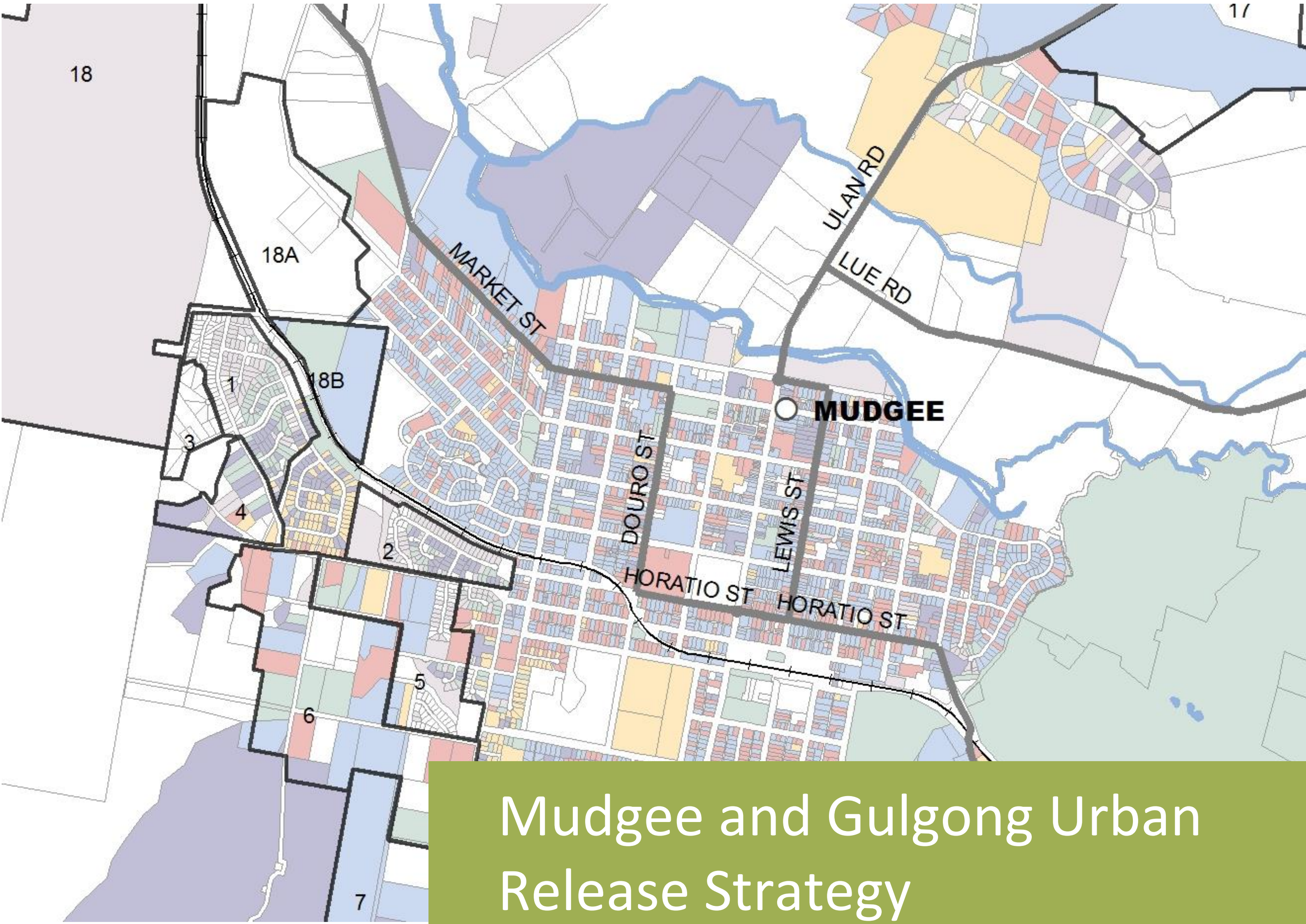

Mudgee and Gulgong Urban Release Strategy

Prepared for Mid-Western Regional Council

December 14

HillPDA CONSULTING

QUALITY ASSURANCE

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Introduction

Purpose of the Strategy

Strong population growth driven by the expansion of the local coal mining industry and sustained pressure for residential development is placing considerable pressure on the Mid-Western Regional Council (Council). To date the majority of housing growth has occurred in Mudgee however nearby Gulgong has also been impacted in recent years by shifts in the housing market.

Council in conjunction with the NSW Department of Planning and Environment (DP&E) identified the need to prepare an Urban Release Strategy for the towns of Mudgee and Gulgong to guide decision making around the timing, location and type of future residential development.

Strategy timeframe and Review

The Strategy timeframe is 20 years starting in 2015. It should be noted that the population projections use a timeframe of 2011 to 2031. However, the difference in the timeframes is not considered to materially impact the findings of this study.

Land Supply Monitor

Demand for and supply of dwellings is constantly changing. As such the figures in this Strategy must be constantly updated. To ensure Council remains nimble and ready to respond to the changing housing needs of its community HillPDA have built a custom Land and Housing Supply Monitor for Council to complement this Strategy. This easy to use Excel based model will allow Council officers to input quarterly data on population updates, rezonings, lot and dwelling approvals and track the need for additional land and dwellings. The model will track existing and pipeline stock, flag trigger points for land release, identify the amount of land needed and differentiate between housing types needed.

