



Northern  
Territory  
Government

# Rural Village Development Discussion Paper

**growing** the  
**Territory**

A Territory Government initiative

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Enquiries should be made to:

Department of Lands and Planning

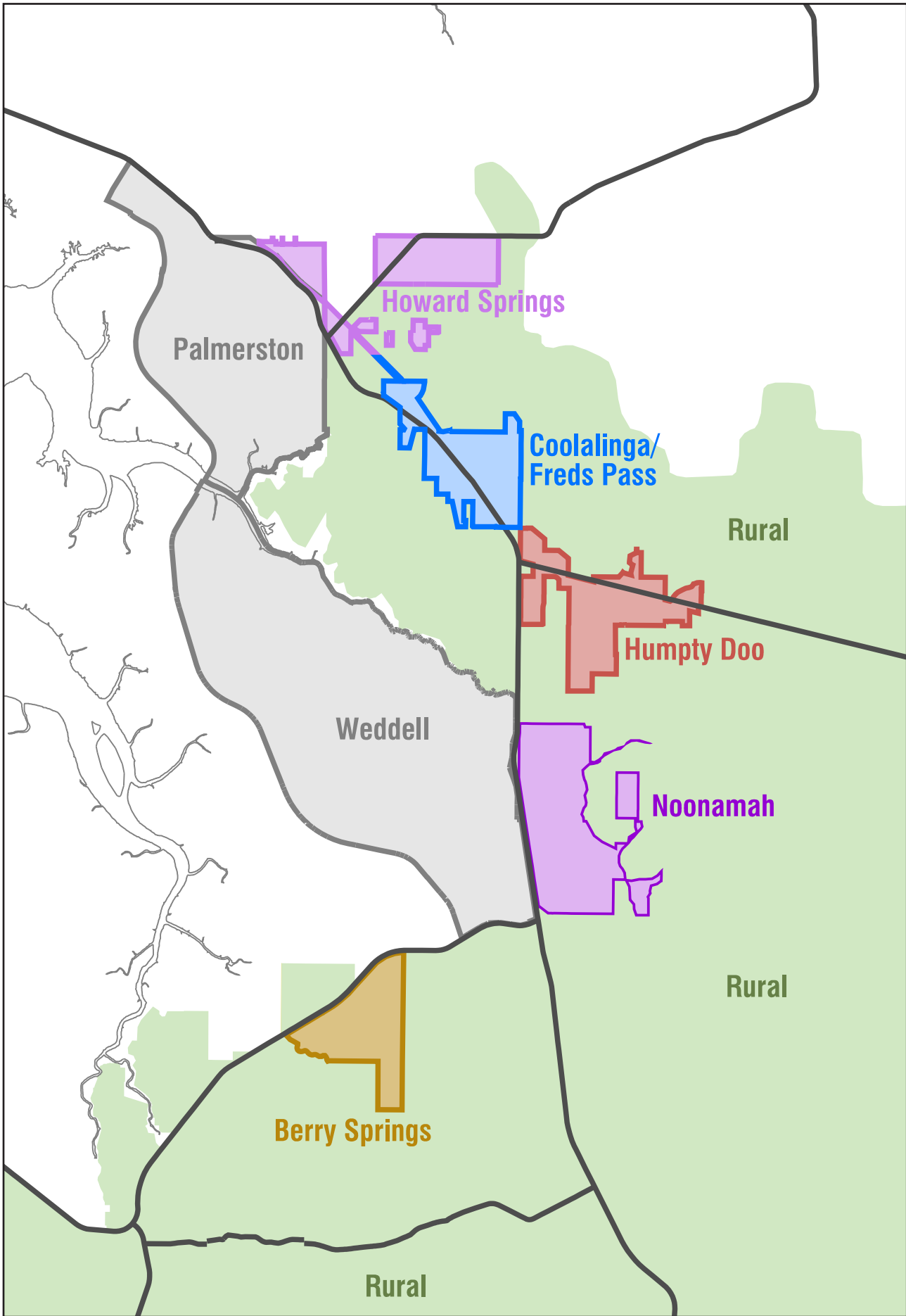
GPO Box 1680

Darwin NT 0801

[www.growingnt.nt.gov.au](http://www.growingnt.nt.gov.au)

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# Introduction

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

## Purpose of Rural Village Development

Rural Village Development responds to opportunities to satisfy the increasingly diverse aspirations and demands of rural residents and to minimise the impacts of continued population growth on the natural environment.

To successfully meet predicted market trends and the associated demand for local facilities and services, solutions are needed which consider both social and biophysical sustainability. Factors particularly pertinent to rural village development include:

- Protection of the amenity of existing rural living areas;
- The sustainability of groundwater resources which have underpinned residential living on large lots utilising bores for water supply and on-site waste disposal;
- Housing choice outside urban areas particularly for older people with a preference for aspects of the rural lifestyle;
- Limitations the lack of reticulated water and sewerage impose on the development of local facilities and services in District Centres; and
- Difficulties either the Crown or private developers face in aggregating sufficient land to establish the economic viability of required infrastructure because of fragmented ownership.

## Desired Outcomes

The emergence of economically viable, lively and attractive villages will contribute to the environmental, social and economic sustainability of a range of residential living styles in the rural setting.

Specifically area Plans for the development of various rural villages will:

- Offer practical solutions to the predicted continued population growth in the rural areas and the environmental challenges of such growth;
- Clarify choices rather than simply allow uncoordinated responses to continued growth;
- Lead to increased housing choice and affordability;
- Establish clear principles and guidelines which reflect the demands and aspirations of local residents;
- Generate the thresholds required to establish economic viability of providing the infrastructure necessary to service a concentration of activities; and
- Encourage additional local scale business.

# Background

Initial settlement in the rural hinterland of Darwin was associated with attempts to foster agricultural development until the destruction of Darwin by Cyclone Tracy created interest in these areas as a place to live. Rural living lots were predominantly of either two or eight hectares, utilising bores to access groundwater for domestic supply and on-site septic systems for effluent disposal. The required 100m separation between a bore and a septic tank has been a significant determinant of lots sizes, as lots which cannot meet this standard require reticulated water and / or reticulated sewerage.

As the rural population continues to increase, so to does the diversity of the aspirations of residents. Some continue to be attracted by the opportunity to be involved in small-scale agriculture, others are attracted simply by the amenity afforded by life on a larger lot, and recent evidence suggests a growing number are interested in life outside the urban areas without the commitment to a large lot. Irrespective of the aspects of rural life which attract residents, most aspire to having ready access to commercial and community facilities.

Although local 'village centres' were first identified in the early 1980s, in response to the demand for local infrastructure and services, the lack of reticulated water and sewerage has constrained development of the concentration of activities envisaged in these centres. The exception is the Humpty Doo centre where reticulated water and sewerage support a wide range of activities including commercial, service commercial, industrial and community uses and some urban style residential.

The increasing size and complexity of the population in Litchfield Shire is creating issues within the context of an increasing emphasis on sustainable development. Of particular importance are the impacts, on land and water resources, of large lots utilising groundwater for domestic supplies and septic systems for water disposal. The travel required to access facilities and services in more distant urban centres is also of concern.

## Strategic Context

The Territory 2030 Strategic Plan establishes a framework for an enriched society and community, a strong and stable economy and enjoyment of the unique natural environment. Within this framework, the draft Greater Darwin Region Land Use Plan – Towards 2030 (Towards 2030 Land Use Plan) has been prepared to support the Northern Territory Government's aim to create a sustainable future for the region.

The vision for the region, documented in the Towards 2030 Land Use Plan, supports the development of a series of more compact, interconnected, lively, urban and rural communities, each with its own distinct character and reflection of Territory living. The growth of a series of distinct villages in the Litchfield area, providing work and leisure opportunities surrounded by a traditional rural lifestyle, is proposed to be a key contributor to the delivery of this vision.

The creation of rural villages also accords with the Northern Territory Government's commitment to the Council of Australian Governments in relation to the future strategic planning for capital cities, which requires that the identification of opportunities for development focuses on infill development and increasing density along transit corridors and around activity centres.

An ongoing focus of the NT Government's consideration of opportunities to satisfy future accommodation demand has been to increase the potential contribution of the private sector to the supply of additional residential land. The mix of private and Crown land proximate to various district centres creates opportunities for private sector participation in the development of residential land. An innovative approach will be required to the identification and funding of the service infrastructure necessary to support such development.

## Issues and Opportunities

Continued population growth and demand for local facilities and services in the rural area create opportunities to respond to physical and socio-economic issues. Rural village development creates the opportunity to manage this growth rather than respond to the implications.

### Aspirations of Existing and Potential Rural Residents

While some rural residents express concern about lots less than the generally accepted minimums of two and eight hectares, residents of small lots ranging from 4000m<sup>2</sup> to 1ha, in historical subdivisions at Whitewood Park and Howard River Park, consider themselves to be part of the rural community with interests and concerns in common with residents on larger lots. Recently created rural residential lots of 1ha at The Grange, Girraween Estate and Sayer Road have been well received by the market.

Notwithstanding possible concerns about lots less than 2ha, the potential for such lots to satisfy the aspirations of at least some who wish to reside in the rural area cannot be ignored. Smaller appropriately serviced lots may increase the sustainability of rural living on unserviced larger lots, through reduced impacts of future population growth on natural resources (particularly groundwater) and increased availability of local facilities and services and associated employment.

A choice of housing styles in specific locations also has the potential to minimise the impacts of continued population growth on the amenity of existing rural living areas by reducing pressure for ad hoc and haphazard development.

### Water Resources

The Howard East Aquifer, which underlies much of the rural area, is a valuable resource utilised by rural residents for domestic and irrigation purposes, and by the Power and Water Corporation to augment supplies from Darwin River Dam to provide urban supplies.

Access to this resource has been a significant factor which has contributed to the economic viability of rural living lots relying on groundwater for domestic supply.

Recent investigations, which will inform a future Water Allocation Plan for the aquifer, place doubt on the past premise that the rural lifestyle, based on larger lots utilising bores to supply water, represents a sustainable use of the resource. This doubt is a compelling reason to consider alternatives to unserviced large lots to meet the continuing demand from a significant proportion of the regional population who wish to live outside the urban areas.

The possible impacts of future development on the smaller aquifer which underlies the Berry Springs District Centre also supports the consideration of options around that centre. Preliminary investigations of the resource, again suggest there may be some concern with the sustainability of the ongoing utilisation of the water by residents on unserviced rural lots.

## Ownership and Infrastructure Viability

The lack of service infrastructure has constrained development within identified District Centres. The reliance, to date, on individual on-site or small package treatment plants to deal with the treatment of effluent is of concern given possible contamination of the significant underlying groundwater resources.

Government commitment to the provision of major infrastructure, such as sewerage treatment and disposal and centralised water storage, will be required. The fragmented nature of the ownership of land, which would be served by this infrastructure, and the lack of a clear framework for development, has hindered the development of a strategy to provide the necessary infrastructure.

A policy framework for creation of rural villages has the potential to generate the necessary economies of scale in relation to infrastructure provision and encourage private developers, who are currently investigating opportunities for more intense development, to progress proposals with some confidence. Release of Crown land in some centres may also create the opportunity for both public and private contributions to the provision of headworks necessary to connect to the major infrastructure.

## An Ageing Population

In common with the rest of Australia, the Darwin region has an ageing population with almost half of the growth between 1996 – 2006 in the 55 to 74 age group. While some older rural residents may be attracted in their retirement to an urban lifestyle, others will retain a preference for aspects of the rural lifestyle.

The provision of a range of lots, including urban and rural residential lots, within the rural area will provide a choice for those who, for reasons including age, are no longer inclined to or capable of maintaining a larger lot, but who wish to remain within their local community. The provision of housing choice within the various rural villages will provide ready access to an increased range of local facilities, activities and services.

