential lots. Maintaining this proposition of rural living/rural residential lots means that 270 additional lots would be needed to satisfy projected demands for this type of housing.

Table 5 identifies the land area requirements to accommodate 270 additional allotments based on minimum lot sizes identified in the NT Planning Scheme.

<table>
<thead>
<tr>
<th></th>
<th>Rural Residential</th>
<th>Rural Living</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum lot size</td>
<td>0.4 ha</td>
<td>2 ha</td>
</tr>
<tr>
<td>Land equivalent for 270 allotments</td>
<td>108 ha</td>
<td>540 ha</td>
</tr>
<tr>
<td>Total estimated required land (includes provision for roads and services)</td>
<td>130ha</td>
<td>648ha</td>
</tr>
</tbody>
</table>

Future Area Plans would need to identify the location of additional Rural Residential and/or Rural Living locations/zones within the Rural Area.

Sequencing

Appropriate sequencing of future development will have a significant influence on cost efficiency, accessibility to facilities and services and opportunities for economic activity factors that all contribute to the quality of a community. The land use structure will guide orderly and efficient land use and infrastructure delivery.

In the normal course of events, the development of land for residential purposes follows investment in key trunk infrastructure. This approach provides certainty of infrastructure capability and cost efficient development. This approach allows for a tailored provision of community facilities based on the needs of an identified community as opposed to a supply of generic facilities where a community has not been established.

There is desirability for development to occur in multiple locations to meet market objectives such as diversity of product choice, continuity of supply and competition in the market.

The Plan identifies a number of greenfield and infill locations to accommodate growth that must be considered holistically in the context of the regional structure. Determination of the sequence of development will be driven by demand for various land uses based on many criteria, including the feasibility of infrastructure provision. Normal land use and infrastructure planning is the appropriate mechanism for site-specific evaluation to minimise adverse physical or environmental constraints.
Significant Land Uses

Defence

The Joint Defence Facility Pine Gap is an intelligence collection facility shared between the Australian and American governments. It is a major land use in the region, located just outside of the municipal boundary, to the west of Alice Springs.

Out of the nearly 4,000 people who work in the public administration and safety sector of the Alice Springs workforce, approximately 25% are employed at the Pine Gap facility.

The facility’s Australian and American workforce and their families account for 4% of the Alice Springs population and make a significant contribution to the economy of Alice Springs.

A total of approximately 430 defence dwellings exist in Alice Springs.

The Joint Defence Facility Pine Gap is located on unzoned land and is remote from conflicting uses. The Draft Alice Springs Regional Land Use Plan does not seek to modify this existing policy framework.

Alice Springs Airport

On 1 April 1989, control of Alice Springs Airport passed from Commonwealth Government to the Federal Airports Corporation (FAC). It immediately commenced the construction of a new terminal building, which was commissioned in 1991. In 1998, Airport Development Group (ADG) acquired a 50-year lease, with a further 49-year option for the three FAC controlled Northern Territory airports.

The Alice Springs Airport is a largely undeveloped site, currently zoned “CA” and therefore not subject to any planning scheme controls. It has an area of 3,550 hectares and is therefore a key potential influencing factor on future land use planning.

The Airports Act 1996 requires that a 20-year Master Plan is prepared and renewed every five years. The 2015 draft Master Plan provides a 2035 development concept, with a mix of aeronautical, residential, commercial and industrial uses envisaged.

Key elements of the draft 2015 Master Plan include:

- residential uses to the north of the airport, with the creation of a Future Development Zone
- 1,930 hectares for commercial uses (offices, showrooms, warehousing, large format and specialty retail, hotel and other short-stay accommodation, and cafes)
- horticulture
- high technology industry, especially those industries relevant to Alice Springs as a solar city
- industries that rely on logistical support (e.g. mining)
- air, road, and other transport-based industries

There are a number of constraints associated with the proximity of the airport to established and proposed urban areas.

The Alice Springs Airport Master Plan identifies the specific parameters that will inform more detailed land use planning for sites in and around the airport or the evaluation of specific development proposals.

Areas surrounding the airport will be exposed to noise generated by aircraft, which may impact on the quality of life for future residents.

The Australian Noise Exposure Forecast (ANEF) system uses contours to show where cumulative aircraft noise may adversely affect land uses. In association with Australian Standard 2021-2000 (As 2021), it provides guidance for the siting and construction of buildings to minimise aircraft noise intrusion.

In addition, The Airports Act 1996 and the Airport (Protection of Airspace) Regulations declare prescribed airspace and give statutory protection from intrusion into this airspace.

The contours are reviewed regularly, providing a guide to constraints that require further investigation in association with more detailed planning or evaluation of specific development proposals.
The *Airports Act 1996* and the *Airport (Protection of Airspace) Regulations* declare prescribed airspace and give statutory protection from intrusion into this airspace.

The Alice Springs Airport Master Plan identifies the specific parameters that will also inform more detailed land use planning for sites in and around the airport or the evaluation of specific proposals.
Land Use Structure

The land use structure responds to key opportunities and constraints within the context of the vision for the region.
A broad scale regional land use plan will provide a framework for orderly and efficient growth. This land use structure is intended to establish the ‘what’, ‘where’ and ‘why’ to inform more detailed planning and investigations that will establish the ‘how’ and ‘when’ of implementation.