Planning Framework and Strategy

There is a complex interplay between a number of Council's plans and strategies due to differing hierarchy and function. A summary of the relationship between these plans, strategies and the Urban Release Strategy are detailed below.

Mid-Western Regional Comprehensive Land Use Strategy 2011

In 2011, the former Department of Planning endorsed the Mid-Western Regional Comprehensive Land Use Strategy (CLUS). The strategy provided the strategic framework to guide urban planning and land use decisions within the LGA to 2030. The CLUS prepared "town structure plans" for Mudgee, Gulgong, Rylstone and Kandos which visually represented the outcomes of the strategy.

A recommendation of the CLUS was to prepare an Urban Release Strategy for residential land to assist in infrastructure planning into the future.

Mid-Western Local Environmental Plan 2012

The CLUS provided the basis to inform the preparation of the Mid-Western Local Environmental Plan 2012 (MWLEP). The principle purpose of MWLEP was to consolidate the Mid-Western Regional Interim LEP 2008, Rylstone LEP 1996 and Merriwa LEP 1992 into the Standard Instrument LEP format. During the consolidation of these plans it became evident that despite the objective of the CLUS to identify land for future rezoning and development potential, the strategy did not provide sufficient site specific details to translate into the MWLEP 2012.

A small amount of land was rezoned in MWLEP to General Residential (R1) while a larger amount to Low Density Residential (R2). However, in considering planning proposals for the rezoning of land for residential purposes, Council relied significantly on the town structure plans identified in the CLUS as they specifically identified areas Council considered could accommodate future residential development.

Following the implementation of MWLEP 2012 a further 370ha of land was rezoned in Mudgee with a potential yield estimated at 1400 lots - Caerleon (320ha), Saleyards Lane (45ha) and Bellevue Road (6ha).

Development Servicing Plans

At present, Council is in the process of updating the Development Servicing Plans (DSP). These plans have a horizon of 30 years whereby the CLUS and URS are 20 year strategies and include hypothetical growth beyond that envisaged in the CLUS. Furthermore, the DSP consider residential development in areas that are not included or identified in the Mudgee Town Structure Plan.

Urban Release Strategy

The purpose of the Urban Release Strategy is to:

- Provide Council with a framework for the systematic release of residential land;
- Ensure that there is a balance between supply and demand so as not to undermine the economic viability of greenfield development or cause adverse impacts on housing affordability;
- Ensure that the staged release of land allows for the efficient and economic provision of infrastructure with particular regard to sewer and water;
- Understand and cater for the anticipated demand for urban residential land, the current level of supply and the amount of additional land required to meet future demand;
- Identify and address for the different housing sub-markets in Mudgee and Gulgong; and
- Identify the interplay between Mudgee and Gulgong housing markets and variables that influence that interplay.

Demographic Trends

Population Projections

DP&E have acknowledged their projections for the LGA do not account for the anticipated level of new mining activity expected in the LGA. With the assistance of Council, HillPDA have sought to estimate the population impacts of new mining activity over the next 20 years on Mudgee and Gulgong. This work is predicated on the new mining projects, employment levels and timings. It is acknowledged the actual commencement date of these projects may eventually differ from the estimate below. Timely and accurate land and dwelling monitoring and regular updates of this Strategy by Council will ensure land release is adapted to changes in demand on account of project delays and the like.

Mudgee's population is expected to increase by nearly 3,000 people between 2011 and 2031 to around 13,500 people in total. Gulgong's population is expected to increase by around 350 people over 2011-2031 to 2,730 people in total. HillPDA's projected population for Mudgee and Gulgong is significantly higher than the DP&E's projections.

Resident and Dwelling Characteristics

Over the last decade new mining activity has driven very strong population growth in Mudgee. The town's role as a regional centre and the broad range of amenities and social infrastructure has resulted in Mudgee attracting most of the LGA's new residents. As a result household incomes have risen substantially as has the number of families living in Mudgee. At the same time the proportion people renting in Mudgee has increased which illustrates the transient and sometime temporary nature of mining driven population growth. Gulgong's population has been less impacted by the mining boom and its demographic indicators reflect an older more established community. The dwelling stock in both Mudgee and Gulgong is dominated by separate houses (this includes with contemporary dual occupancies) which indicates a lack of housing diversity.

Residential Market Snapshot

The lack of diversity in housing types affects the ability of Mudgee and Gulgong's diverse population to all find accommodation that suitably meets their needs. The predominance in Mudgee and Gulgong of the detached, 700-900sqm block points to a homogenous housing solution for a diverse market (e.g. lone and couple households, retirees, downsizers, renters, young and older families). There is certainly a strong case for improving housing diversity in Mudgee to suit wide ranging need and circumstances. The following market trends are indicative that a greater diversity of housing is needed:

- Increasing popularity of the smaller lot dual occupancies in Mudgee (400-450sqm) due to lifestyle choice and low maintenance implications, and to a limited extent better affordability;
- Builder developers specialising in targeting the investor market are active, indicative of keen investor demand due to strong rental conditions;
- Forecast growth in demand for accommodation suitable for seniors in Mudgee;
- While there is an underlying demand for housing owing to population growth and strong employment rates, there is a finite ability of the market to pay for housing. Higher sale prices beyond purchaser affordability causes purchasers to rent and thereby putting pressure on an already tight rental market. This is particularly relevant for those people not working in the mining sector and earning higher incomes;
- An examination into purchasers' housing requirements suggests that while larger building dimensions and generous block sizes may be viewed favourably ('nice to have') by some purchasers (i.e. those who can afford it), a large proportion of the market will ultimately purchase according to their needs and what they can afford;

- Discussions with agents suggested a new higher density development (e.g. villa/towns houses) can generate substantial demand when in close proximity to Mudgee's shops and services, thus showing smaller format housing can work in the right place; and
- There is growing demand and limited supply of larger lot residential blocks around 2,000sqm and 2 hectares.