A review of Census data and predictions by the Australian Institute of Health and Welfare suggest the potential market for formal aged care facilities in the rural area may be of a size to support a viable local facility. While the collocation of retirement villages and residential care services is seen as a commercial advantage for such facilities, there may be opportunities in creating a central facility with a number of smaller satellite facilities providing independent living units or self care units distributed across various rural villages.

Serviced urban residential land within the district centres will create the opportunity to provide independent living and formal aged care in locations which allows residents to maintain connections with their local community.



# Overview of Area Plans

While there are particular issues relating to each of the localities, there are also elements common to the concept of development in and around rural villages.

A dynamic community with its own distinct character relies on a threshold population in the immediate locality to support a range of local facilities and services. There are also threshold considerations in relation to the economic viability of the service infrastructure necessary to support a range of activities.

A fundamental consideration in determining a framework for future development in the rural areas is the recognition of the validity of the choice of those who consider lots less than 2ha are a threat to the rural lifestyle. Identifying specific sites for more intense development creates choice, while also respecting and protecting attractive characteristics of various lifestyles.

The provision of urban style residential lots of 800-1000m<sup>2</sup>, connected to reticulated water and sewerage, is integral to creating the necessary population thresholds to establish the economic viability of required service infrastructure. Rural residential lots of 4000m<sup>2</sup> to 1 ha, provided with reticulated water but served by on-site waste disposal (subject to consideration of the capability of the land to accommodate on site waste disposal), will provide a further choice.

Specific principles of rural village development which respond to the issues include:

- Increased housing choice outside urban areas;
- Protection of the amenity of established rural living areas;
- Improved sustainability of unserviced rural living;
- Opportunities for local employment and community activities; and
- Improved viability of infrastructure provision.

## Housing Choice

While the 'family home' on the large lot with the water supply provided by a bore is, and will remain the predominant housing choice for many residents in the rural area, rural villages will provide opportunities for a variety of housing types. Young people, singles and older people wishing to live outside the urban areas, but seeking smaller dwellings or a lot requiring less maintenance, close to local shops, services or employment will have a choice. Potential demand for dedicated accommodation to cater specifically and exclusively for older people can also be accommodated in serviced rural villages, providing existing rural residents with the option of retiring locally.

## Established Rural Living Amenity

Identification of specific locations with potential for alternatives to the historic larger lots will provide a degree of protection for the amenity of established areas as ad hoc applications for rezoning of individual lots will be discouraged. The need for buffers and a local road network to minimise traffic increases on the existing road network, have been priority considerations in the identification of sites for potential future development.

## Sustainability of Rural Living

Creating appropriately serviced opportunities for housing choice in the rural areas will also improve the sustainability of continued development of unserviced rural living lots.

Accommodating at least some of those who wish to reside outside urban areas on lots with reticulated sewerage and water, minimises the impacts on resources, particularly groundwater utilised via existing domestic bores.

## Opportunities for Local Employment and Community Activities

Increasingly, people are seeking affordability, sustainability and strong connected communities within which to live. Mixed use villages have the potential to meet the needs of this section of the community with the added bonus that the centres will support a greater range of commercial and community facilities available to the broader locality.

As the numbers of people in and around a centre increase, so to does the opportunity for local employment and the viability of sporting recreation and community facilities, including public green space. Increased availability of local employment and community facilities has the added benefit of reducing the impacts of growth on traffic congestion and associated travel times to employment and services on the Darwin peninsula and in Palmerston.

## Viability of Service Infrastructure

Although population growth is creating demand for local facilities and services, their establishment is constrained by requirements for service infrastructure necessary to provide appropriate protection for the environment, particularly groundwater resources. An increased concentration of activities in and around district centres will generate the thresholds to establish the economic viability of providing the necessary reticulated power, water and sewerage infrastructure.

Infrastructure required to serve future development can be broken into three separate, but not always completely independent, categories. It is noted that these terms will be utilised to describe the infrastructure requirements associated with each of the identified rural village developments.

The first category is major works including electricity zone substations, sewerage ponds or treatment facilities, and water storage facilities and major pump stations which are normally the responsibility of the relevant government agency.

The third category is the internal distribution or reticulation network delivering services to each lot within a subdivision, which is the responsibility of the individual developer.

The second category, between these two, is headworks consisting of the electrical feeder network, sewer pump stations and rising and gravity sewer mains, and trunk water distribution mains.

In simple terms, the headworks link the major works with the internal distribution network. It is this headworks infrastructure which provides opportunities for economies of scale and the sharing of costs between individual developers, as there is potential for a single (albeit larger) connection to the major infrastructure to serve a number of individual developers rather than duplicating smaller individual connections. Identification of a framework for future development, supported by an infrastructure strategy, would enable allocation of a proportion of the headworks costs to contributing developments.

While there are some interrelationships between the water and sewerage systems for each of the potential rural village developments, they can, to some extent, be considered independently. However, the development of any one of the villages is likely to generate demand for electricity which either utilises or exceeds the available spare capacity. Major works required to serve future development across the region will be substantial and include new or upgraded zone substations. The timing and staging of the required upgrades will depend on the progress of significant developments within the broader region (including the new urban area of Weddell) and will be determined by more detailed modelling of demand as the staging of future demand is identified.

## Contribution Plans

The introduction of Contribution Plans will provide a mechanism that will assist in the recovery of headworks costs and an equitable sharing between the various parties who will utilise the infrastructure. While cost sharing can be achieved, Contribution Plans can also lead to significant upfront costs to government.

To prevent the creation of an unacceptable financial burden on government, utilities and Local Government careful planning of the location and staging of development will be required. Consideration of the location and staging in the context of overall demand will minimise the creation of the unacceptable financial burden which may be associated with uncoordinated and ad hoc development.



## Humpty Doo Area Plan

The comprehensive range of uses provided through development of Crown land in the Humpty Doo District Centre demonstrates the benefits of collocating commercial, community, industrial and residential uses in appropriately serviced centres. Development of the centre commenced in the early 1980s with the construction of the schools followed by other community uses, some residential lots, shops and service commercial and industrial uses.

Recent interest from the private sector in developing sites adjoining the District Centre for residential use, suggest at least a perceived demand for alternatives to living on large lots. Development of this private land, together with further development of Crown land, has the potential to establish the economic viability of the headworks and major infrastructure necessary to support a further concentration of activities.

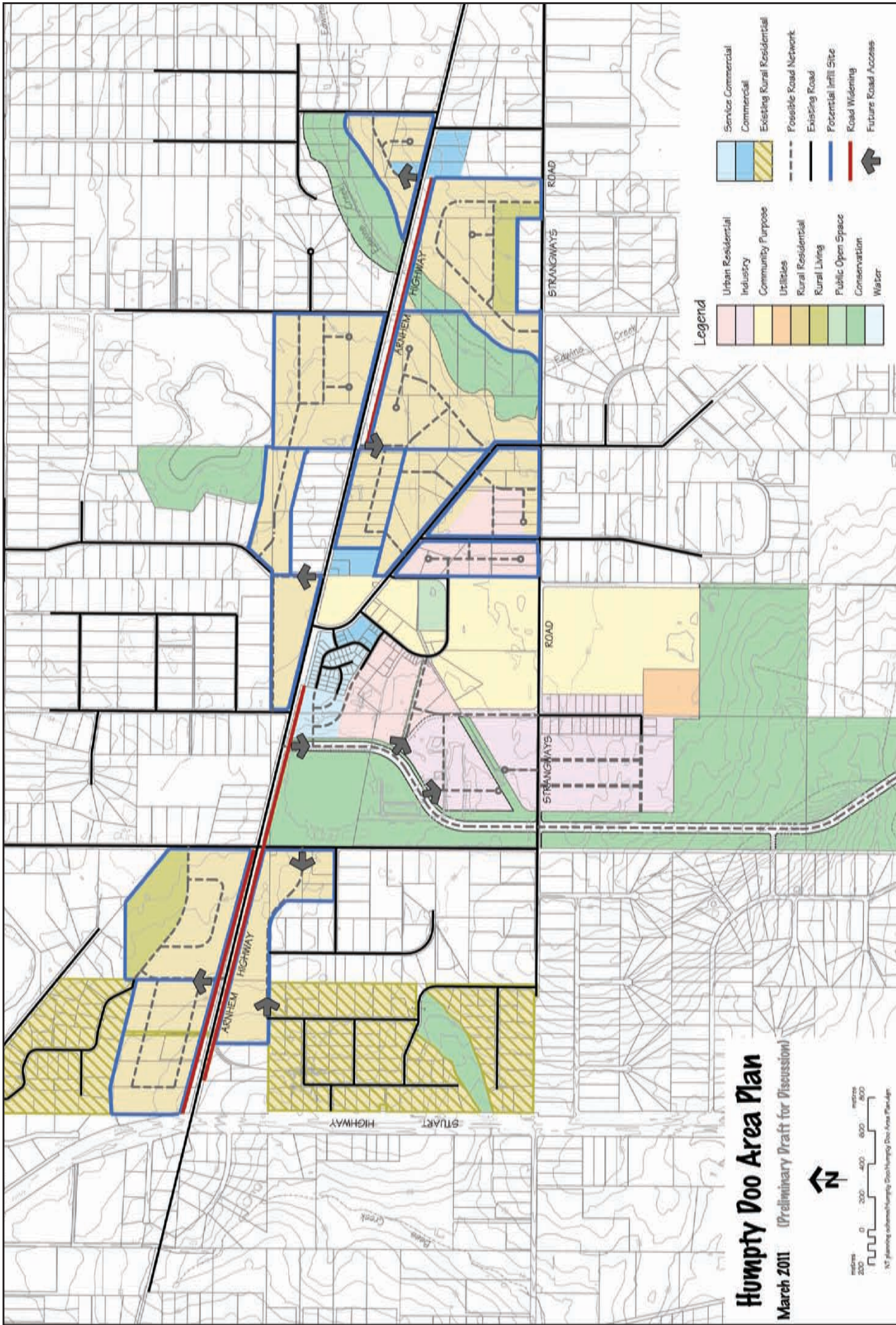
### Housing Diversity

The Humpty Doo Area Plan includes land either side of the Arnhem Highway from the Stuart Highway in the west to Edwin Road to the east of the District Centre. Included in the plan area are the Grange and Sayer Road, two of the first rural residential developments.

The plan identifies potential redevelopment sites and substantial areas of undeveloped land proximate to the established centre, which could provide increased housing choice including urban and rural residential lots.

Potential rural residential areas will integrate with existing rural residential development and enhance accessibility from those areas to services within the District Centre, while at the same time reducing the impacts of traffic on the local road network and existing rural living areas.





## Activity Centre

The availability of both reticulated water and sewerage in the Humpty Doo District Centre supports a range of community, recreation, commercial and service commercial activities. The Towards 2030 Land Use Plan identifies the potential for infill development and increased density to contribute to a busier and more viable centre providing a range of services to the immediate neighbourhood.

## Road Networks

The possible future road networks identified on the Humpty Doo Area Plan are indicative of a road network which would provide internal access while minimising the impacts of additional traffic on the existing local road network. Future road access points, particularly along the Arnhem Highway, take account of the constraints associated with role of the highway as a major arterial road within the regional network. Although the internal road network can be varied to accommodate particular development proposals, there will be very limited scope to vary the location of the access from the arterial road network.

## Service Infrastructure

Although the availability of reticulated water and sewerage at Humpty Doo has supported a concentration of activities in the centre, limited capacity of that infrastructure is now constraining further development. The identified potential infill sites create opportunities for both private developers and the government to contribute to the cost of headworks.