The key influences, opportunities and constraints are outlined in the Regional Context and Policies. Evaluation of these factors has led to the adoption of the Land Use Structure Maps shown on pages 30 and 31 as the most appropriate distribution of land uses to accommodate regional development.
Land Use Structure (Enlarged)
Residential

Key Residential Objectives

• Develop a plan that caters for growth, facilitates infill development, identifies suitable land sites for greenfield development, and addresses housing affordability

• Ensure a diverse range of dwelling types and sizes is available to accommodate the needs of all household profiles in the region

• Create a diversity of residential densities, with higher densities within activity centres to encourage vibrant and mixed-use environments

• Maintain and enhance natural and cultural areas with:
  ○ Designs that are climatically appropriate
  ○ Consideration given to potential flooding risks
  ○ Cultural sites that are recognised for their contribution to the character of the region

• Improve living conditions in indigenous living areas and plan for their future upgrade, expansion and/or connection to services and integration in the wider Alice Springs land use structure

• Integrate new and existing residential development to maintain character and create a cohesive society

• Encourage the efficient, economic and viable use of existing and future infrastructure

• Create, promote and enhance communities’ economic, social, cultural and environmental values

Previous experience in the Alice Springs housing market demonstrates the problems that occur when the supply of adequate and affordable serviced land for housing lags behind demand. Potential home or residential land buyers are disadvantaged by supply shortage as house and land prices rise beyond the reach of many, particularly first home buyers.

The Plan seeks to ensure that suitable land is identified for efficient residential development long into the future. Recent analysis has identified land requirements to accommodate a short term population of 32,000 persons and a long term population of 40,000 persons.

The Plan adopts basic philosophies for future residential development that include:

• continuing to meet the demand for traditional low density houses on individual lots

• increasing the choices in housing types and sizes, with diversity and affordability achieved through creating more compact urban residential lots, and also with a continued supply of rural lots

• recognising the increasing importance of:
  ○ readily available and affordable housing
  ○ integration of land use and transport
  ○ a more efficient urban form, derived through an increased proportion of infill housing as compared to greenfield housing.

• between 2001 and 2011, there was an increase in the number of indigenous population based on the ABS Census data. Should the number of indigenous residents continue to grow, there will likely be demand for affordable forms of housing, an upgrade of existing indigenous living areas and better connection of these areas to infrastructure and services, including social infrastructure. Whilst the average household size for Alice Springs is 2.6 persons, it is also recognised that indigenous households may be of a larger size with an average of 3.3 persons. This will impact on the form and scale of future housing.

• creating opportunities for infill development which could comprise the use of undeveloped or underdeveloped sites in the CBD or the redevelopment of properties within or adjacent to existing activity centres.
Urban Residential

Key Urban Residential Objectives

- Increase housing choice by providing a wider range of housing types and sizes to cater for all households, including single and two person households, dependent and/or temporary residents and retirement living
- Encourage infill development, including the provision of mixed use/residential opportunities in the CBD
- Plan residential development within or close to the existing urban area, local centres, community facilities, public open spaces and transport routes in order to ensure the viability of necessary infrastructure
- Respond to climate change and address the urban heat island effect

Infill Development

As the population of the region continues to grow, the need to better balance infill and greenfield development and to achieve a more compact urban form has become a prominent influence on the regional land use structure.

Infill development promotes an economic use of infrastructure, but also creates more vibrant centres, with an increased mix of uses (i.e. commercial uses at ground level and housing above) and continuous activity during and after working hours.

Infill development provides the opportunity to increase housing diversity and choice, together with affordable housing, on land located in close proximity to services.

 Whilst the infill market in Alice Springs has not been historically strong, part of this can be attributed to periods of slow population growth and limitations of the planning policies both within the suburbs and CBD. Land use planning needs to ensure that the policy pre-conditions are in place to support a full range of development, and be able to respond to changing market demands and preferences which will inevitably evolve over time.

The Plan supports infill residential development, particularly within the CBD, on underutilised land close to existing transport networks and community or commercial facilities. With the CBD building height limit recently revised to 8 storeys in the NT Planning Scheme, significant development capacity now exists in the CBD. Consideration will also be given to dual occupancy housing in order to increase residential densities within established urban areas.

Infill development in areas readily accessible to public transport and local facilities and services will help minimise the economic and potential environmental impacts and costs of increasing population growth in greenfield locations.
Greenfield Development

The land use Plan recognises the role of greenfield development in providing housing supply and mitigating housing affordability risks. Kilgariff is a major existing greenfield location, which is in early stages of development. It will provide a significant source of residential land supply for the Alice Springs market.

Urban Areas

Greenfield development should ideally occur on a number of fronts, primarily to ensure that there is diversity and choice in order to respond to the various segments of the housing market, noting different preferences in terms of location, character and price.

Other greenfield development opportunities in Alice Springs are typically located close to established urban areas, and are in essence extensions of existing suburbs.
Larapinta Valley is located north-west of the township. The potential future development area comprises distinct northern and southern parcels. Whilst a notional yield for 200 allotments has been identified for the southern portion of the land, the northern parcel is evidently constrained by slope, drainage corridors and vegetation. Despite the absence of recorded sacred sites, there is potential for both parcels to have cultural significance.

Whilst the land is clearly constrained, it is proposed to include these parcels in the urban area of Alice Springs. Subject to further investigations, these parcels should form part of future residential land supply.

A detailed Area Plan will be required to guide the future development of the area.

