

GYDE

Walgett Rural Residential Strategy

Bridging Report

Submitted to Walgett Shire Council

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Report Version: Draft for client review

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APPENDICES

Appendix 1 – SMEC Engineering Report

1. INTRODUCTION

In 2019, the draft Walgett Shire Rural Residential Strategy (the Strategy) was prepared to guide decisions on the future use and development of rural residential land. The Strategy aimed to identify candidate sites for rural residential development through the establishment of clear priorities and criteria based upon settlement patterns, access to services, the suitability and capacity of land and the protection of significant environmental areas.

The purpose of this bridging report is to undertake a desktop study and provide additional information on the servicing constraints of the rural residential candidate areas to support additional rural residential development within Walgett.

2. BACKGROUND

In May 2019, GHD prepared the draft Strategy to guide decisions on the future use and development of rural residential land in Walgett Shire. To identify appropriate locations for rural residential land, the Strategy considered:

- The Far West Regional Plan 2036
- A land suitability analysis
- Sustainability and liveability criteria
- Views of key stakeholders including the community, development industry, government agencies and Council
- Expressions of interest from land holders
- History of subdivision and development of all forms of rural land
- Assessment of suitable land which meets minimum requirements

Council adopted the Strategy and submitted it to the then Department of Planning and Environment (the Department) for endorsement. The Department responded to Council's request on the 8 April 2020 stating that it "*cannot endorse the draft Strategy in its current form... the draft Strategy does not, however evaluate the capability of the identified sites proposed to be rezoned for rural residential purposes.*"

It was determined that further analysis of the servicing constraints was required to determine a minimum lot size.

3. CANDIDATE AREAS FOR LARGE LOT RESIDENTIAL DEVELOPMENT

The draft Strategy identifies four candidate (Table 1) areas surrounding Lightning Ridge and Walgett suitable for rural residential development. The analysis identifies Walgett Area A and Lightning Ridge Area C are the most suitable for development in the short term (refer Figure 1 and Figure 2).

Table 1: Candidate areas identified in Rural Residential Strategy

AREA	SIZE
Walgett Candidate Area A – Come by Chance Road (North)	694ha
Lightning Ridge Candidate Area A – Shermans Way	69.2ha
Lightning Ridge Candidate Area B – Lorne Road	148.5ha
Lightning Ridge Candidate Area C – Bill O'Brien Way	44ha



Figure 1: Walgett Candidate Area A (Source: Walgett Shire Council/GHD)



Figure 2: Lightning Ridge Candidate Areas (Source: Walgett Shire Council/GHD)

4. ENVIRONMENTAL CAPABILITY OF CANDIDATE AREAS

The two key components to determine the capability of the candidate areas to support rural residential development are the environmental constraints (section 4.1) and serviceability of the lots (section 4.2).

4.1. Environmental Constraints

The Rural Residential strategy includes a multi-criteria constraints analysis, which evaluated and ranked the candidate areas on a series of criteria. It is important to note that the assessment of infrastructure did not include consideration of water and service servicing. The key findings of the analysis are summarised below:

SUITABILITY AND CAPABILITY CRITERIA	SUMMARY
Walgett - Area - A	
Infrastructure	1.3k from town. Electricity, road and phone infrastructure available
Environment	Small portion of western part subject to medium velocity flooding. Limited veg due to use for cropping. Riparian corridors contain 'Coolibah – Poplar Box – Belah Woodlands' an EEC. Portions of the site are subject to flood inundation.
Land use and resources	Use of land for rural residential would reduce capability for agricultural uses. Significant amounts of similar land available.
Heritage	No known Aboriginal or European Heritage
Lightning Ridge Candidate Area A	
Infrastructure	Very close to town. Electricity, road and phone infrastructure available.
Environment	Low velocity flooding affected a small portion of eastern boundary in previous flood events
Land use and resources	Approx. 30% of area, is a prospective location for gravel and opal resources.
Heritage	No known Aboriginal or European Heritage
Lightning Ridge Candidate Area B	
Infrastructure	1.4m from town. Electricity, road and phone infrastructure available
Environment	Low velocity flooding affected 30% (approx.) of eastern edge of site in previous flood events
Land use and resources	Approx. 30% of area, is a prospective location for gravel and opal resources.

SUITABILITY AND CAPABILITY CRITERIA	SUMMARY
Heritage	No known Aboriginal or European Heritage
Lightning Ridge Candidate Area C	
Infrastructure	6km from town. Electricity, road and phone infrastructure available
Environment	Relatively flat. Partially bushfire affected.
Land use and resources	Site is heavily resourced.
Heritage	No known Aboriginal or European Heritage

4.2. Servicing

4.2.1. Water

A key consideration to understand if each candidate areas can support rural residential development, is their serviceability. A Water Master Planning study (the Study) (Appendix 1) was prepared by SMEC to evaluate the servicing capability. The Study evaluated the capacity within the Walgett and Lightning Ridge networks and how the delivery of the candidate areas might impact on the network.

In summary, the Study finds that Walgett and Lightning Ridge networks are at or near capacity. Any substantial impacts on the network may need to be supported by an upgrade to the pumping and storage capabilities of the existing infrastructure. A common recommendation of the Study is that any future lots include on site tanks to store water and reduced demand during peak periods.