Preliminary investigations suggest areas identified on the Humpty Doo Area Plan have the potential to deliver in the order of 1050 lots consisting of 580 rural residential lots of 4000m<sup>2</sup> with reticulated water and on site waste disposal, 460 single dwelling residential lots of 1000m<sup>2</sup> with reticulated water and sewerage and 12 - 15 rural living lots as buffers to adjoining rural living areas.

Estimates suggest in the order of \$18 million worth of major works would be required to appropriately service this level of development, including additional ground level and elevated water tanks and transfer pumps, a major water main to provide a loop back to the Stuart Highway (\$12.8 million) and additional waste stabilisation ponds and a sewer pump station and rising main (\$5.2 million). Indicative allocation of these costs across the demand associated with the various proposed land uses, including community, industrial and residential, suggests a per fully serviced residential lot cost of \$21 700 and a per rural residential lot cost of \$12 800 for reticulated water.

Preliminary investigations indicate the possible costs of headworks required to connect this major infrastructure to individual development sites will vary between \$1000 and \$6530 per lot for water, depending on the particular site and in the order of \$8300 per lot for sewers.

Opportunities to stage the provision of infrastructure will depend on finalisation of a framework for future development and modelling based on population growth predictions. No provision has been made for the upgrading of the power infrastructure.





## Howard Springs and Pine Forest Area Plan

Development of the commercial and community facilities at Howard Springs occurred on private land and predated the identification of District Centres. As a result, the uses are not serviced by reticulated sewerage and tend to be fragmented, with the school and community recreation facilities separated by Whitewood Road from the commercial area.

Consolidation and infill development around the existing commercial and community uses has the potential not only to provide housing choice in the local area, but also to provide the necessary thresholds to support service infrastructure, improve the economic viability of local businesses and foster the creation of an integrated and lively community hub.

### Road Network

Possible future road networks identify solutions to existing traffic problems. The construction of Madsen Road and provision of a link from Smyth Road would provide an alternate to Whitewood Road for through traffic not wishing to access services in the local centre.

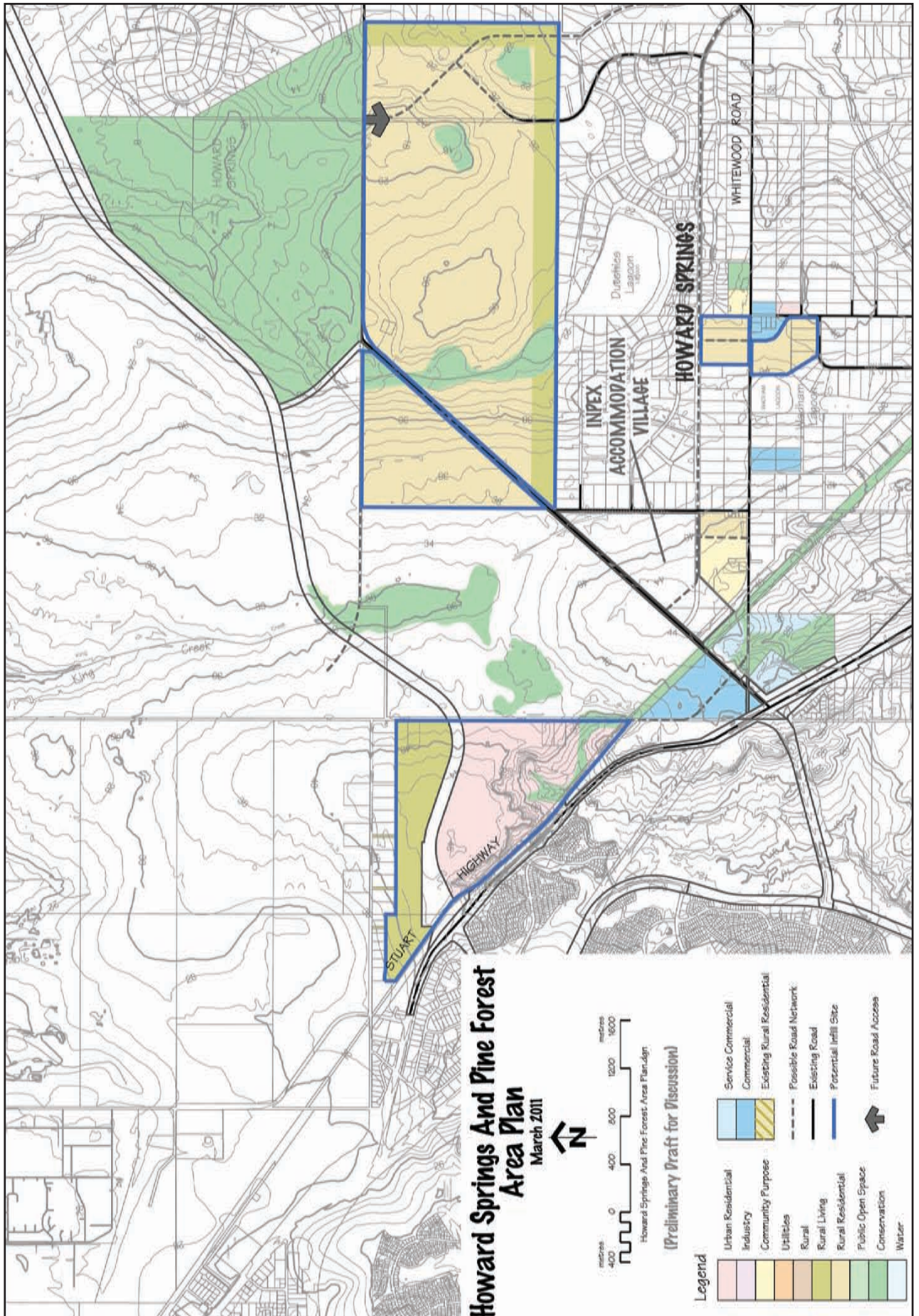
Relocation of the intersections of Whitewood and Madsen Roads with Howard Springs Road, takes account of current proposals for the provision of access to the Palmerston Indigenous Village and the Howard Springs Waste Transfer Station and traffic safety considerations.

### Housing Diversity

Larger private lots adjoining the existing commercial and community facilities, and with minimal direct interface with established rural living lots, have the potential to provide housing choice for existing or potential rural residents. Contributions from this development to the costs of service infrastructure, particularly sewerage, has potential to establish the economic viability of serving the existing and future concentration of community and commercial activities.

The area commonly known as the Howard Springs Pine Forest also has considerable potential for development of a range of housing types. Some of the land adjoins existing small lot rural residential to the south, and the size of the site creates opportunities to provide appropriate buffers to adjoining existing rural living development on larger lots.





## Urban Enhancement

The provision of alternate routes for through traffic would create opportunities for urban enhancement to assist in transforming the existing local centre into an attractive and integrated centre with improved pedestrian links between commercial and community facilities. Such a centre has the potential to further enhance the existing character of the Howard Springs Local Centre and contribute to the economic sustainability of further development.

## Commercial and Service Commercial

Land in the vicinity of the Howard Springs Road and the Stuart Highway has previously been identified for tourist and service commercial use to supplement the established commercial uses in the existing centre. Proposed realignments of the road network in this locality will improve access to land with potential for development.

## Service Infrastructure

While reticulated water is available in the immediate vicinity of the existing commercial centre, waste disposal is by way of individual on-site treatment systems. Without a framework for future development of a reticulated sewerage system, incremental and uncoordinated provision of these individual systems will continue. This approach is unsustainable with the long term viability of individual systems considered to be questionable.

Although as a general rule, on site waste disposal is considered appropriate on lots down to 4000m<sup>2</sup>, proximity of the Pine Forest to the Howard Springs Nature Park suggests the need to connect future development of this locality to reticulated sewerage. The Pine Forest overlies the Whites formation which surface as Howard Springs at the fault line between this formation and the Howard East Aquifer. While the potential for pollution of the aquifer is low, the potential for direct contamination of the springs, via subsurface flow of contaminants, is high.

Preliminary investigations suggest the Howard Springs Pine Forest and the area between Wallaby Holtze Road and the Stuart Highway has the potential to deliver approximately 1200 rural residential lots of 4000m<sup>2</sup>, 450 urban lots and some larger rural living buffer lots to adjoining rural living areas.

Estimates indicate the potential to stage the provision of the major works required to service various components of the future development. Initial development of some 1200 lots would require about \$13.5 million worth of major works, including new ground level and elevated water storage and new sewer ponds.

Although further investigation is required to establish the environmental and economic viability of the use of package sewerage treatment plants, there is a possibility for such infrastructure to provide for some limited development pending the construction of major infrastructure. The costs of such treatment plants, which preliminary estimates suggest could be about \$10 000 per lot, could be considered to be either major infrastructure or headworks depending on whether they serve single or multiple developments.

An allocation of the costs of major infrastructure to serve the initial development suggests a per residential lot cost for this initial stage of development of \$10 900.

Preliminary evaluation suggests costs of headworks required to service the initial stage of development will be of the order of \$29 000 per residential lot.

A second stage, which would produce some 500 lots, would require in the order of \$7.3 million of major works, including a further water storage tank and augmentation of the sewage treatment ponds suggesting a per residential cost of \$14 600 per lot.

Preliminary evaluation suggests costs of the headworks required to serve this second stage of development will be of the order of \$51 100 per residential lot.

These figures do not include the costs of power infrastructure and that there is also potential for significant development of regional facilities on the Howard Peninsula to contribute to the major works.

The Howard Springs Area Plan also identifies potential for development of some land immediately adjoining the existing Howard Springs Local Centre. Investigations suggest headworks costs to service this area, including retrospective servicing of the existing commercial and community uses to be about \$1.5 million which equates to a cost of some \$10 200 per rural residential lot.

Establishment of a framework for future development will enable refinement of the staging and the distribution of the cost of major infrastructure, and to some extent headworks. This refinement will focus on improving the economic viability of the required infrastructure and inform a future contribution plan to ensure an equitable distribution of costs.





## Coolalinga / Freds Pass Area Plan

The Freds Pass Recreational Reserve is a regional facility providing a range of organised recreational activities including, polocrosse and other equestrian events, as well as various football codes, cricket, and a multitude of other informal community activities. The significance of this facility is reflected in the allocation of \$980 000 in the budget to the upgrading of infrastructure in the reserve. Development of the adjacent District Centre has been limited to community facilities including schools, a child care centre, a church and the Litchfield Council offices. Existing and proposed commercial development at Coolalinga complements the recreational and community uses at Freds Pass.

As with Howard Springs, development in the Coolalinga and Freds Pass area has access to reticulated water, but is served by individual on site waste disposal systems. Although areas within the Freds Pass District Centre have previously been identified for a variety of commercial and residential uses, including a site for a caravan park, development has been constrained by the lack of necessary service infrastructure.