Mount Johns Valley

Mount Johns Valley is located to the south-east of the existing residential area of Mount Johns. Previous investigations identified a potential yield of approximately 700 residential allotments.

The location is one of high amenity, being located at the base of the Ranges. Property values in the existing Mount Johns suburb are the second highest in Alice Springs. The land is not constrained by topography and does not contain any known sacred sites.

Mount Johns Valley provides a key opportunity to provide additional residential land supply. It will provide an alternative to the housing product locational attributes on offer at Kilgariff.

Land at Mount Johns Valley is not likely to be required for immediate release, however it should be considered to support a population of 32,000 to 40,000 persons.

A detailed Area Plan will be required to guide the future development of the area.

Undoolya

The Future Development Zone in Undoolya was established as part of a long term plan to facilitate the potential establishment of a new satellite township. This occurred at a time when population growth in Alice Springs was relatively high, in comparison to the present day.

It is unlikely that the land at Undoolya will be required to support a population of 32,000 to 40,000 persons. However the land should remain identified to potentially accommodate long term future growth.

A detailed Area Plan, supported by comprehensive investigations, would be required ahead of the land being zoned for urban purposes.

Emily Hills

Located within the existing Rural Residential Zone (otherwise known as Emily Hills), planning approval for a 264 lot residential subdivision was granted in 2005, and then further extended in 2014.

Based on the approved subdivision and having regard to the boundary of the Rural Residential Zone, some additional 95 hectares of land remain potentially available for further development in Emily Hills, subject to further investigations and infrastructure provision. This land could potentially be used for urban residential purposes, with a mix of allotment sizes established to respond to the character and landscape context.

A detailed Area Plan will be required to guide the future development of the land.

Emily Hills

Located within the existing Rural Residential Zone (otherwise known as Emily Hills), planning approval for a 264 lot residential subdivision was granted in 2005, and then further extended in 2014.

Based on the approved subdivision and having regard to the boundary of the Rural Residential Zone, some additional 95 hectares of land remain potentially available for further development in Emily Hills, subject to further investigations and infrastructure provision. This land could potentially be used for urban residential purposes, with a mix of allotment sizes established to respond to the character and landscape context.
Rural Areas

Key Rural Areas Objectives

- Identify opportunities for rural living/rural residential development to meet market demand, whilst recognising the higher costs of servicing for these types of allotments
- Create opportunities for rural development to occur outside the township boundaries where appropriate
- Preserve and enhance the region’s environmental values, natural resources and agricultural/pastoral uses
- Identify land opportunities for a choice of rural uses, whilst also acknowledging the potential impacts relating to the Roe Creek aquifer, land suitability and cultural constraints
- Consider rural lifestyle/self-sufficient environmental housing development and/or tourist accommodation in appropriate locations within existing Conservation Zones

The diverse aspirations of residents in the region has prompted consideration of opportunities to provide a wider range of lifestyle choices in localities outside the urban areas.

The potential impact of such development on the natural environment and established rural localities confirms the need for responsible development and land use management.

The Plan maintains and endorses rural activities as a legitimate land use in the region and gives priority to the protection of established localities, while recognising the difficulties of accommodating all future population growth outside urban areas on large un-serviced lots.

This approach recognises that rural lots have particular value because:

- in some locations, they can be sustained by direct self-sufficient connection to the region’s groundwater aquifers
- lots are of a sufficient area to allow wastewater to be treated and managed to avoid pollution
- the lots make an important contribution to broadening available living options in the region

The Rural Residential Zone at Emily Hills includes an approved subdivision for 264 allotments of various areas and configurations. Portion of this zone could potentially be developed for urban residential purposes, given the reasonable proximity of the land to the CBD and Kilgariff.

Existing rural living/residential areas provide approximately 6% of housing in the Alice Springs Region.

Maintaining this current ratio future demand for rural living/rural residential opportunities will be approximately 270 lots to service a population of 40,000 persons.

Rural land at White Gums, which is a privately owned potential option for further rural subdivision into smaller lots.

Existing and proposed rural areas are identified on the Rural Areas Map included on page 37. Area Plans will be required to identify potential Rural Living/Rural Residential locations within the Rural Area.

Potential future development of the former Owen Springs Station needs to consider the interface with the Brewer Industrial Estate and the Alice Springs Correctional Centre. In addition, consideration needs to be given to the potential impacts on the Water Management Area.

A separation distance of approximately 1500 metres from the Brewer Estate is considered appropriate, having regard to EPA guidelines developed in South Australia. The interface with the Alice Springs Correctional Centre can be considered and managed as part of a future Area Plan.

An Area Plan would also assist in identifying the required buffers to the APA Amadeus Gas Pipeline which extends through the area.

1 There are no guidelines for the Northern Territory. The South Australian EPA’s guidelines have been used for the purpose of this land use plan.
Rural Areas
Activity Centres

Key Activity Centres Objectives

- Identify a hierarchy of activity centres comprising the CBD and local centres which:
  - reinforces the primacy of the Alice Springs CBD
  - establishes an efficient and equitable framework for the distribution of retail, tourist, commercial and other community needs and provides a range of residential opportunities within and/or adjacent
  - maximises local employment opportunities to encourage diversification of the economy
  - encourages active transport including walking and cycling and enhanced access to public transport
  - fosters liveable and sustainable communities

- Provide a mix of activities appropriate to the type of centre and the catchment population

The Alice Springs CBD forms a regional centre role which extends well beyond the town boundary, and is the dominant commercial, cultural, administrative, tourist and civic centre. This pre-eminent role will be retained and reinforced. Increasing residential population within the CBD will support the commercial viability and vibrancy of the CBD, providing improved lifestyle choice and amenity. Opportunities exist in the CBD for infill commercial development or redevelopment of underutilised or disused sites.