Supply and Demand Analysis

Supply Factors

A common misconception is that if land is zoned, vacant and undeveloped that is available for immediate development. In practice, this may not be the case. In fact there is often a 'disconnect' between the amount of zoned land and actual delivery of housing lots.

Land that is rezoned for residential development may not necessarily be delivered to the market. This could be due to a variety of reasons, including planning constraints (e.g. statutory requirements, difficulties with infrastructure provision, fragmentation of ownership, etc.), capacity constraints (e.g. bushfire, flooding, slope and landslip, etc.) and commercial pressures. Each has the potential to severely impede the supply response to demand pressures.

The adequacy of land release is therefore crucial for the supply of housing. From first principles the supply of housing directly impacts the price of housing. A constrained supply of land will drive up landowner expectations making site assembly a high risk and high resource activity for developers. This ultimately increases the cost of development.

Demand Factors

A number of methods can be used to estimate future dwelling demand. Three methods are applied in this Strategy: population projections method, dwellings approval method (includes CDCs) and water metre connections method. The number of residential lots required over the next 20 years to meet future demand in Mudgee and Gulgong varies considerably between the three approaches. However, the degree of difference is not as great over the next 10 years. This is largely due to strong population growth driven by construction of the new mining projects that are expected.

When nominating a preferred approach Council must be mindful that under estimating demand for additional residential land and lots has a potentially greater negative impact on the community than over estimating demand. For this reason it is recommended the level of demand calculated using the water metre connections approach be applied. The following table summarises the lots required using this approach.

Mudgee – Supply and Demand

The following table shows the land in Mudgee's urban release areas zoned for standard residential lots would be exhausted after 20 years. Land supply for 2ha residential lots would be exhausted after just 9 years. There does however appear to be sufficient land zoned for 2,000-4,000sqm residential lots to meet demand in the long term. The surplus of 2,000-4,000sqm residential lots is largely driven by the provisions of MWLEP 2012 Clause 4.1 (3A) (Minimum Lot Size Controls) which permits pre-designated 10ha and 2ha lots to be subdivided into 2,000sqm and 4,000sqm lots when Council is satisfied that each lot is, or will be serviced by a water reticulation system and sewerage system.

Table 1 - Mudgee: Existing Lot Supply Capacity vs. Future 20 Year Demand (2015-2035)

	Estimated Current Supply of Residential Lots	Estimated Future Demand for Residential Lots (2015-2035)	Difference	Average Lots Required Per Year (2015-35)	No. of Years Supply Remaining
General Residential (400-1000sqm)	1,981	2,083	-102	104	19
Low Density Residential (2000 & 4000sqm)	825	298	527	15	55
Large Lot Residential (2ha and over)	63	149	-86	7	9
Town houses / multi-unit housing	0	446	-446	22	0
Total	**2,869**	**2,976**	**107**	**148**	**20**

Source: HillPDA

Gulgong – Supply and Demand

The following table shows that under the current LEP controls land zoned for standard residential lots and larger lots over 4,000sqm in Gulgong's urban release areas would be exhausted after 35 and 27 years respectively.

Table 2 - Gulgong: Existing Lot Supply Capacity vs. Future 20 Year Demand

	Estimated Current Supply of Residential Lots	Estimated Future Demand for Residential Lots (2015-2035)	Difference	Average Lots Required Per Year (2015-35)	No. of Years Supply Remaining
General Residential (700-1000sqm)	563	326	237	16	35
Low Density Residential (2000-4000sqm)	56	38	18	2	28
Large Lot Residential (2ha and over)	27	19	8	1	27
Total	**646**	**383**	**263**	**19**	**20**

Source: HillPDA

Care must be taken when estimating the amount of supply that exists in this manner as it assumes all residential zoned land will be turned into lots. As previously mentioned this may not be the case in reality as the development potential of land is often collectively influenced by environmental, market or ownership constraints that can hinder development from occurring. A 'buffer' or additional amount of land must be factored in as a consequence.

Land Release Strategy

Guiding Principles

The following principles have been developed to inform future residential land release:

- ***Encourage higher density residential development in Mudgee and Gulgong town centres*** - Council should continue to encourage the development of higher density forms of residential development (e.g. townhouses, villas and the like) within walking distance of Mudgee and Gulgong town centres. This Strategy has identified that more than 20 higher density dwellings will need to be developed in Mudgee's CBD *every year* to meet growing demand generated by an aging population, investors and buyers looking for affordable housing.
- ***Rely on areas already zoned and nominated for residential development in the first instance to meet future demand*** - a substantial amount of residential land already exists in Mudgee and Gulgong for residential purposes. Where possible, future growth should occur in these areas before further rezonings. It may be that some release areas are appropriately zoned but require a change to the lot size controls to facilitate development. In this case Council should consider permitting these changes in accordance with the recommendations

provided in this chapter to ensure an adequate supply pipeline is maintained.