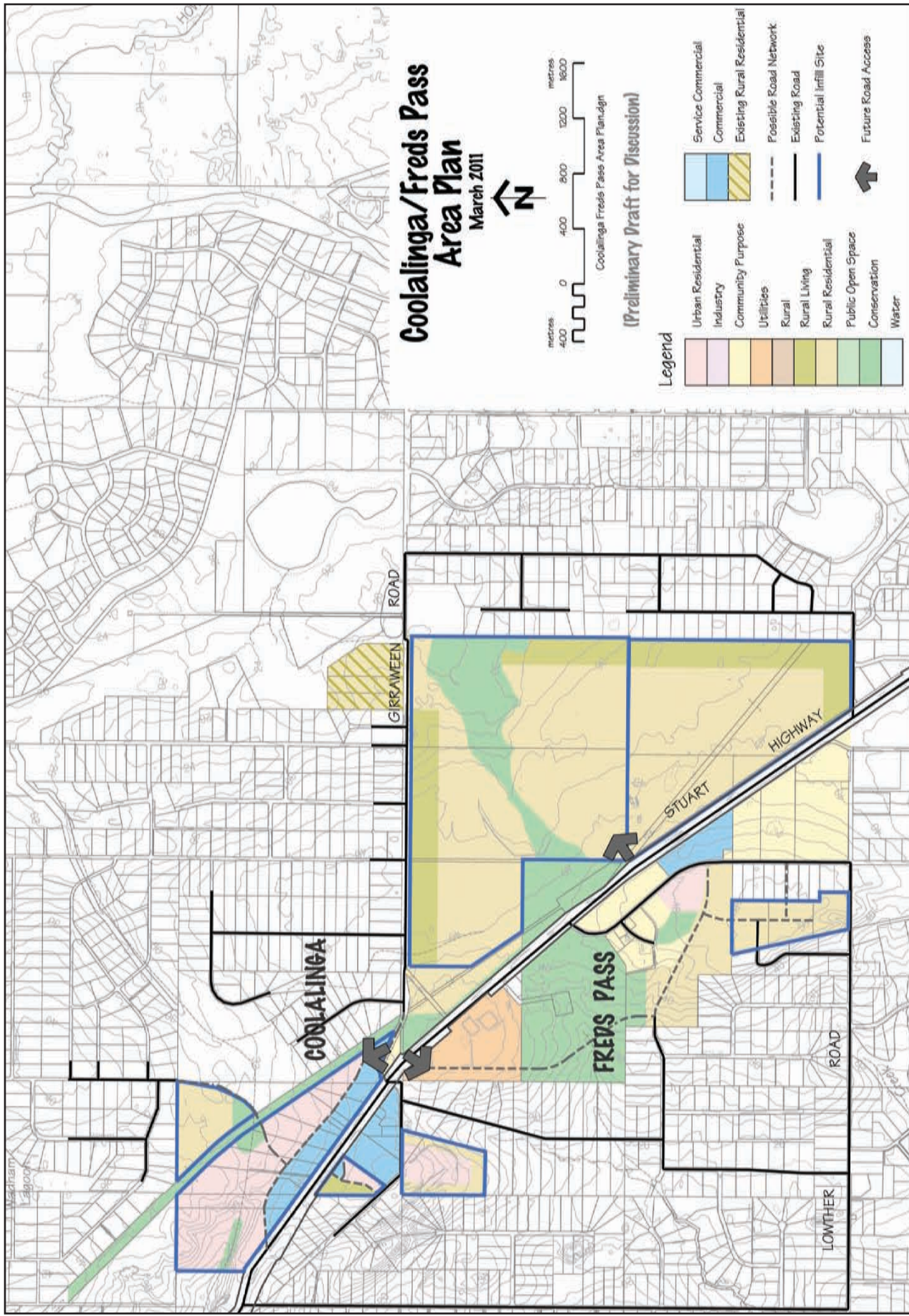
### Heritage

The WWII Sattler Airstrip is located within the Stuart Highway Road Reserve on the eastern boundary of the Freds Pass District Centre and the circular aircraft parking bays to the west of the strip are still evident. Sattler Crescent follows the alignment of the parking bay access and the area plan suggests future road alignments also mirror the alignment. Detailed evaluation of remnants from WWII use of this locality will inform the detail design of future development. Opportunities to include heritage sites of significance within public areas will be identified.

### Activity Centre

The Towards 2030 – Land Use Plan identifies that recent growth in the broader region has already placed pressure on the availability of land for retail, and office and commercial floor space, and identifies Coolalinga as an appropriate location for creation of a Major Activity Centre providing a wide mix of commercial, service commercial, community and social facilities.

Recent approval of the significant commercial proposal on the northern side of the Stuart Highway, incorporating three major anchor tenants and a range of other retail and office floor space, and interest in further commercial redevelopment of the caravan park site on the southern side of the highway, validates this assessment of demand.





## Housing choice

Vacant private and Crown land within and adjacent to the established commercial, community and recreation facilities creates opportunities to develop a variety of residential uses, including urban style residential and rural residential incorporating buffers to protect the amenity of adjoining rural living areas.

Preliminary evaluation of the potential for development in this locality suggests a minimum of some 1000 lots, including 800 rural residential lots and 200 urban style residential lots. This development will not only provide an additional choice for rural residents but will also assist the consolidation of the centre to create an integrated and lively community hub.

## Road Network

The possible road network identified on the Area Plan is intended to minimise the impacts of additional traffic on the amenity of established rural living areas. Given the location of potential development sites either side of the Stuart Highway, it will be important, at the detailed design stage, to consider and identify opportunities for interconnection between the east and west and to adjoining areas.

## Service Infrastructure

Although there is some question about the capacity of water and power infrastructure to serve the extent of possible future development in this locality, these services are available. The lack of reticulated sewerage has been the major constraint to development, with development to date relying on individual on site treatment and disposal systems.

Investigations have identified a number of reticulation and treatment options. All the reticulation options include the construction of sewerage pump stations and a combination of gravity or rising mains with treatment options including discharge to the Palmerston system or to new treatment facilities at Howard Peninsula.

A master sewerage strategy will be required to determine the most appropriate approach, and this needs to be developed in association with proposals for the Howard Springs Pine Forest and Howard Peninsula.

A solution which may allow development to proceed in this locality prior to the establishment of a sewerage strategy, is to install temporary package treatment plant/s. Small individual plants could be installed at the location of future pump stations or a single plant could be installed on Howard Springs Road to serve Coolalinga, Freds Pass and Howard Springs. The plants could be augmented as required until the sewerage system develops to a stage where connection can be made, and the treatment plants removed or relocated. The quality and quantity of effluent and how it will be discharged will be important considerations with requirements for higher standards requiring a more sophisticated plant. Although more detailed investigation will be required to establish the feasibility of this approach, it is worth noting indicative costs for a sophisticated plant are about \$10 500 per residential lot with an operation annual maintenance cost of \$750 per lot.

The modular form of these treatment plants would enable their relocation to other areas when permanent sewerage becomes available, which would progressively reduce the cost as the plants serve more areas.

Investigations suggest the cost of the pump stations and rising mains necessary to connect areas identified on the Coolalinga / Freds Pass Area Plan, to a package treatment plant near the corner of Howard Springs Road and the Stuart Highway, would cost somewhere between \$7900 and \$25 800 per lot, depending on the location of the site.

The costs of the package treatment plant are not included, as the size and location will depend on the timing of development and the likely timeframe for the provision of permanent sewerage treatment facilities. Although a plant with capacity to serve full development of this locality would cost about \$8.5 million, it is likely only a small part of the area would be developed before the future Howard Peninsula Treatment facility comes online.



## Noonamah Area Plan

The Noonamah Area Plan identifies potential development of land to the east of the Stuart Highway from Goode Road in the north to Alverley Road in the south. The area is characterised by rural subdivision of 8ha lots and areas that have never been subdivided. Significant Priority Environmental Management areas associated with the drainage regime of the upper reaches of the Elizabeth River provide a degree of buffering between existing rural subdivisions and undeveloped land.

The area is also characterised by a number of significant heritage sites, including Strauss Airfield and historic anti-aircraft installations.,

The availability of significant areas of unsubdivided land, proximity to the future urban areas of Weddell, and potential for tourist development focused on heritage sites, combine to create the opportunity for a unique rural village.

### Heritage

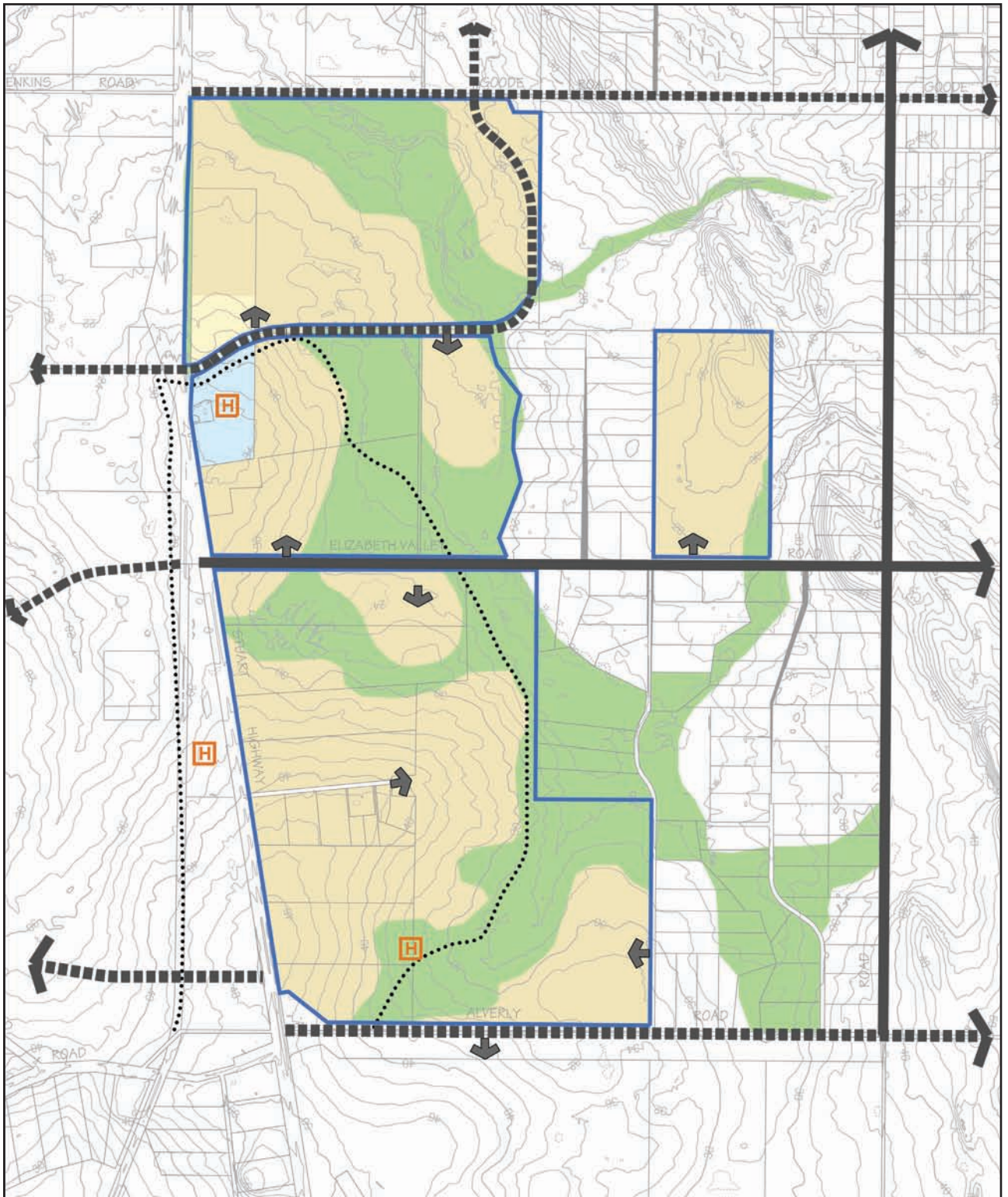
The Strauss Airstrip to the west of the Stuart Highway has previously been identified as having potential to form the focus of a comprehensive tourist information and accommodation facility complementing the heritage significance of the site. In combination with the visual impact of the future Weddell Arterial / Stuart Highway intersection, this locality has the potential to create a 'gateway' or sense of arrival to the Darwin region.

Priority Environmental Management Areas and the old rail corridor to the west of Strauss Airfield provide the opportunity to create a formal heritage trail, linking local sites of interest and ultimately connecting to the Darwin peninsula following the historical alignment of the old railway.

### Road Network

The identified future road network gives priority to local interconnectivity between Noonamah and the future urban area of Weddell. These connections will provide convenience for residents and minimise the potential for local traffic to create congestion at the Weddell Arterial / Stuart Highway intersection. Initial planning for Weddell identifies the potential role a link between the urban area and the existing Humpty Doo District Centre, via Noonamah, will play in providing an appropriate route for future public transport. Integration of an extension of Elizabeth Valley Road into the urban area of Weddell will also increase local accessibility.