The Alice Springs CBD will be supported by local activity centres distributed across the urban and future greenfield areas. Each of these local centres performs a function influenced by its respective location and catchment population.

Potential exists to increase the intensity of development within the existing local centres to provide an increased range and choice of services. An increased resident population within each catchment will increase the viability and therefore potential for the existing centres to be redeveloped.

Industrial

Key Industrial Objectives

- Provide appropriately serviced industrial land in a timely, efficient and equitable manner
- Encourage a range of lot sizes to accommodate the different needs of the transport, logistics, storage and mining services sectors, together with industries serving the needs of local residents
- Consider transport networks and connections to those, and identify an appropriate site for future investment as an intermodal facility (road, train)
- Protect industrial zones and uses from encroachment by adjoining uses with potential to limit industrial development or expansion
- Provide separation between light industry uses and more hazardous/toxic uses
- Consider impacts on natural resources especially water supply

The preferred location for industry is influenced by a variety of factors, including land capability, servicing and interface considerations.

Light industries typically require localities convenient to the catchment population. General industries are more likely to be attracted to localities which are close to major transport networks and key infrastructure, and are removed from potentially conflicting uses.

Light industries are established in precincts located to the north-west of the CBD. Whilst many properties are underutilised, there is little evidence of vacant or available land. As demand intensifies, it is likely that existing industrial areas will redevelop and intensify.

The Plan identifies land for ongoing industrial development in well located areas close to transport infrastructure.

The existing industrial area known as the Brewer Estate was specifically established to accommodate hazardous and noxious industry. This land should be retained for such purposes, with additional locations planned for light industrial use.

The proposed industrial area at Arumbera has the potential for light and general industry together with the establishment of an intermodal facility given the proximity to both the Stuart Highway and the rail.

Portion of Abattoir Valley, located to the north-west of Alice Springs, has the potential for light industry, and will provide additional employment opportunities north of Heavitree Gap.
Primary Industry

Key Primary Industry Objectives

- Protect land resources of potential importance to future economic development and self-sufficiency in the region by:
  - identifying and protecting areas with potential for horticulture and agriculture
  - protecting rural land from encroaching uses including rural living

Horticulture

Horticulture is an emerging industry in the broader Alice Springs region, with most of the suitable land located external to the boundaries of this Land Use Plan. Areas that have a capability for horticulture could contribute to the ongoing economic growth of the region. Consideration however needs to be given to ensure water use does not prejudice supply and costs for township use.

The vast majority of soils in the region have limitations which affect productivity or predispose the land to degradation. However, responsible land management practices such as controlling pest plants and growing crops suited to the arid climate provide a step forward in sustaining land resources and utilising the area to its full capability.

There is a potential to use land for production of Aboriginal food crops or “bush tucker”, supplying to a niche market. Bush tucker crops are ideally suited to the climate and soils of the region. Further investigation into establishing such industries is required, particularly in areas which presently contain unproductive pastoral lands.

Pastoralism and Agriculture

The Alice Springs Region contains 70 pastoral properties; some owned and managed by traditional owners. The cattle industry is worth approximately $50 million per year to Central Australia\(^2\) and is indicative of the highly productive land in the region.

Most productive land is located outside of the boundary of the Plan.

Of key relevance to the Plan is the potential flow on effects of the primary industry sector to the general economy, with demands likely in the transportation, warehouse and storage industries.

Natural and Conservation Areas

Key Open Space Objectives

- Retain the region’s natural assets and ensure that future urban and rural developments are compatible with existing landscapes, vegetation and habitats
- Minimise the impact of development on the natural environment during the construction phase and ongoing use
- Provide appropriate open space reserves for the conservation of natural environment and heritage features, and for resident and visitor recreation in active and passive activities
- Recognise the role of vegetation corridors and watercourses, in providing interconnectivity of open space and protecting amenity
- Recognise the role of urban green space in reducing urban heat impacts and providing community amenity

Open spaces and conservation areas throughout the Alice Springs Region have roles in protecting land and water resources, promoting the conservation of significant vegetation communities and wildlife habitats, and enhancing green infrastructure within the urban environment.

The Plan recognises the continued contribution of these areas to improving community well-being in arid settings. Open space and vegetation assist the minimisation of urban heat islands and contribute to amenity and liveability.

The Plan also recognises that accommodating future growth will require selective impacts on the natural environment and biodiversity enjoyed by residents. Whilst creating new human habitat cannot be achieved without some impact on existing natural habitat, new development should maintain or provide urban green space in public and private areas including parks, street trees, landscaping and vegetation corridors.

Open space reserves exist throughout the township and provide green pockets within the CBD, near centres and community facilities, and along river corridors. The township is surrounded by land zoned Conservation, which comprises a mix of conservation areas and undeveloped Crown land.