- ***Maximise use of existing Council infrastructure*** - the location of new residential development should seek to maximise existing and planned Council infrastructure, particularly water and sewage, so as to minimise costs to consumers and council and financial risk to the broader rate payer.
- ***Encourage and meet demand for a diverse range of housing types and lots sizes*** - Mudgee and Gulgong's housing market is diverse and dynamic. The Strategy must seek to address each of these market segments. Furthermore, new larger greenfield developments should provide a range of lots sizes.
- ***Facilitate orderly and coordinated approach to residential growth*** - the location and timing of new residential release areas should be informed by accurate and timely supply and demand monitoring. Rezonings that cannot establish a demand need should be discouraged.
- ***Ensure a pipeline supply buffer exists*** - Council should have 5 years' worth of land zoned for each residential type as a buffer to avoid future shortage (e.g. if demand if 100 dwellings per year, council should maintain 500 lots zoned fit for purpose).
- ***Protect employment lands and high value agricultural land*** - employment and high value agricultural land in and around Mudgee and Gulgong should be protected.

Recommendations

Our gap analysis found insufficient land zoned in Mudgee's urban release areas to meet long term 20 year demand for general residential lots (450-1000sqm) and 2ha lots. Gulgong's urban release areas contained sufficient land zoned to meet long term 20 year demand for residential lots.

Mudgee Land Release Recommendations

The following tables provide a summary of the projected demand and recommended supply of lots by housing type for Mudgee's urban release areas. The tables also show the number of lots required as a buffer to ensure adequate capacity exists to accommodate unexpected growth and the time taken to bring new lots to market. By comparing the estimated and required buffer it is possible to determine the trigger points to justify further release of land.

General Residential Lots (450-1000sqm)

Demand for general residential lots (450-1000sqm) in Mudgee's urban release areas is projected to average 104 lots per annum or

521 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 905 and 1,157 general residential lots available every five years until the year 2035. This level of supply will create a buffer of 549 to 636 lots over the next 15 years which is sufficient to meet the required 5 year buffer of 521 lots. The analysis indicates that further land may need to be released in the long term to accommodate demand in the 15-20 year period if high levels of demand were sustained.

Table 3 - Mudgee – Supply, Demand and Pipeline Buffer for General Residential Lots (400-1000sqm)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	104	521	521	521	521
Supply - Lots Available		1,070	1,157	1,093	905
Estimated buffer between lot demand & supply		549	636	572	385
Required 5 Year buffer between lot demand & supply		521	521	521	521

Source: HillPDA

Low Density Residential (2000-4000sqm)

Demand for low density residential lots (2,000-4,000sqm) in Mudgee's urban release areas is projected to average 15 lots per annum or 75 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 498 and 695 2,000-4,000sqm residential lots available every five years until the year 2035. This level of supply will create a buffer of 423 to 620 lots over that period which is sufficient to meet the required 5 year buffer of 75 lots. The massive surplus of lots this size is driven by the provisions of LEP Clause 4.1 (Minimum Lot Size controls).

Table 4 - Mudgee – Supply, Demand and Pipeline Buffer for Low Density Residential Lots (2000-4000sqm)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	15	75	75	75	75
Supply - Lots Available		498	642	695	650
Estimated buffer between lot demand & supply		423	567	620	575
Required 5 Year buffer between lot demand & supply		75	75	75	75

Large Lot Residential (2ha and over)

Demand for larger residential lots in Mudgee's urban release areas is projected to average 7 lot per annum or 37 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 76 and 88 large residential lots available every five years until the year 2025. This level of supply will create a buffer of 39 to 51 lots over that period which is sufficient to meet the required 5 year buffer of 37 lots. The analysis indicates that further land may need to be released in the long term to accommodate demand in the 10-20 year period if high levels of demand for 2ha lots were sustained.

Table 5 - Mudgee – Supply, Demand and Pipeline Buffer for Large Lot Residential (2ha and over)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	7	37	37	37	37
Supply - Lots Available		76	88	51	14
Estimated buffer between lot demand & supply		39	51	14	-23
Required 5 Year buffer between lot demand & supply		37	37	37	37

Source: HillPDA

The following table provides an overview of the Strategy’s recommendations for each of Mudgee’s urban release areas.

Table 6 - HillPDA Recommendations for Mudgee's Urban Release Areas and Lot Projections (2015-2035)