# Noonamah Area Plan

March 2011



Noonamah Area Plan\_2.dgn

(Preliminary Draft for Discussion)

- |                    |                         |
|--------------------|-------------------------|
| Community Purpose  | Existing Road           |
| Rural Residential  | Future Arterials        |
| Conservation       | Possible Road Network   |
| Commercial         | Future Connector Roads  |
| Heritage Site      | Proposed Heritage Route |
| Future Road Access | Potential Infill Site   |

## Housing Diversity

The lack of a direct interface between much of the unsubdivided land and existing rural lots and the potential to provide a local road network which minimises the impact of increased traffic on the existing network, creates opportunities for the provision of increased housing choice outside urban areas. This is a particularly significant opportunity given the proximity of the locality to the future urban area of Weddell, and the higher level of services and facilities which will be readily available to Noonamah residents in the future.

## Activity Centres

Noonamah currently functions as a local service node providing a limited range of services focused mainly on passing trade. The Towards 2030 – Land Use Plan identifies the potential for infill development around the centre to create more activity and improve viability of a local neighbourhood centre providing a range of commercial and social facilities. The location of this centre on the future link between Weddell and Humpty Doo will also contribute to increased activity.

## Public Amenity

While Priority Environmental Management Areas are often considered to be a constraint to development, in the Noonamah locality the extensive corridors associated with the upper reaches of the Elizabeth River have the potential to create a unique living environment. The creation of heritage trails, linking various heritage sites, in combination with the provision of public recreation facilities, would provide a natural buffer to the existing larger rural lifestyle lots.

## Service infrastructure

Infrastructure costs for the potential development identified on the Noonamah Area Plan are preliminary and indicative only, as the details of the development will be influenced by and subject to review, given the proximity of this area to the future urban area of Weddell.

The Area Plan identifies potential for rural residential development, which may produce in the order of some 2000 rural residential lots, depending on detailed evaluation of land capability.

Initial investigation suggest the most appropriate strategy for the provision of reticulated water for the Noonamah locality will be to integrate supply into the Weddell system. Depending on hydraulic assessment of the existing infrastructure by Power and Water Corporation, there may be potential to service the northern area from an existing supply main. This will require a new main at a cost of approximately \$700 000.

The most appropriate strategy for the provision of reticulated water to the remainder of the area will be to integrate supply to the Weddell system when it is established. The provision of a booster pump, ground level storage and a rising main will be required prior to any residential development. Subsequent connection to the proposed Strauss Water Treatment Plant, and then to the Weddell elevated tank will provide for later stages of the development.

Investigations suggest the investment of about \$3.75 million will provide water reticulation headworks to serve up to 1800 lots which represents a cost per rural residential lot of about \$2100. Further expenditure of about \$375 000 will serve up to 3275 lots which represents a cost per lot of \$1300. This assessment demonstrates that the economic viability of providing infrastructure will improve as the total lot yield rises.





## Berry Springs

Although development within the identified Berry Springs District Centre is currently limited to the existing hardware store, service station and the proposed tavern, the centre has considerable potential to develop into a comprehensive village, providing a range of housing choice and a variety of facilities and services.

Significant contiguous tracts of vacant Crown land, combined with two privately owned parcels, provide a rare opportunity for the creation of a planned and integrated rural village.

### Public Amenity

A significant feature of the Berry Springs Area Plan is the identification and protection of substantial areas identified as requiring Priority Environmental Management. Protection of these areas is particularly significant given the proximity of the centre to the Berry Springs Nature Park and the iconic Territory Wildlife Park. Protection of these areas will assist in the creation of a vibrant and robust public realm to establish a distinct character for this community with strong links to the environment.

### Community Facilities

The construction of the school and community recreation facilities on the northern side of Cox Peninsula Road to the west of the District Centre pre-dated the identification of the centre. The Area Plan also identifies additional community purpose sites centrally located in the district centre to cater for future demand as the residential population grows.

### Activity centre

Berry Springs currently provides a limited range of services to residents from the broader rural community, and to the significant passing tourist trade. The Area Plan anticipates that the centre will have an ongoing role in providing services to the general locality, as well as a role in providing services to the residents of the village. The focus of the commercial area along Cox Peninsula Road recognises this dual role.

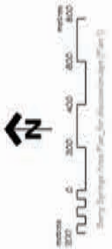
The provision for service commercial development within the centre, recognises the potential for the provision of services to support horticultural activities in the locality as well as village residents.

### Housing Diversity

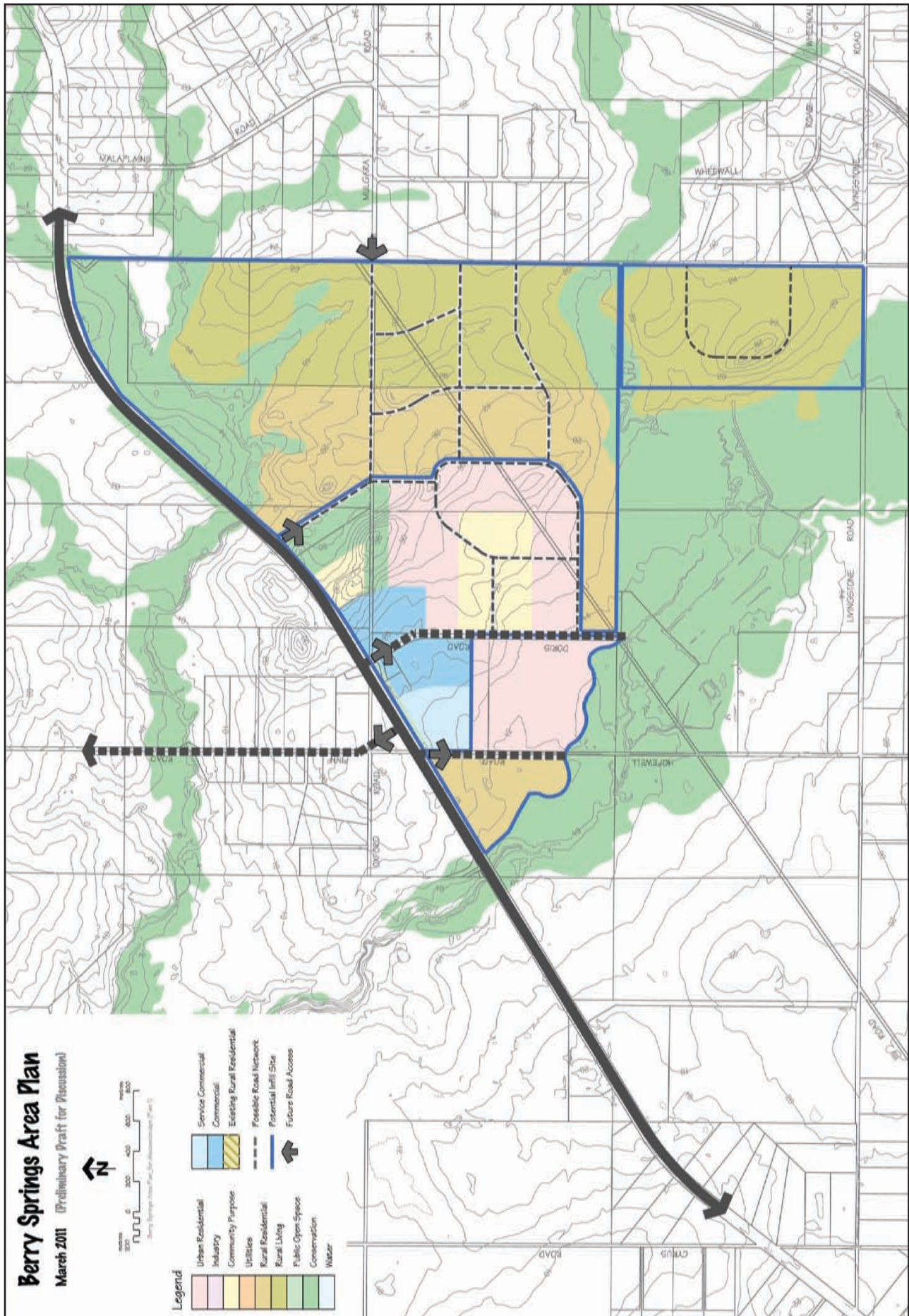
The undeveloped land in this locality creates a rare opportunity to provide a range of housing choices that will contribute to creation of a vibrant local community. The framework established by the Berry Springs Area Plan locates urban style residential lots in close proximity to commercial and community facilities, with rural residential lots between these urban lots and the established rural lots.

# Berry Springs Area Plan

March 2011 (Preliminary Draft for Discussion)



- Legend**
- Urban Residential
  - Industry
  - Community Purpose
  - Utilities
  - Rural Residential
  - Rural Living
  - Public Open Space
  - Conservation
  - Water
  - Service Commercial
  - Commercial
  - Edging Rural Residential
  - Possible Road Network
  - Potential Infill Sites
  - Future Road Access





## Service Infrastructure

Apart from reticulated power, there is no infrastructure at Berry Springs. Water supply is provided by bores and septic systems are utilised for effluent treatment and disposal.

Preliminary investigations suggest areas identified on the Berry Springs Area Plan have the potential to deliver a total of 2590 lots, consisting of 1230 rural residential lots of 4000m<sup>2</sup> with reticulated water and on site waste disposal and 1360 single dwelling residential lots of 1000m<sup>2</sup> with reticulated water and sewerage.

Estimates indicate the potential to stage the provision of the infrastructure. The Strauss Water Treatment plant, proposed to be constructed at the intersection of Cox Peninsula Road and the Stuart Highway to supply Weddell via elevated tanks, could also potentially service development at Berry Springs in the longer term. Determination of the most appropriate strategy will depend on the timing of the development of lots less than 2 ha. Although further investigation will be required to verify feasibility, there is potential for a local bore field and an elevated tank to provide an interim supply option for some 450 lots. Beyond this level of development, connection to the Strauss Water Treatment via a booster pump and rising main will be required.

Reticulated sewerage treatment and disposal will be required to serve any development of lots less than 4000m<sup>2</sup>. While a dedicated waste stabilisation system may be a possible solution, further investigation would be required to establish the viability of this option, particularly considering the issues likely to be associated with the discharge of waste water in this locality.

As future development of Weddell is likely to establish a sewerage pump station approximately 5km to the north of the Berry Springs locality, an option would be to postpone development of lots less than 4000m<sup>2</sup> until the Weddell infrastructure is available and transfer sewerage from Berry Springs via a local pump station.

Utilisation of a package waste water treatment plant may provide an interim solution. While the cost of a traditional waste stabilisation system to treat 3000 EP is around \$6 million, a package plant would typically cost between \$7.5 million and \$10 million, with significantly higher maintenance and operation costs.

Preliminary investigations suggest the cost of a local water supply to be about \$1.4 million or a cost of some \$2176 per residential lot. Expenditure of a further \$2.6 million (a total of \$4 million) to connect to the Strauss Water Treatment Plant has the potential to serve an additional 1200 lots, giving a per lot cost in the order of \$2250, with expenditure of an additional \$400 000 (total \$4.47 million) serving 1400 lots and a per lot cost of \$1368. These figures demonstrate the economic benefits of maximising the number of lots to be served by required infrastructure.

Headworks costs for the provision of sewer infrastructure required, prior to the development of lots less than 4000m<sup>2</sup>, suggest a total of \$2.3 million to serve up to 500 lots at a per residential lot cost of \$4600, followed by an additional \$250 000 (total \$2.55 million) to serve up to 1100 lots at a per residential lot cost of \$2300, and a final additional \$250 000 to serve up to 3000 lots at a per residential lot of \$930.