These areas include:

- Telegraph Station
- Olive Pink Flora Reserve
- Alice Springs Desert Park
- Yeperenye/Emily and Jessie Gaps Nature Park
- Ilparpa Swamp Wildlife Protected Area

\(^2\) Alice Springs Economic Profile - Review 2010
LAND USE STRUCTURE

Community Facilities and Services

Key Community Facilities Objectives

• Ensure appropriate levels of community services and facilities based on future population growth

• Recognise the regional role of Alice Springs as a regional centre and continue to support remote communities with adequate provisions of services and facilities, especially in the health sector

• Maintain a high quality standard of community service provision through:
  ○ appropriate provision and management of regional recreation facilities to encourage involvement of residents in sport, and to provide for healthy living and premier sporting activities
  ○ encouraging the co-location of recreation facilities with other community uses particularly schools to maximise potential for multi-use
  ○ recognising the role of parks and reserves in meeting the recreation needs of the community

• Provide appropriate levels of services and a range of facilities in indigenous living areas

• Provide appropriate levels of community services and facilities south of Heavitree Gap, mainly centralised in Kilgariff, to cater for future population growth

The provision of a range of facilities and services to meet the needs of local communities assist in the creation of local character and identity that contribute to the creation of strong and healthy communities.

Health Services

The Alice Springs Hospital, located within the CBD, provides a range of services including emergency services, obstetrics, intensive care and palliative care.

Based on a commonly used ratio of 4.8 beds per 1000 population, the current provision of 183 beds would service a population of 40,000 persons. However considering the large catchment of the hospital (from the South Australian border up to Elliott, NT), together with the high proportion of indigenous population, there is the potential for demands to significantly exceed the ratio typically used.

Two centres provide health services specifically for the indigenous community. A higher portion of the indigenous population, as compared to the non-indigenous population, suffers from a range of chronic diseases.

The development of health and social support facilities within some indigenous living areas could be considered in order to provide easier access to these services.

Ongoing detailed planning for health care will adequately provide for both public and private sector participation in developing facilities and delivering services.

As such, opportunities may exist for additional forms of residential or tourist uses, which have minimal impact on protected areas or productive land and should take into account flooding hazards, where relevant.

This would typically encourage self-sufficient dwellings that:

• maximise the use of renewable energy sources and reduce the reliance on other traditional power sources

• are built on larger lots, with a lower site coverage and higher proportion of vegetation

• do not expect to rely on transport infrastructure or any form of services

Further investigations would be required to ascertain the relevance and potential characteristics and location of low-impact residential development in Alice Springs.
As additional population is established south of Heavitree Gap the need for additional health care facilities in this area needs to be considered. It is anticipated that local community health care facilities will be integrated in the urban centre at Kilgariff.

**Child Care**

Ten long day child care facilities are found in Alice Springs with a capacity of approximately 400 places. A new centre has recently been announced for Larapinta. Based on a ratio of 1 long day child care centre for every 4,000 to 8,000 people, it is also likely that new residential areas will require additional facilities, particularly in Kilgariff.

**Education Facilities**

The ongoing provision of adequate and affordable land to accommodate a range of educational facilities is a key imperative in this plan. Specific requirements and sites for new school infrastructure will be determined by a number of factors including:

- the location of greenfield and infill development
- the contribution of government and non-government sectors
- convenience with respect to public transport services

The need for additional educational establishments will be influenced by future population growth of Alice Springs. Population movements emanating from remote communities may also impact on the need for additional schools especially for indigenous children.

A population of 40,000 persons could generate a theoretical demand for two additional primary schools.

Given future population growth is anticipated in Kilgariff a future primary school in Kilgariff should be considered, as identified in the Area Plan for Kilgariff.

A future population of 40,000 persons will potentially warrant a new secondary school. The potential future location of a secondary school should be determined having regard to the distribution of the future population, as such evolves.

**Active Recreation**

Traeger Park is the main sports complex in Alice Springs and can host AFL and cricket events of international standards with a capacity for 10,000 persons. Anzac, Albrecht, Ross Park and Rhonda Diano Ovals are also significant open space/recreation areas for sporting purposes.

Five significant areas are zoned Organised Recreation and include:

- the Velodrome
- Scouts land
- the Aquatic Centre/Traeger Park area
- the Alice Springs Golf Club
- the Arunga Park Track

All of the above areas are located north of the Gap.

Three areas zoned Organised Recreation, located south of the Gap, support the following activities:

- the Motorcycle Club
- the Shooting Complex
- the Blatherskite Showground
- the Pioneer park Racecourse
- the Finke Desert Race
- Central Australian Drag Racing

As the population continues to grow, there will be an increased demand for additional facilities. It is anticipated that over time there will be a need for new playing fields and courts supporting a range of sports including soccer, tennis and netball. Playgrounds are also likely to be required to support new residential areas.

Consideration should be given to the planning of a new multi-purpose sports space (minimum 3.5ha). Such a multi-purpose space could be considered south of Heavitree Gap.

Detailed planning for urban areas will focus on opportunities to co-locate local sporting facilities with other community facilities, particularly schools. This approach encourages multi-use and increased activation of local areas.
Infrastructure

Key Infrastructure Objectives

- Protect natural freshwater sources, including aquifers
- Densify and protect transport corridors and facilities for an efficient movement network
- Address Heavitree Gap as a key physical constraint for the provision of infrastructure
- Efficiently manage regional waste demands including monitoring capacity of existing facility

Essential Services

Water Supply

Alice Springs draws its main water supply from the Roe Creek Borefield, approximately 15km south of the town centre. To keep up with demand an additional bore will be required for each additional 4,000 people. Upgrades to the transfer pump station and rising main will be required progressively as the population grows. An alignment for an additional large watermain through the Blatherskite Gap (between St Marys and Old Timers) should be reserved. Details of the upgrades will be dependent on which areas of town are developed first. Water source information is covered in more detail in the Natural Resource Management section of this document on page 20.