Urban Release Area	Location	Recommended Zone and Density of Residential Development	Recommended Minimum Lot Size	Rezoning Required?	Change to Lot Size Required?	Recommended No. of Additional Lots Available	Release Date
1	Bellevue Road	R1 General Residential	600sqm	N	N	40	2015+
2	Bellevue Road	R1 General Residential	600sqm	N	N	10	2015+
3	Bellevue Road	R2 Low Density Residential	2000sqm	N	N	45	2015+
4	Bellevue Road	R2 Low Density Residential	2000sqm	N	N	15	2015+
5	Rifle Range Road 1	R1 General Residential	600sqm	N	N	179	2015+
6	Rifle Range Road 2	R1 General Residential	600sqm	Y	Y	428	2020+
7	Rifle Range Road 3	R2 Low Density Residential	4000sqm	N	N	80	2015+
8	South Mudgee Infill 1	R1 General Residential	600sqm	N	N	10	2020+
9	South Mudgee Infill 2	R1 General Residential	600sqm	N	N	32	2020+
10	South Mudgee Infill 3	R2 Low Density Residential	2ha	N	N	4	2015+
11	South Mudgee Infill 4	R1 General Residential	600sqm	N	N	287	2025+
12	South Mudgee Infill 5	R1 General Residential	600sqm	N	N	4	2015+
13	South Mudgee Infill 6	R1 General Residential	600sqm	N	N	83	2020+
14	South Mudgee Low Density 1	R2 Low Density Residential	2000sqm	N	N	230	2015+
15	South Mudgee Low Density 2	R2 Low Density Residential	4000sqm	N	N	0	2015+
16	Broadhead Road	R2 Low Density Residential	2000sqm	N	Y	92	2020+
17	Ulan Road	R2 Low Density Residential	2000sqm	N	Y	294	2015+
18	Caerleon - General Density	R1 General Residential	450sqm	N	N	997	2015+
18	Caerleon - Large Lot	R5 Large Lot Residential	4000sqm	N	N	149	2015+
18A	Saleyards	R1 General Residential	600sqm	N	N	294	2015+
18B	Fairydale Lane - R1 Fairydale Lane - RU4	R1 General Residential R1 General Residential	600sqm 600sqm	N Y	N Y	45 60	2020+
18C	Hill End Road - Industrial	RU1 Primary Production	100ha	N	N	0	n/a
19	Spring Flat	RU4 Primary Production	20ha	N	N	15	2015+
20	Former Abattoir Site	R5 Large Lot Residential	2ha	Y	Y	67	2035+
21	Putta Bucca – R2	R2 Low Density Residential	2000sqm	N	Y	15	2035+
	Putta Bucca – RU4	R2 Low Density Residential	2000sqm	Y	Y	258	2035+
22	Burrundulla / Spring Flat - RU 1 Burrundulla / Spring Flat - RU 4	R5 Large Lot Residential	100ha 2ha	N Y	N Y	0 98	2015+
23	55 George Campbell Drive	RU4 Primary Production	2ha	N	Y	8	2015+
Total						**3,839**	

Source: HillPDA

Gulgong Land Release Recommendations

The following tables provide a summary of the projected demand and recommended supply of lots by housing type for Gulgong's urban release areas. The tables also show the number of lots required as a buffer to ensure adequate capacity exists to accommodate unexpected growth and the time taken to bring new lots to market. By comparing the estimated and required buffer it is possible to determine the trigger points to justify further release of land.

General Residential Lots (450-1000sqm)

Demand for general residential lots (450-1000sqm) in Gulgong's urban release areas is projected to average 16 lots per annum or 82 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 165 and 170 general residential lots available every five years until the year 2035. This level of supply will create a buffer of 83 to 89 lots over that period which is largely sufficient to meet the required 5 year buffer of 82 lots.

Table 7 - Gulgong – Supply, Demand and Pipeline Buffer for General Residential Lots (450-1000sqm)

	Average No. of Lots/Dwellings Required / Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	16	82	82	82	82
Supply - Lots Available		165	170	169	167
Estimated buffer between lot demand and supply		83	89	87	85
Required 5 Year buffer between lot demand & supply		82	82	82	82

Source: HillPDA

Low Density Residential (2000-4000sqm)

Demand for low density residential lots in Gulgong's urban release areas is projected to average 2 lots per annum or 10 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 30 and 60 2,000sqm residential lots available every five years until the year 2035. This level of supply will create a buffer of 20 to 50 lots over that period which is sufficient to meet the required 5 year buffer of 10 lots.

Table 8 - Gulgong – Supply, Demand and Pipeline Buffer for Low Density Residential Lots (2000 - 4000 sqm)

	Average No. of Lots/Dwellings Required / Year	0-5 years 2015-2019	5-10 years 2020-2024	10-15 years 2025-2029	15-20 years 2030-2034
Demand - Lots Required	2	10	10	10	10
Supply - Lots Available		60	50	40	30
Estimated buffer between lot demand & supply		50	40	30	20
Required 5 Year buffer between lot demand & supply		10	10	10	10

Source: HillPDA

Large Lot Residential (2ha and over)

Demand for larger residential lots in Gulgong's urban release areas is projected to average 1 lot per annum or 5 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 8 and 22 large residential lots available every five years until the year 2035. This level of supply will create a buffer of 3 to 17 lots over that period which is largely sufficient to meet the required 5 year buffer of 5 lots.

Table 9 - Gulgong – Supply, Demand and Pipeline Buffer for Large Lot Residential (2ha and over)

	Average No. of Lots/Dwellings Required Per Year	0-5 years 2015-2019	5-10 years 2020-2024	10-15 years 2025-2029	15-20 years 2030-2034
Demand - Lots Required	1	5	5	5	5
Supply - Lots Available		22	17	12	8
Estimated buffer between lot demand & supply		17	12	8	3
Required 5 Year buffer between lot demand & supply		5	5	5	5

Source: HillPDA

The following table provides an overview of the Strategy's recommendations for each of Gulgong's urban release areas.