# Girraween

The Girraween Primary School is the only development within this local centre and the potential for further development is constrained by the proximity of the site to Power and Water Corporation production bores and the Water Management Area.

An area of about 4ha is identified for commercial development, with an additional area of approximately 6ha with potential for urban or rural residential development, subject to the provision of appropriate infrastructure to protect the groundwater resources.

Specific Use Zone **SL6** within the NT Planning Scheme establishes the framework for future development of this centre.

## Service Infrastructure

Minimal power and water infrastructure is likely to be required to support the extent of development possible in this locality.

The location of the site in relation to the Water Management Area and the production bores will require a package treatment plant or conventional sewerage system, with appropriate disposal infrastructure to protect the water resources.

The infrastructure required to serve future development will depend on the development proposed. As the land with potential for development is in a single ownership, there will be no opportunity for sharing costs.

# Implementation

Rural Village Development will require coordination across a range of government agencies, the Power and Water Corporation, local government and private developers. Implementation will have impacts across the community, particularly relating to increasing housing choice, and contribution of the private sector to the supply of additional residential land. The concepts will also have localised impacts on the areas immediately surrounding the villages, with potential detrimental impacts of increased activity balanced against increased access to local facilities and services.

Investigation and delivery of major infrastructure to facilitate development will be an important part of the implementation process and will require close coordination with local government and the private sector. The staging of development will be subject to market conditions, consumer choice and non government investment decisions. The intention is to create opportunities to integrate additional housing choices in existing communities by establishing a framework to encourage innovation in the subdivision and the development of appropriate sites.

The extent and timing of development in and around rural villages is difficult to predict, but will be influenced by:

- Involvement of all levels of government and the private sector;
- Determination of a contribution plan to share the costs of infrastructure;
- Government release of land; and
- Development of private land.

Future amendment to the NT Planning Scheme will be required to establish a legislative framework for the development of rural villages.

To assist in refining the proposals and establishing the details of necessary contribution plans, the community and landowners are invited to comment on the general concepts prior to formal consideration of possible amendments to the NT Planning Scheme. The possible amendments are outlined below to inform discussions with the community.

## Statutory planning actions

Amendments to the NT Planning Scheme to implement the development of rural villages will include the introduction of Planning Principles and Area Plans, Standards for the subdivision of land within infill development areas identified on the Area Plans and Guidelines.

## Area Plans and Planning Principles

Area Plans will identify those areas with potential for future infill development at a higher density than is possible in accordance with the zone which applies to the land. This identification will not change the zone or the associated rights to use or develop land in accordance with the zone, but will identify the potential for an alternative form of development.

The Area Plans will also identify potential infill sites which may include individual or multiple lots. Subdivision standards will establish criteria to be considered in determining an application to develop an identified infill site to ensure the coordinated provision of infrastructure.

## Subdivision Standards

The NT Planning Scheme currently includes provisions for the subdivision of land within Zone FD (Future Development). These provisions allow land to be subdivided in anticipation of a future change of zoning in accordance with an Area Plan. Similar provision will allow subdivision of Potential Infill Sites identified on an Area Plan. The provisions will establish the standards to be considered by the Development Consent Authority in determining an application, with an emphasis on compatibility of the proposal with surrounding uses, interconnectivity of road networks, access to facilities and services and a coordinated approach to the provision of the infrastructure necessary for the development of the site.

This approach will require cooperation between the various owners within a particular infill site which may create some frustrations if individuals are reticent to be involved. However, the approach will create the opportunity for a planned and coordinated response to the provision of increased housing choice in the rural area, rather than allowing development to happen in a haphazard and unplanned way.

## Guidelines

Guidelines will outline in more detail the issues which should be addressed in the preparation of and will be considered in the determination of an application to develop all or part of an identified Potential Infill Site.

## Process

Under the Planning Act, the Minister for Lands and Planning may, of his or her own initiative or at the request of a person or body, initiate an amendment to the NT Planning Scheme.

It is intended that the Minister will initiate an amendment to the NT Planning Scheme to introduce Area Plans, Subdivision Standards applicable to the Subdivision of Identified Infill Sites and Guidelines.

Inclusion of these amendments in the Scheme will create further opportunities for infill development. Exhibition of a proposed amendment to the NT Planning Scheme to introduce an Area Plan identifying a Potential Infill Site will provide the community with the opportunity to comment and identify issues of concern with the broader philosophy. Subsequent exhibition of a proposal to subdivide a Potential Infill Site will provide a further opportunity for the community to comment on more specific concerns relating to the details of the proposed development.







# Creating Rural Villages

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

Developing a series of distinct rural communities each with its own character is key to the delivery of The Greater Darwin Region Land Use Plan – Towards 2030.

The Land Use Plan is a guide to enable growth in the region and to create opportunities while maintaining and enhancing the prized Territory lifestyle. It documents a vision for a series of more compact, interconnected, lively, urban and rural communities to accommodate future growth.

Creating rural villages will respond to increasingly diverse housing, local employment and leisure needs while minimising impacts of growth on resources, the environment and the amenity of established rural localities.

The Discussion Paper provides a framework for development of these villages around various existing and proposed centres and seeks input from Territorians, particularly those from rural areas, on the concepts.



## Proposed Villages

The focus is on existing centres at Howard Springs, Humpty Doo and Coolalinga/ Freds Pass and on previously identified sites at Berry Springs, Noonamah and Girraween. These areas have been identified in response to trends which show demand for housing choice and local facilities and services.

For example, half the growth in population in the Darwin region between 1996 – 2006 was in the 55 to 74 age group. A range of lots sizes in rural villages will provide choice for those not inclined or capable of maintaining a larger lot but who wish to remain within the local community

## Overview of Rural Villages

While each locality is unique with different opportunities and issues there are also common elements.

### Population to support increased services and infrastructure

A dynamic community with its own character and identity relies on a local population to support a range of activities and make the infrastructure necessary to support these activities economically viable.

The villages will support a greater range of commercial and community facilities and services which will also be available to surrounding residents.

### Reticulated water and sewerage

Integral to providing the necessary population thresholds will be smaller urban style residential lots connected to reticulated water and sewerage. Some rural residential lots connected to reticulated water and served by on-site waste disposal will provide further choice.

These measures will also reduce the impact of continued growth on water resources by decreasing the reliance on groundwater.

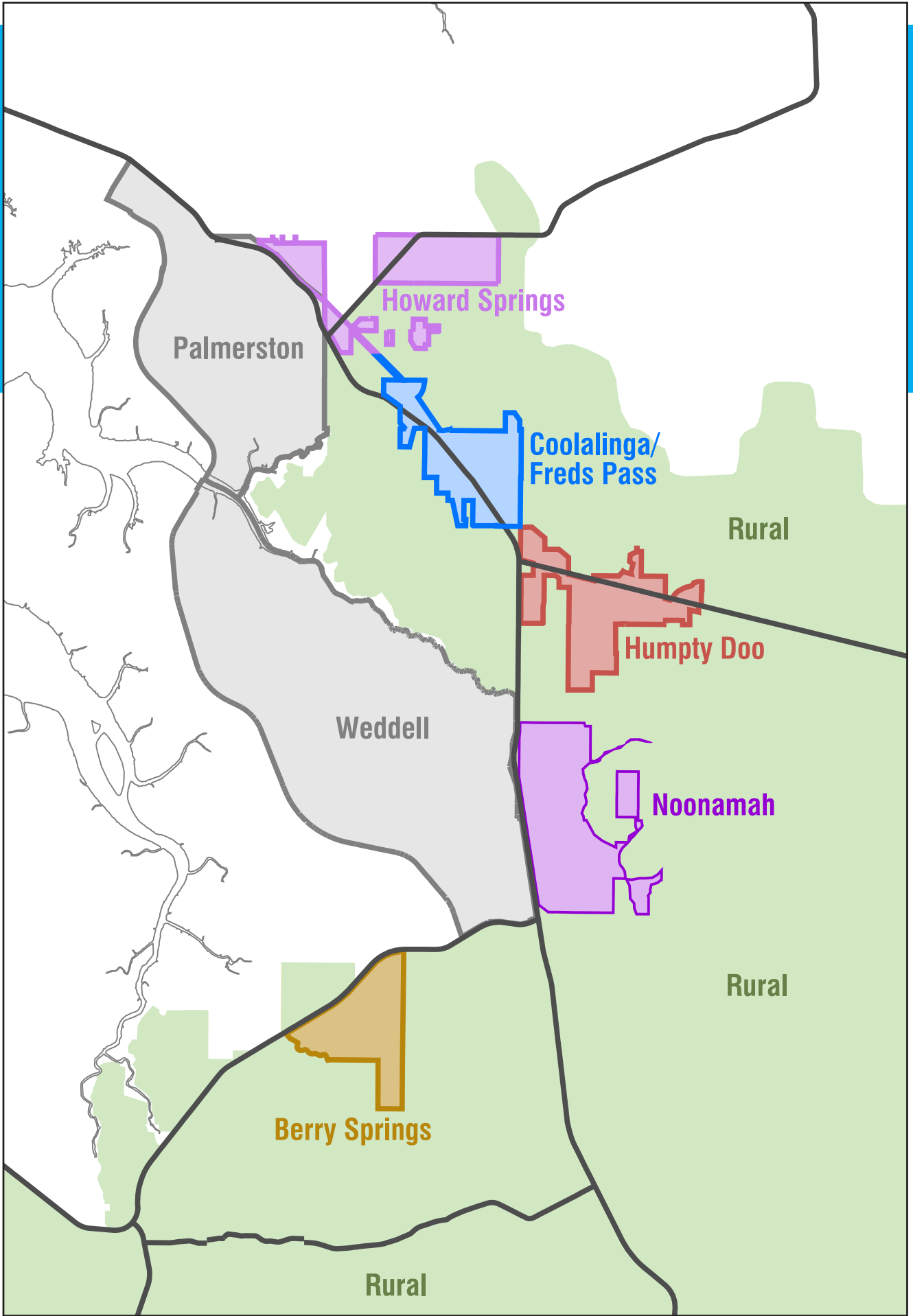
### Choice in housing

The preference of existing rural residents for larger lots is recognised with the predominant housing choice for many residents to continue to be the family home on large lots served by a bore. Concepts for rural villages intend to provide choice for young people, singles and older people wishing to live outside urban areas but on smaller, lower maintenance lots close to local services.

### Protecting local amenity and the environment

By having well thought out, planned development of rural villages as the population grows, the natural environment and the needs and wishes of existing residents can be protected.







## Implementation

The development of rural villages will require coordination across Government and encourage an increased contribution by the private sector to the supply of residential land.

Careful planning for the location and staging of development will enable sharing of the costs between the various parties who will utilise the infrastructure including the Government and private developers.

Future amendments to the Northern Territory (NT) Planning Scheme will be required to establish a legislative framework for the development of rural villages.

## Have your say

### The Rural Village Development Discussion Paper is on exhibition for 2 months.

The community and land owners are invited to provide comment on the broad concepts.

The Rural Village Development Discussion Paper can be viewed online at [www.growingnt.nt.gov.au](http://www.growingnt.nt.gov.au) as well as at the Department of Lands and Planning offices, Ground Floor, 38 Cavenagh Street Darwin.

All feedback will be considered and inform possible future amendments to the NT Planning Scheme.



## Berry Springs

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

Although development of the Berry Springs Centre has been limited, there is considerable potential for the creation of a comprehensive village providing a range of housing, choice facilities and services.

Opportunities for a rural village at Berry Springs include:

- Creation of a strong and robust public realm within the village through recognition and links to the natural environment of iconic Berry Springs Nature Park and Territory Wildlife Park.
- Providing services to future residents as well as the broader locality and passing tourist trade.
- A range of housing choice with rural residential lots providing a transition between urban style lots and established rural areas.
- Possible yield (subject to further investigations)
  - 1 230 rural residential lots (4 000m<sup>2</sup>).
  - 1 360 single dwelling lots.