Due to the non-renewable nature of the water supply, care should be taken to ensure that development in areas near drinking water supply production bores and their critical recharge areas (the area shown as Water Management Area on the Reticulated Water Supply map) is planned and managed to ensure this critical resource is not put at risk. Water sensitive urban design should be included in all development. Exploration of fit for purpose alternative water resources, such as recycled water and storm water capture re-use, to support water efficiency objectives and improve environmental outcomes should be supported.

Due to the lowering water level at Roe Creek, at some time in the future a new borefield will need to be established at Rocky Hill, approximately 15km South East of the Alice Springs Airport. Service corridors for water mains, power lines and road access to the new borefield should be reserved and considered when planning for development in the Kilgariff/Airport area.

As the water source is limited, water sensitive urban design should be included in all development.

Water Distribution System

The Alice Springs water distribution system has been constructed to mainly service the area north of Heavitree Gap. South of Heavitree Gap has previously been planned for low intensity development. When developing south of the Gap, significant investment in new water infrastructure will be required.

Overall, key considerations for the provision of future infrastructure include:

- tank (Ground level and Elevated) locations and sacred sites
- overall pump economics (currently energy is wasted pumping water into town, then back feeding through the Gap)
- lengths and size of transfer mains
- security of supply
- trigger points for infrastructure construction

The Reticulated Water Supply Map shows the reticulated water network in the Alice Springs Region. The available capacity across the network and further development in greenfield areas will depend upon specific and detailed investigations. A future water supply corridor will also be required and will necessitate the establishment of an easement, as shown on the map.
Reticulated Water Supply

Legend:
- Study Area
- Alice Springs CBD
- Railway
- Arterial Road and Transport Corridor
- Existing Collector Road
- Planned Collector Road
- Airport
- River / Creek
- MacDonnell Ranges
- Water Management Area
- Reticulated Water supply area
- Bonefield
- Proposed Rocky Hill Water Main Corridor (future easement required)
Electricity

The Ron Goodin Power Station was commissioned in 1973 and is a major source of electricity in the Alice Springs area. It has a capacity of 44.6MW and uses natural gas for fuel. The power station is due to be decommissioned approximately mid-2017. The decommissioning work does not include the Zone Substation, which will remain operational.

Based on the above, the power station site may become available for alternate use, subject to further investigations in terms of land capability.

The Owen Springs Power Station uses the latest dual fuel reciprocating technology, with the majority of the capacity 36 MW commissioned in 2011. The planned expansion of Owen Springs will enhance local generation.

A new potential 66kV transmission line route is envisaged from the Sadadeen Zone Substation to Owen Springs Power Station.

Brewer Power Station is owned and operated by Central Energy Power (CEP). Territory Generation purchases electricity from CEP under a Power Purchase Agreement, for supply to the Alice Springs Grid.

The Alice Spring Power Network has capacity to support the existing electrical demand together with medium term demands for power (i.e next 5-10 years).

Changes in customer behaviour such as the installation of roof top PV systems and efficiency measures are likely to help reduce electricity peak demand. The Power and Water Corporation monitors and manages potential capacity issues in order to ensure existing assets are fully utilised, before further capital investment are made.

Key implications in terms of power supply are identified below:

- residential infill and existing developments in the areas of Kilgariff, Larapinta Valley and limited CBD infill are likely to have less impact on the power network and lower headworks costs than developments in the Mount Johns Valley and Undoolya Valley
- a new industrial land release may require more significant power network development depending on the size of development and cannot be assessed at the time

Industrial development in the Brewer Estate is likely to have less impact on the power network than other potential industrial areas.

Sewerage

The existing sewer mains located through Heavitree Gap have approximate capacity for an additional 3000 Equivalent Population (EP). Development north of the Gap, which exceeds this population level, would require additional service capacity to be established through the Gap.

The existing ponds located between the Gap and Ilparpa Valley have capacity for a population up to 30,000. Detailed investigations would need to be undertaken as to the best upgrading or relocation options for additional capacity beyond a population of 30,000.

Soil Aquifer Treatment (SAT) basins are located at AZRI which provide additional treatment and storage of recycled water. Suitable buffers may be required around SAT basins.

Very little land located south of Heavitree Gap is serviced with reticulated sewer. When developing south of the Gap, significant investment in new sewer infrastructure will be required. Overall, key considerations for the provision of future infrastructure include:

- service corridors for rising mains
- pump station catchments
- interaction between pump stations
- consideration of a new sewage treatment plant may one day be economic to the south to save pumping back up hill

In the rural areas, sewage is generally treated on site. The on-site treatment of sewage needs to be carefully considered in order to protect water resources, in particular the Water Management Area and aquifer which supplies water to Alice Springs.

The relocation of the whole pond system could occur in the longer term in order to allow the development of other uses in the area, and a potential new treatment plant could be developed further south, towards Kilgariff. Notwithstanding, spatially there is likely to be sufficient land for additional ponds or other treatment facilities to be established at the existing location.