Table 10 - HillPDA Recommendations for Gulgong's Urban Release Areas and Lot Projections (2015-2035)

Urban Release Area	Location	Recommended Zone and Density of Residential Development	Recommended Minimum Lot Size	Rezoning Required?	Change to Lot Size Required?	Recommended No. of Additional Lots Available	Release Date
A1	South East Gulgong	R1 General Residential	600sqm	N	N	367	2015+
A2	South Central Gulgong	R1 General Residential	600sqm	N	N	67	2015+
A3	North West Gulgong - R2	R2 Low Density Residential	2000sqm	N	Y	20	2030+
	North West Gulgong - R5	R2 Low Density Residential	2000sqm	Y	Y	80	2030+
	North West Gulgong - R5	R5 Large Lot Residential	2ha	N	Y	16	2035+
	North West Gulgong - R1	R1 General Residential	600sqm	N	N	130	2020+
A4	South west Gulgong	R5 Large Lot Residential	2ha	N	N	22	2015+

Source: HillPDA

1 INTRODUCTION

Purpose of the Strategy

Strong population growth driven by the expansion of the local coal mining industry and sustained pressure for residential development is placing considerable pressure on the Mid-Western Regional Council (Council). To date the majority of housing growth has occurred in Mudgee however nearby Gulgong has also been impacted in recent years by shifts in the housing market.

Council in conjunction with the NSW Department of Planning and Environment has identified the need to prepare an Urban Release Strategy for the towns of Mudgee and Gulgong to guide decision making around the timing, location and type of future residential development.

The purpose of the Strategy is to:

- Provide Council with a framework for the systematic release of residential land.
- Ensure that there is a balance between supply and demand so as not to undermine the economic viability of greenfield development or cause adverse impacts on housing affordability.
- Ensure that the staged release of land allows for the efficient and economic provision of infrastructure with particular regard to sewer and water.
- Understand and cater for the anticipated demand for urban residential land, the current level of supply and the amount of additional land required to meet future demand.
- Identify and address for the different housing sub-markets in Mudgee and Gulgong.
- Identify the interplay between Mudgee and Gulgong housing markets and variables that influence that interplay.

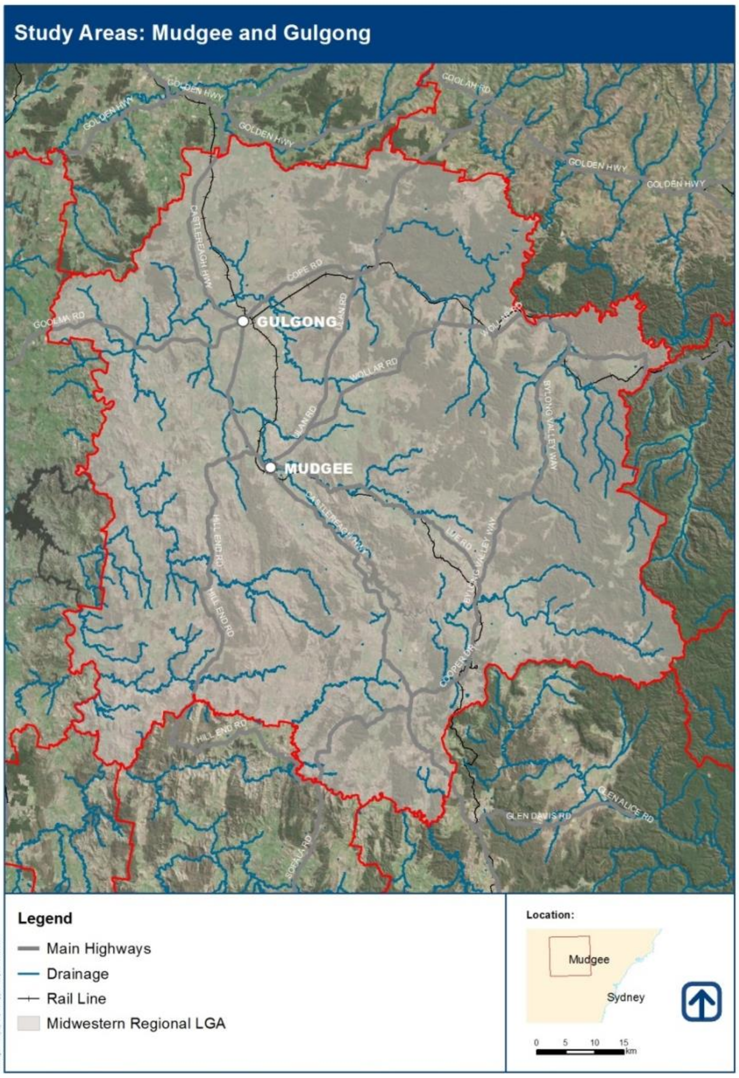
Strategy timeframe and Review

The Strategy timeframe is 20 years starting in 2015. It should be noted that the population projections use a timeframe of 2011 to 2031. However, the difference in the timeframes is not considered to materially impact the findings of this study.

Strategy Area

The following figure shows Mudgee and Gulgong's location within the Mid-Western Regional Council LGA.