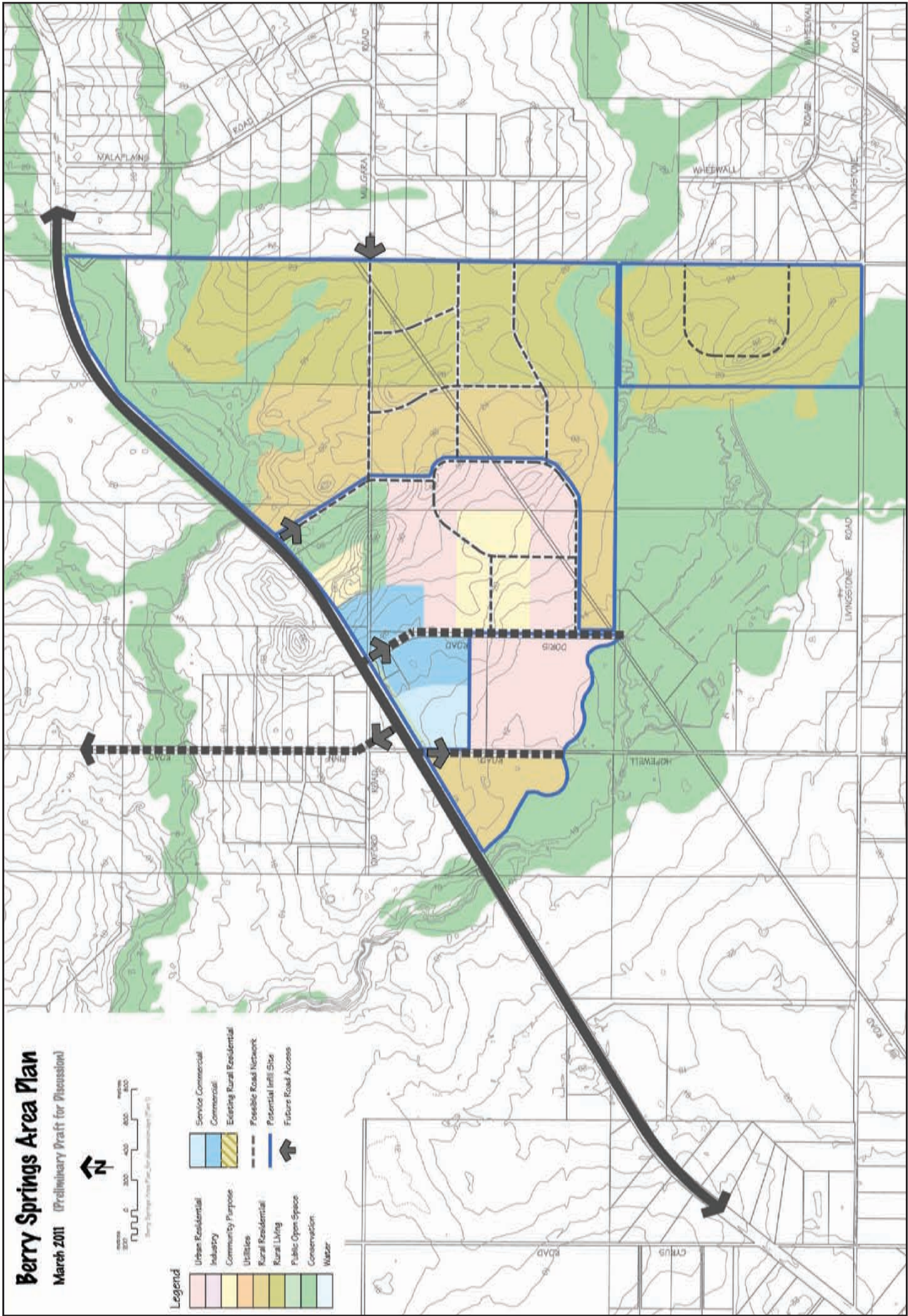
# Berry Springs Area Plan

March 2011 (Preliminary Draft for Discussion)



## Legend

- |  |                   |  |                            |
|--|-------------------|--|----------------------------|
|  | Urban Residential |  | Service Commercial         |
|  | Industry          |  | Commercial                 |
|  | Community Purpose |  | Existing Rural Residential |
|  | Utilities         |  | Possible Road Network      |
|  | Rural Residential |  | Potential Infill Sites     |
|  | Rural Living      |  | Future Road Access         |
|  | Public Open Space |  |                            |
|  | Conservation      |  |                            |
|  | Water             |  |                            |





## Coolalinga / Freds Pass

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

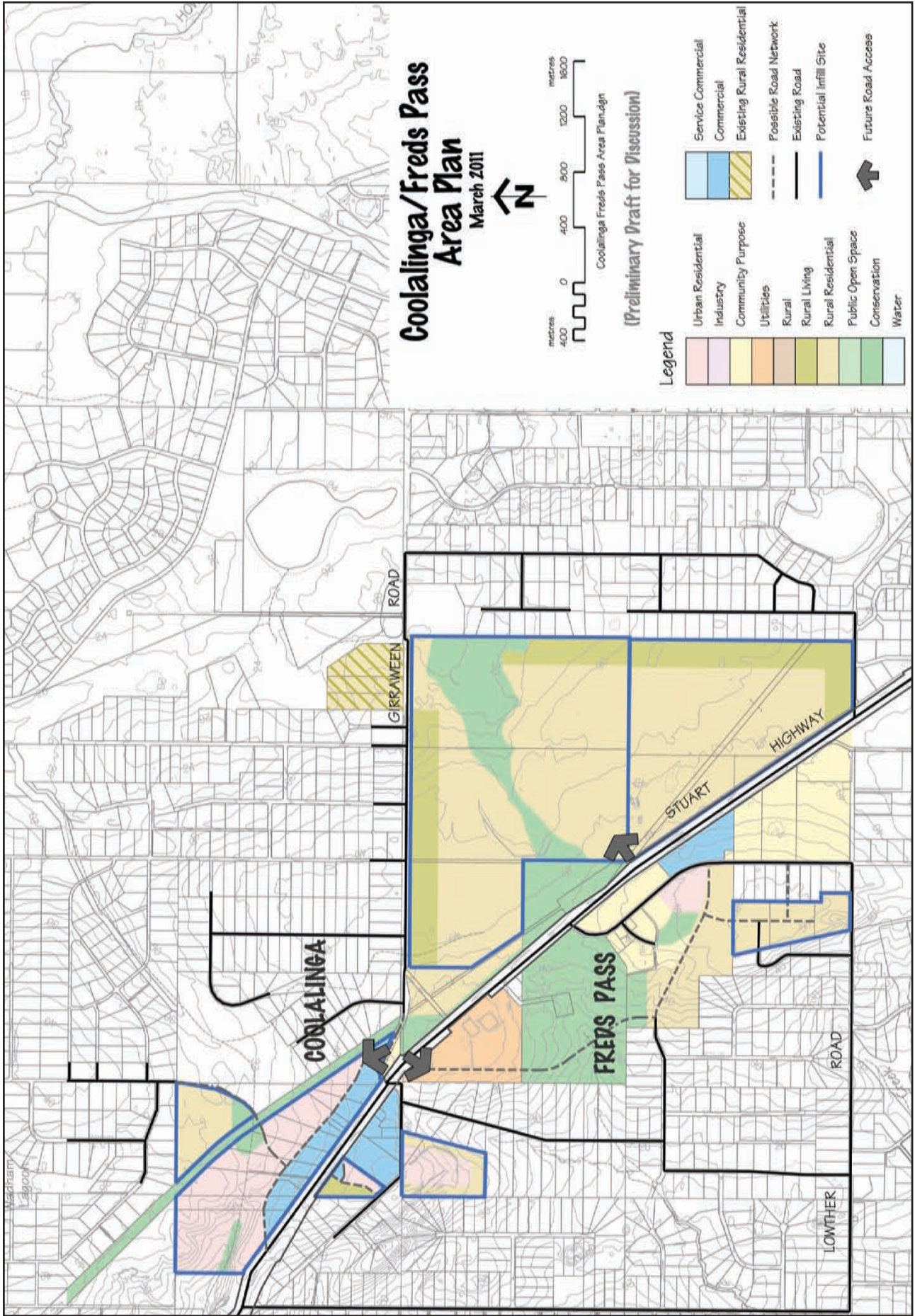
Significant regional recreation and community facilities at Freds Pass are complemented by existing and proposed commercial developments at Coolalinga. Further development is constrained by the lack of reticulated sewerage.

Opportunities for a rural village at Coolalinga / Freds Pass include:

- The reflection of the heritage significance of the Freds Pass locality in the design of road networks and location of public areas.
- The future role of Coolalinga as a major activity centre within the regional context.
- Development of vacant private and Crown land to provide a variety of residential uses.
- Interconnection of activities either side of the Stuart Highway.
- Possible yield (subject to further investigations)
  - 800 rural residential lots (4 000m<sup>2</sup>).
  - 200 single dwelling lots.









## Howard Springs

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

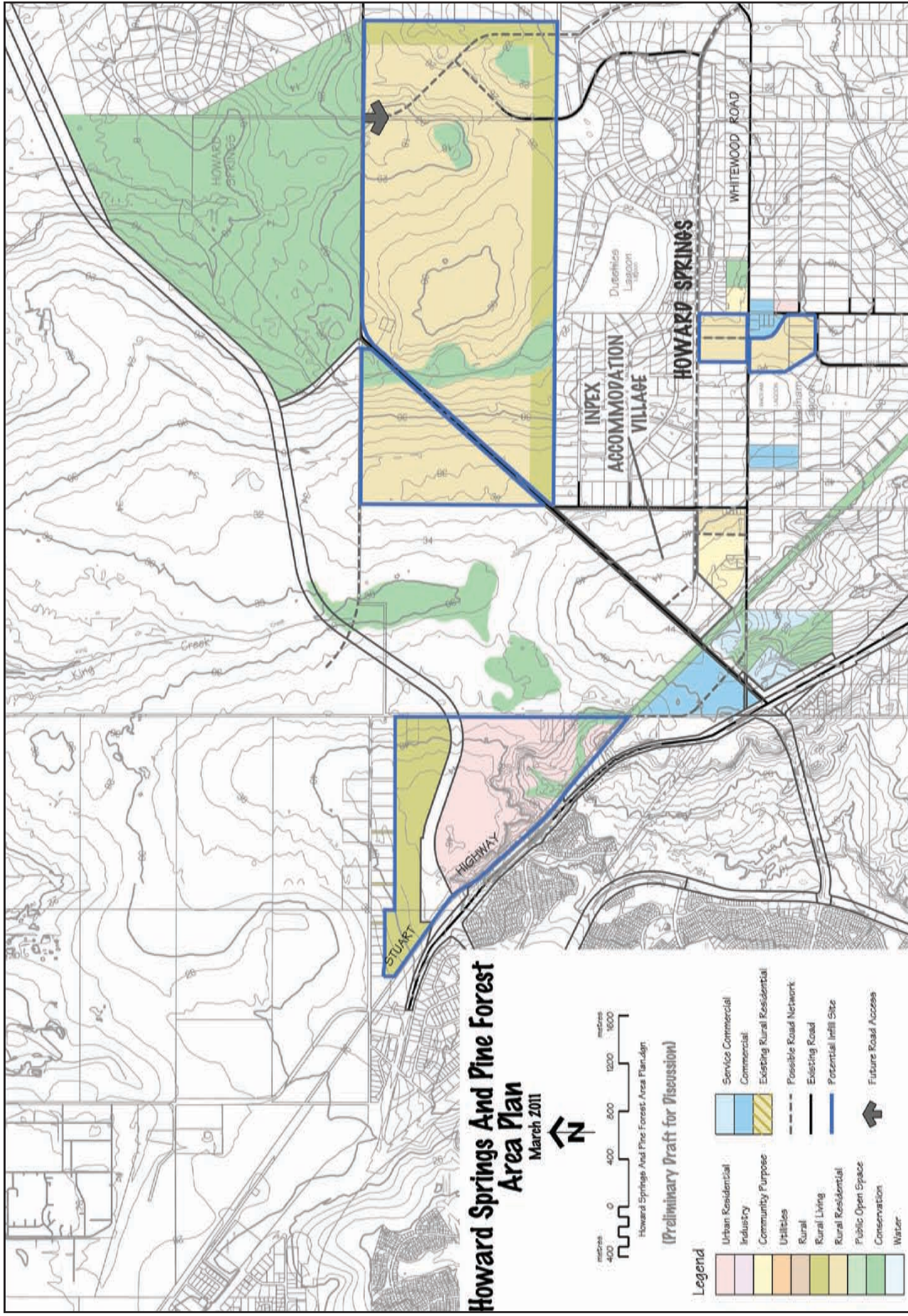
Historic ad hoc private development has created a fragmented and unserviced centre at Howard Springs. Consolidation and infill has the potential to provide housing choice and the necessary thresholds of activity to foster an integrated and lively hub and to establish the viability of the service infrastructure.