The most effective option for future upgrades and location of the ponds will depend on a number of factors, including:

- Waste Discharge License Conditions
- potential future development in the vicinity of the ponds
- future economic context and status and use of recycled water

Future upgrades of the ponds (or relocated infrastructure) could also consider the creation of a more enclosed treatment system in order to prevent excessive evaporation from the ponds, especially during summer. Future development will need to respond to potential buffer areas.
Sewerage Network

LEGEND
- Study Area
- Alice Springs CBD
- Railway
- Arterial Road and Transport Corridor
- Existing Collector Road
- Planned Collector Road
- Airport
- River / Creek
- MacDonnell Ranges
- Sewerage supply area
- Existing Treatment Facility
- Existing SAT infiltration basins

NORTH

0 1 2 3 4 5km
Waste

In 2012, Council significantly upgraded the Regional Waste Management Facility located in Ilpara Valley, to enable effective sorting and recycling to occur. The new facility was designed to service the region, for the next 30 years.

At the same time, Council is also encouraging the community to reduce waste and is promoting reuse and recycling in order to reduce waste disposal to landfill.

Should expansion of the Waste Management Facility be required in the future, land adjoining the current facility is likely to be suitable, subject to relevant further investigations.

Gas

The Amadeus Gas Pipeline provides gas to Alice Springs. It is a major infrastructure asset which will influence land use planning adjacent to its alignment, for safety reasons. Consultation with the operator of the pipeline will need to be undertaken in order to ascertain the required separation distances.

Communication networks

Expansion and/or consolidation of communication networks will need to be planned, in collaboration with relevant stakeholders, noting that the NBN has announced that it will complete the connection of 9,000 households and businesses by June 2016.

Transport

Road

The primary access route through Alice Springs is the Stuart Highway, the major highway connecting Adelaide and Darwin. Large commercial vehicles use this route. Stuart Highway bisects Alice Springs and therefore also performs the primary arterial function for the City.

The road network servicing Alice Springs links to Stuart Highway in a radial style configuration, with the major linkages all connecting to Stuart Highway. This means that the transport routes generally focus on a central point (the Alice Springs CBD) but equally the risks associated with capacity constraints need to be managed, particularly given the lack of alternative networks.

Future planning for road infrastructure requirements will need to be completed in parallel with development to ensure that these constraints do not adversely impact on the planned growth areas of Alice Springs.

Heavitree Gap

Heavitree Gap provides a break in the MacDonnell Ranges, and the only route for road and rail traffic. Subsequently it is traversed by the Stuart Highway, with the railway located to its western side and the Todd River to the east. The Stuart Highway provides one lane in each direction at this location.

Future development south of Heavitree Gap will increase the volume of traffic through Heavitree Gap, particularly during the morning and afternoon/evening peak hours as individuals commute to/from the CBD. Innovative engineering solutions should be considered to address traffic increases.

The “Alice Springs: Traffic Study” prepared in 2009 by QED for the Department of Infrastructure identified that due to development south of Heavitree Gap, the duplication of the Stuart Highway would be required in the future.

The duplication was predicted to be required when 1,350 dwellings were developed south of Heavitree Gap, with the resultant road volume increasing to over 1,450 vehicles per hour (vph).

The increase in development south of the Gap will also create an increase in demand and subsequent limitations in catering for vulnerable road users such as pedestrians and cyclists.

The cultural importance of the Gap should also be considered to help guide the future planning of and improvements to the Stuart Highway.

Additional lanes or duplication of the Stuart Highway has the potential to impact on the Todd River. Consideration would need to be given to matters such as cultural heritage, flooding and vegetation.

Jacobs Group is currently preparing the “Alice Springs Traffic Study” for the Department of Transport that will further consider the future duplication of the Stuart Highway corridor, and include the preparation of a dual carriageway alignment concept for the Stuart Highway.

Stage 1 of the study focuses on the section south of Heavitree Gap. Staging of the investigations was influenced by current and prospective developments along the southern section of the Highway, including Kilgariff. Stage 2, expected to commence by June 2016, will address the section through Heavitree Gap and will involve extensive consultation with a broad range of stakeholders.
Mount Johns Flood Immunity

Stephens Road provides access to/from the Mount Johns Valley urban development area. During flood events, Stephens Road, which crosses the Todd River, is severed by floodwater. An increase in traffic on Stephens Road as a result of future development could result in an additional 5,500 vehicles per day by 2035 using this road, necessitating road upgrades. The “Alice Springs: Traffic Study” prepared in 2009 indicated that the development of Mount Johns Valley should provide no more than 200 allotments until an alternative access be constructed.

Safe and functional access to this region will necessitate planning for future infrastructure in order to provide reliable access to the Mount Johns Valley urban development area. Further investigations to address this access constraint are warranted prior to pursuit of any significant development. The following options could be further explored in such investigations:

- a Connector Road between Stephens Road and Sadadeen Valley Road, which will provide a road link to the existing Stott Terrace bridge; or
- a bridge to provide access in lieu (or addition to) the Stephen Road causeway crossing (known as Taffy Pick).

The Sadadeen Connector Road option provides the benefit of an alternative route for drivers and more traffic distribution, a cost benefit analysis of the holistic benefits to the broader community would inform the stakeholders in respect to the most beneficial option.

The Department of Transport is currently undertaking a Flood Immunity Study for transport routes in the Mount Johns area, which will inform the feasibility and viability of this Connector Road.