Figure 1 - Study Area



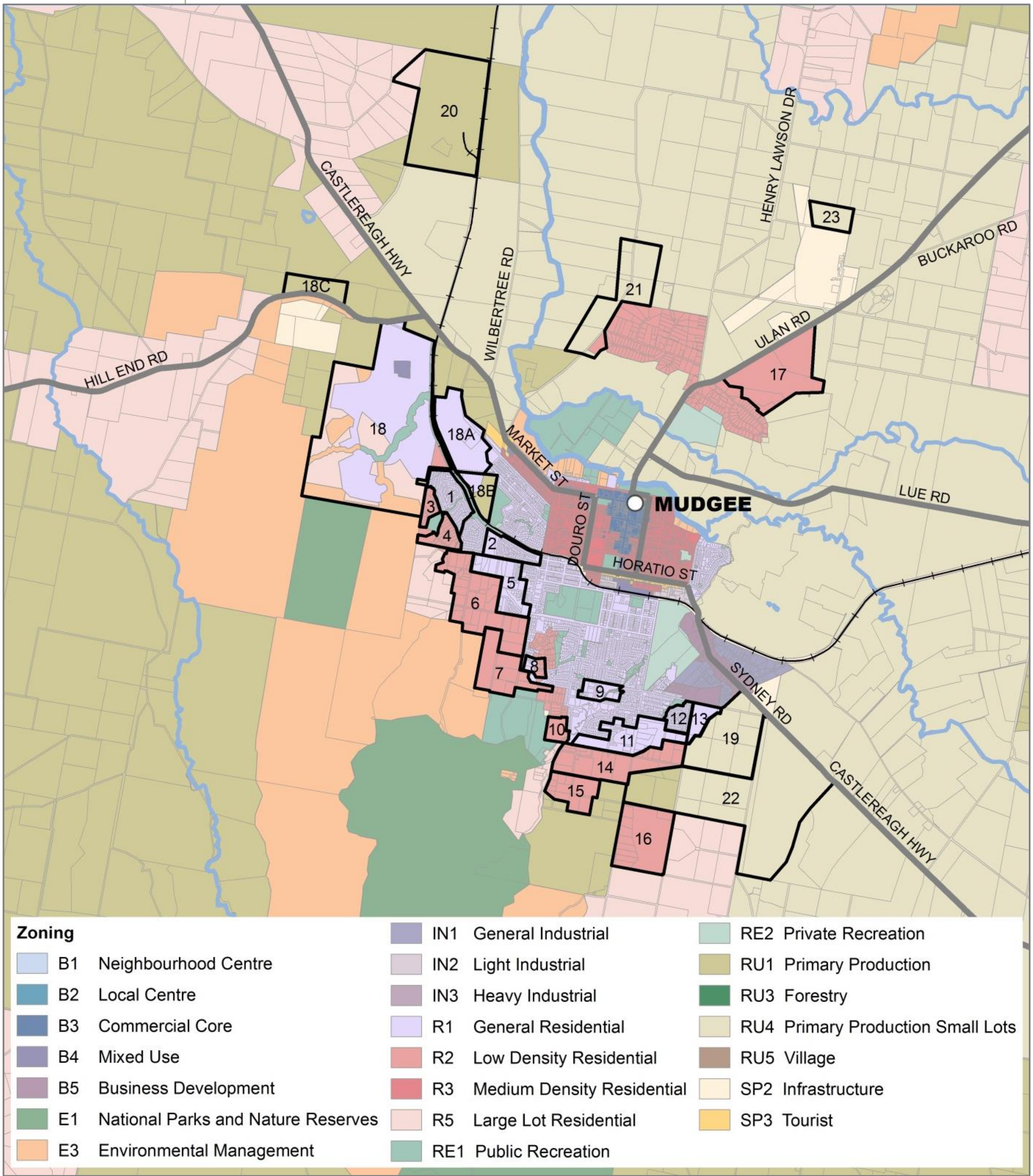
Source: HillPDA and RPS

Mudgee is located approximately 261 kilometres north-west of Sydney and is the administrative heart of the Mid-Western Regional Council Local Government Area (LGA). With a population of 9,830 Mudgee has attracted a high proportion of young people and families on account of good amenities, medical facilities, schools, child care, retail and commercial services.

Gulgong is located 29km north of Mudgee. Gulgong is a historically significant town and retains much of its 19th century fabric which contributes to its appeal as a tourist destination. Social infrastructure in Gulgong is limited on account of its size (2,383 people) and residents must travel to Mudgee to access major medical, retail and commercial services.