Opportunities for a rural village in Howard Springs include:

- Road networks which address existing traffic problems and create opportunities to establish an attractive and integrated centre with improved pedestrian links.
- Development of large privately owned land parcels and the Pine Forest to provide housing choice.
- Improved access and services to potential commercial development in the vicinity of Howard Springs Road and the Stuart Highway intersection.
- A framework for future development to support the provision of reticulated sewerage.
- Possible yield (subject to further investigations)
  - 1 200 rural residential lots (4 000m<sup>2</sup>).
  - 450 single dwelling lots.
  - Some larger rural living buffer lots.











## Humpty Doo

Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

The existing Humpty Doo centre demonstrates the benefits of collocating local activities and services. Private sector interest in development suggests demand for housing choice.

Opportunities for a rural village in Humpty Doo include:

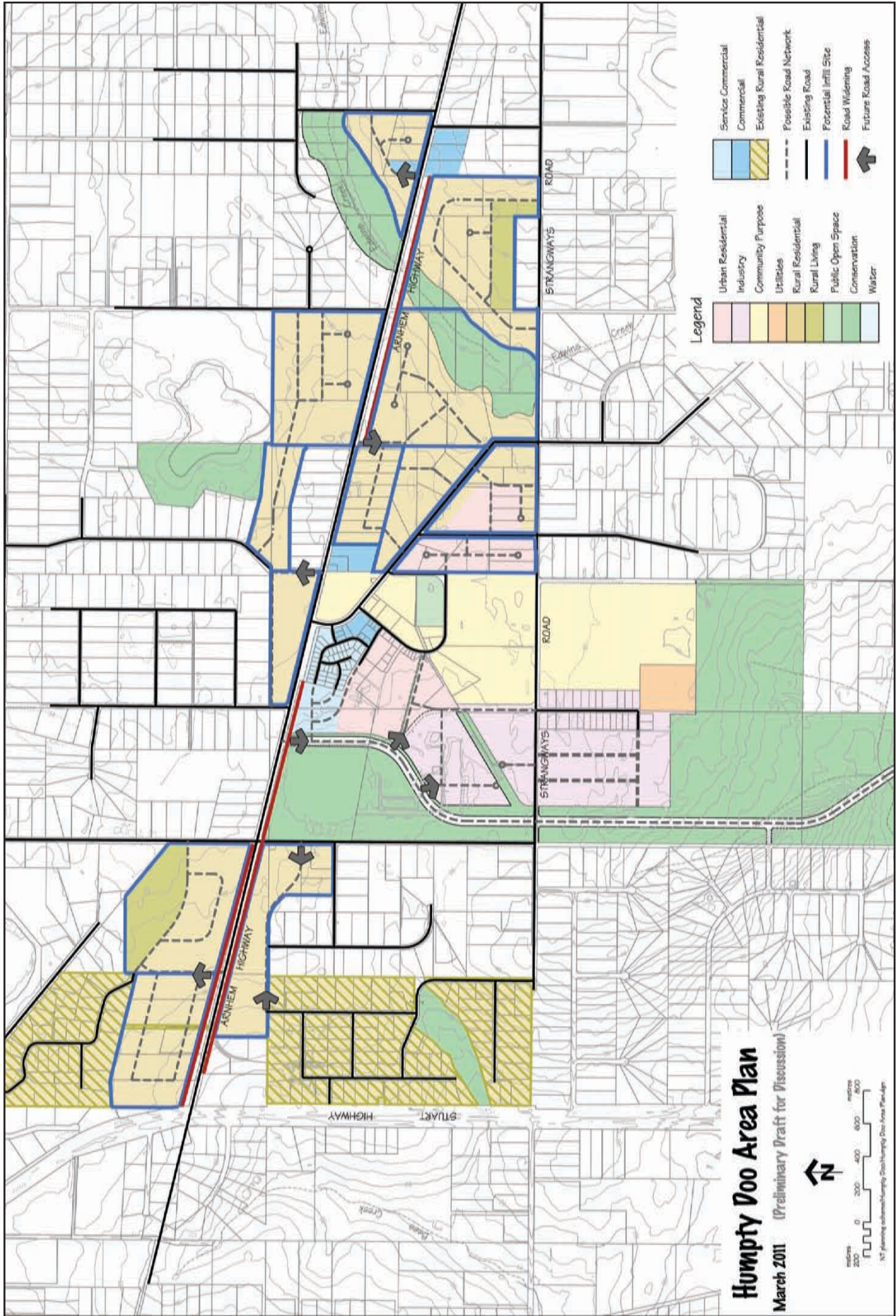
- Undeveloped land and potential redevelopment sites that provide housing choice including urban style and rural residential lots.
- Infill and further residential development contributing to a busier and more viable centre.
- Future road networks which minimise the impacts of additional traffic on the existing local road network.
- Further public and private development to support necessary infrastructure and sharing of the associated costs.
- Possible yield (subject to further investigations)
  - 580 rural residential lots (4 000m<sup>2</sup>).
  - 460 single dwelling lots.
  - Some larger rural living buffer lots.

## Girraween

Girraween Primary School is the only development within this local centre. Privately owned land has the potential to accommodate a variety of uses to serve the local area, subject to the provision of the appropriate infrastructure to protect ground water resources.

Specific Use Zone **SL6** within the NT Planning Scheme establishes the framework for future development of this centre.









## Noonamah

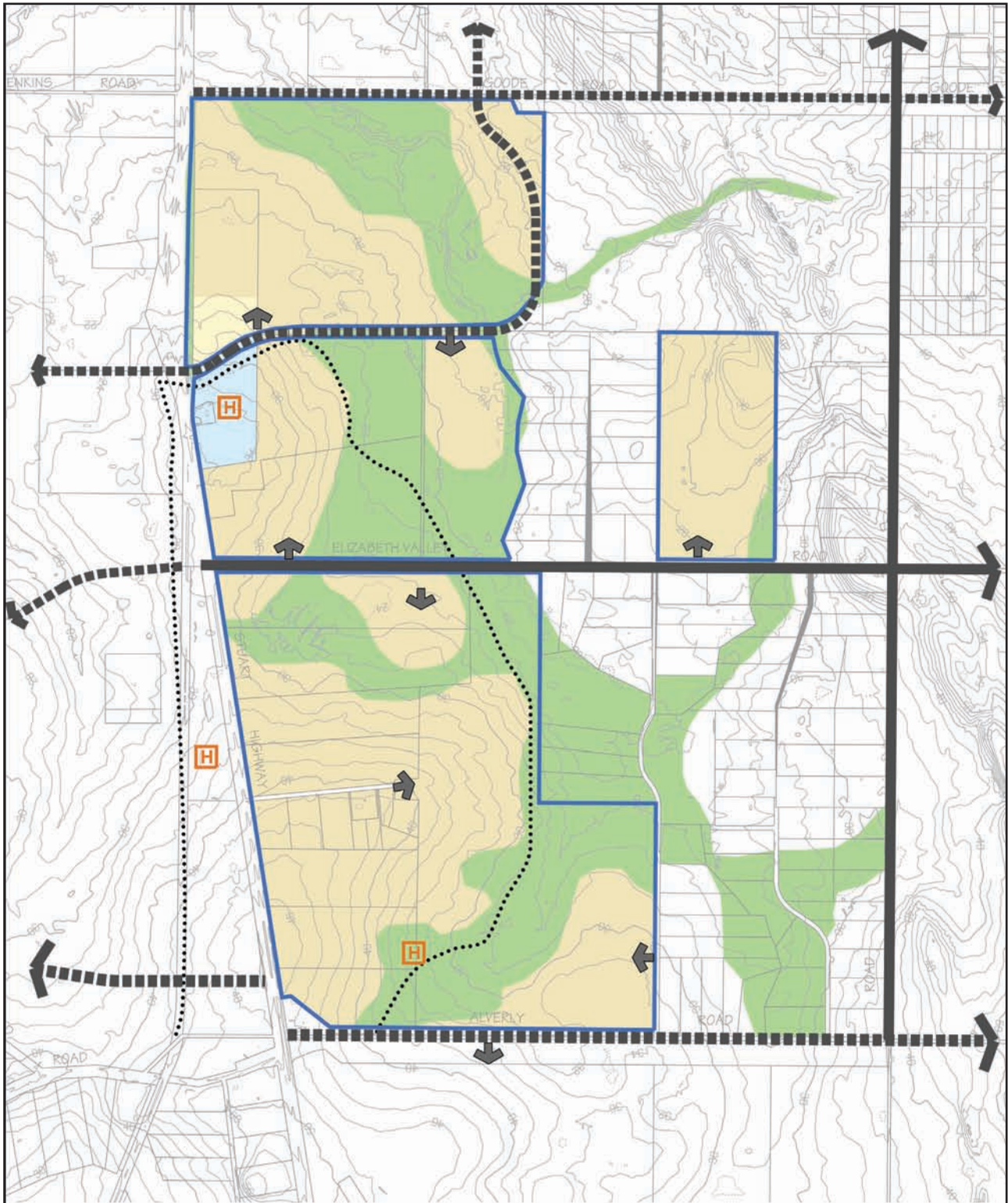
Rural Village development is about increasing housing choice, access to services and improving sustainability in rural areas.

Significant areas of unsubdivided land, proximity to the future urban area of Weddell and the potential for tourist development focused on heritage sites combine to create the opportunity for a unique rural village focused on Noonamah.

Opportunities for a rural village in Noonamah include:

- The potential contribution of heritage sites to the creation of :
  - A 'gateway' or sense of arrival to the Darwin region, and
  - A formal heritage trail.
- A road network which connects Noonamah and the future urban area of Weddell.
- Minimal interface between unsubdivided land and existing rural lots and a possible road network which minimises traffic on the existing network.
- Increased activity in the existing local service node due to the location on the future road link between Weddell and Humpty Doo.
- The potential contribution of Priority Environmental Management areas associated with the Elizabeth River that will create a unique residential environment with access to heritage trails and recreation opportunities.
- Proximity to the future urban area of Weddell will influence the provision of future infrastructure.
- Possible yield (subject to further investigations)
  - 2 000 rural residential lots (4 000m<sup>2</sup>).





# Noonamah Area Plan

March 2011



Noonamah Area Plan\_2.dgn  
(Preliminary Draft for Discussion)

- |                    |                         |
|--------------------|-------------------------|
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