Larapinta Drive/ Stuart Highway/ Stott Terrace Intersection

The signalised intersection of Larapinta Drive, Stuart Highway and Stott Terrace is considered a key component to the restriction of future growth, particularly for the Larapinta Valley urban development area and the CBD. It is considered that the intersection currently has significant traffic demand, particularly during the morning and afternoon/evening peak periods, presenting long delays and queues for drivers. Traffic analysis should be undertaken of the intersection to determine the timing and nature of an intersection upgrade. Furthermore, the analysis should consider alternatives for the railway crossing, such as grade separation, which would improve safety at the location.

Stott Terrace

High crash rates have been experienced at the signalised intersections on Stott Terrace (i.e. at Bath Street, Hartley Street and Todd Street). Upgrades to improve safety at these intersections should be considered as traffic demands increase, particularly if the Sadadeen Connector Road is provided. This intersection upgrade should be considered as part of a network analysis for the overall CBD to ensure that future development does not exacerbate the safety issues at this location.

Wills Terrace/Hartley Street Intersection

The intersection of Wills Terrace and Hartley Street forms a four-way intersection with the Anzac Hill High School access point opposite Hartley Street. Due to the close proximity of the school and nature of the four-way intersection, it is considered that this intersection should be upgraded to ameliorate existing safety issues. The growth of Alice Springs will compound this issue and an upgrade at this location should be incorporated in infrastructure planning. The installation of traffic signals at the intersection could be considered to improve conditions for all road users.

Stuart Highway/Bradshaw Drive Intersection

The roundabout treatment at the intersection of Stuart Highway and Bradshaw Drive will be required to be assessed to determine if improvements are required to cater for the increased traffic volumes on the Stuart Highway, particularly given the close proximity of the railway crossing adjacent to Bradshaw Drive. Development trigger points should be identified so that these can be included in future growth planning for the nominated regions.

Public Transport

Since 2010, patronage on the Public Transport Urban Bus network in Alice Springs has increased and it is estimated that approximately 115,000 passenger journeys occurred in the 2015 calendar year.

The Department of Transport anticipates that these numbers will continue to grow into the future and a full network review will most likely need to occur within the next two years.

Services to the west and south of the town appear to be the most popular and on the increase. The current urban bus interchange is located on Railway Terrace and any expansion of the CBD area would need to consider urban bus access points and the potential for a larger interchange outskirts of the urban area, will require services as housing and population is established.

New public transport access will also need to consider school bus services, for which demand has been increasing.
Active Transport

Cycling and walking are popular modes of transportation in Alice Springs. Annual bike counts consistently show high levels of cycling in Alice Springs compared with other regional centres around Australia.

Alice Springs Town Council, Parks and Wildlife and NTG have developed an extensive network of shared and mountain bike paths, throughout the town. Work is progressing to continue to expand and connect these networks. Any future developments should consider opportunities to link in with existing networks. End of trip infrastructure (secure bike racks, showers, way finding signage and lockers), should be accommodated within new developments, particularly within the CBD.
Rail

Alice Springs is served by the Adelaide to Darwin railway line, located adjacent the Stuart Highway. The station is strategically located west of the Central Business District (CBD). The Alice Springs intermodal and freight terminal is the primary intermodal terminal serving customers in and around Alice Springs.

The rail site currently suffers from poor connectivity to the CBD due to the historical road network and limited access.

A new railway station and tourism precinct has been envisaged for the site on the western corner of the Stuart Highway/Whittaker Street intersection, which could improve pedestrian connectivity to the CBD.

Six intermodal freight services are provided per week from Adelaide to Darwin, and a total of 800,000 intermodal freight and 70,000 tonnes of bulk liquids a year are transported between Adelaide and Darwin. Trains are approximately 1,800 m long and weigh 4,000 tonnes.

Commodities transported include dry groceries, chilled/frozen groceries, building/construction material, automotive vehicles and parts, mining consumables, liquor and mail. Organic growth opportunities exist in the areas of iron ore, rare earths, phosphates, manganese, nickel, coal, copper, gold and uranium.

A new intermodal terminal is being considered south of Alice Springs. If a new terminal is established, freight would be separated from commuter rail, allowing for further development of the existing railway station.

Further investigations are required to inform the potential location of the future terminal.

A decision in respect to the potential rail terminal will inform the extent of infrastructure requirements to improve connectivity to the existing facility. Nonetheless, improvements to existing infrastructure are critical if the rail facility is to be maximised.
Air

Alice Springs is serviced by the Alice Springs Airport, located approximately 15 km south of the CBD. The airport is separated from the CBD by the Macdonnell Ranges, with the Stuart Highway providing the only road connection through Heavitree Gap.

The airport currently provides for 580,000 passengers a year, which is forecast to increase to 750,000 passengers by 2035, as documented in the Draft Alice Springs Airport Master Plan. The airport also provides a valuable transportation link for the general aviation and defence industries. The general aviation sector is essential for providing services to remote communities. The draft Master Plan indicates that the airfield and terminal infrastructure at the airport is capable of accommodating the forecast growth.

An intermodal terminal south of the CBD would strategically consolidate transport services, reducing travel time to/from the airport. A detailed review of the viability of such a facility is warranted in conjunction with the staged development of the Airport Master Plan, particularly given the constraints on the road network (Heavitree Gap) linking the airport land to the CBD.
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