Walgett Area A

Walgett Area A is located 4km from the closest connection to the raw and potable water network. It is not possible to service this development directly from the network whilst maintaining the minimum pressure requirements.

Development of the Area is possible for minimum lots sizes of 10 ha, with implementation of a small diameter watermain and on-lot tanks with pressure boosting. At development densities greater than this, the pressure monitoring indicates that the existing system will have inadequate pressures.

Indicative costings for servicing truck infrastructure are \$1.6 million (potable) and \$2.09 million (raw).

Lightning Ridge Area A

The Study recommends that the future lots in this Area be serviced by on-lot tanks and a lead in main from the existing network.

It is noted, given the proximity of existing water infrastructure to the Area that it may be possible to directly service the lots from the network (without buffer tanks). If this option is to be pursued the Study recommends that further supporting investigations are undertaken when proposed development density is known and that Council undertake

additional pressure monitoring at the nearest hydrant in summer and at known peak times.

Indicative costings for servicing truck infrastructure are \$180,000 (raw).

Lightning Ridge Area B

There is existing water infrastructure in the vicinity of the Candidate Area, but it is very small. The existing water network is too small to directly service any proposed development density. The Study identified that if the pipe infrastructure is in good condition, it may be possible to service on-site tanks and pumps for a minimum 10ha lot size option.

The Study concludes that if an appropriate minimum pressure is not achieved at this location in summer, that a lead in main approximately 2km long is constructed from the development to the intersection of Opal St and Fred Reece Way.

Indicative costings for servicing truck infrastructure are \$920,000 (raw).

Lightning Ridge Area C

There is no existing infrastructure available to this candidate area. The Study identified that a 4.2km lead in main is required to service this candidate area. If Council is willing to invest in the infrastructure, it may be possible to service the lots directly from the reticulation network. The Study identifies a range of pipe sizes that would be necessary to support lots directly and on-lot tanks.

Indicative costings for servicing truck infrastructure are \$1.47 million (raw).

4.3. Sewer

Given the distance of the candidate areas from the existing infrastructure, the cost of providing infrastructure and anticipated minimum lot size of each candidate area, it is not proposed that the lots are connected to the town sewer infrastructure. In addition, it is common for rural residential development to provide on-lot sewer management.

5. CANDIDATE AREA SUITABILITY AND RECOMMENDED MINIMUM LOT SIZE

Based on the constraint's information (section 4.1) and servicing information (section 4.2)

CANDIDATE AREA	RECOMMENDED MINIMUM LOT SIZE
Walgett Candidate Area A	<p>Walgett Candidate Area A is the largest (694ha) candidate area for rural residential development. This area has the most potential to provide rural residential development out of all the candidate areas.</p> <p>It is recommended a 10ha minimum lot size be adopted for this Area. It is estimated (allowing for site constraints) that this could yield 30-50 lots.</p> <p>The Rural Residential Strategy forecasts an average annual lot demand of 6 lots, meaning development of this Area would provide considerable supply.</p> <p>The high cost to provide trunk services may impact on the attractiveness of</p>

	this Area for development.
Lightning Ridge Candidate Area A	<p>Lightning Ridge Candidate Area A has the closest town access of all the candidate areas.</p> <p>It is recommended that a 5ha minimum lot size be adopted for this Area given the possibility of connection to town water supply.</p> <p>It is estimated (allowing for site constraints) that this would yield 5-10 rural lots. Based on demand projections, this would equate to several years of supply.</p>
Lightning Ridge Candidate Area B	<p>Lightning Ridge Candidate Area B is the least constrained of the sites surrounding Lightning Ridge.</p> <p>It is recommended that a 10ha minimum lot size be adopted for this Area. Based on demand projects this would equate to several years of supply.</p>
Lightning Ridge Candidate Area C	<p>It is recommended that a minimum lot size no less than 10ha be applied to the Area. Given the distance from the network and likely infrastructure costs, it is unlikely the site will ever be serviced.</p> <p>This minimum lot size presents opportunity for around 3-4 lots, with most of the lots being heavily vegetated.</p>

6. FINDINGS AND RECOMMENDATIONS

This bridging report identified that all the sites were subject to a degree of constraint. Despite this, each of the candidate areas contained areas which were not constrained and present an opportunity for rural residential development.

Servicing is a key challenge to be addressed by any future rural residential development. The Water Master Planning study identified that even if the lots were connected to town water, it wouldn't support a reduced minimum lot size due to the network's limited capacity. Until significant upgrades occur to the network, it isn't envisaged that the rural residential candidate areas can support denser forms of rural residential development.

In addition, the Water Master Planning study contains costings for delivery of trunk infrastructure. The cost to provide the necessary services for the recommended lot sizes, will influence the attractiveness of the lands for development.

Based on the constraints and servicing findings, the following minimum lot sizes are recommended for each of the candidate areas:

CANDIDATE AREA	MINIMUM LOT SIZE (HA)
Walgett Candidate Area A	10ha
Lightning Ridge Candidate Area A	5ha
Lightning Ridge Candidate Area B	10ha
Lightning Ridge Candidate Area C	10ha