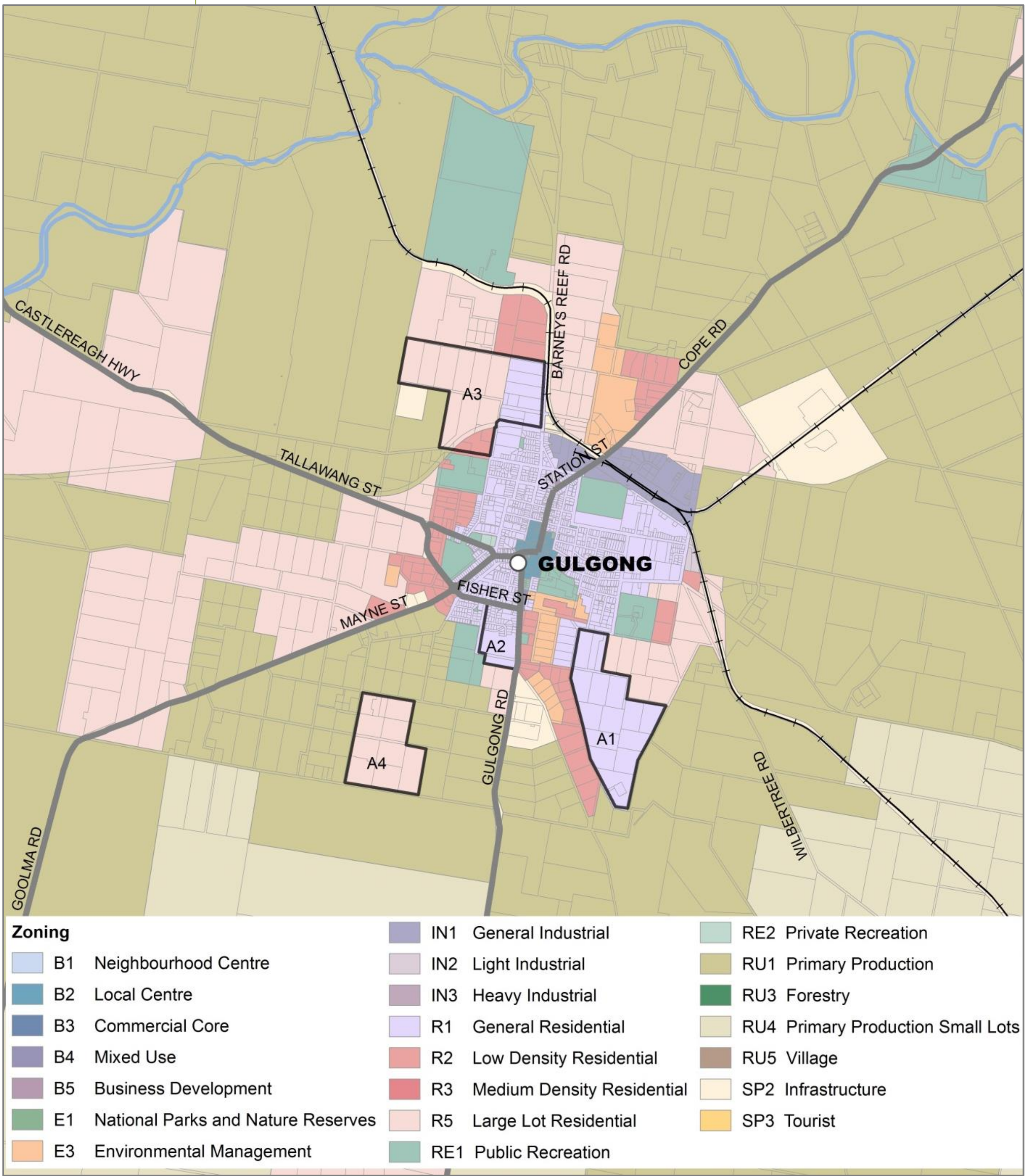
The urban release areas for Mudgee and Gulgong are shown in the following figures.

Figure 2 - Mudgee Urban Release Areas and LEP 2012 Zoning



Source: HillPDA and RPS

Figure 3 - Gulgong Urban Release Areas and LEP 2012 Zoning



Source: HillPDA and RPS

Strategy Methodology

Housing supply and demand are influenced by economic and labour conditions, as they are by demographic change over time. In order to understand the drivers of housing supply and demand in Mudgee and Gulgong, HillPDA worked closely with Council to identify and understand the key drivers and challenges facing existing and proposed residential supply. Research was carried out to understand:

- Population growth and household characteristics over the past decade;
- Household incomes and affordability; and
- Housing needs and types.

In addition to economic and demographic profiles, the following tasks were carried out to understand the current state of play of development activity, as development seeks to respond to market demand and need:

- An analysis of median house prices and rents was carried out to understand movement in Mudgee and Gulgong's markets over time;
- An overview of ongoing residential projects in Mudgee and Gulgong to understand market dynamics; and
- Interviews with Council, members of the development industry and real estate agents to gather perspectives on constraints and opportunities affecting housing supply and demand in Mudgee and Gulgong.

The amount of residential zoned land in some instances bears little relationship to actual lot production. It is therefore necessary to understand activity and conditions in the development market as they directly impact on the production of housing lots. Market research was consequently undertaken to understand current lot production, take up trends and expected future activity.

An analysis of the supply of both residential land and dwellings in Mudgee and Gulgong was carried out by examining historical supply as well as land capacity and availability to accommodate future lot production. The barriers to future supply (both of zoned land and serviced blocks) were analysed to distinguish structural challenges from market cyclical factors, which cumulatively impact on housing supply.

The following tasks were carried out from a review of Council documents and information, market analysis and informal interviews with developers and real estate agents active in Mudgee and

Gulgong:

- Analysis of historical supply and dwelling production trends;
- Analysis of structural and cyclical factors that impact on housing supply and demand; and
- Identification and analysis of specific challenges for development in Mudgee and Gulgong.

Consistent with the scope of the brief, a high level demographic analysis was undertaken to inform the strategy. It is acknowledged, however, that the assumptions underlying the population projections, particularly the historic population trends for the period 1991-2011, has not applied the Estimated Resident Population (ERP) data. Therefore, population variation over time could be attributable to different levels of undercount rather than real underlying change. In addition, the impacts of an ageing population and age structure variables were not considered. A detailed analysis of out-migration along-side population growth from mining activity has not been explored.

Land Supply Monitor

Demand for and supply of dwellings is constantly changing. As such the figures in this Strategy must be constantly updated. To ensure Council remains nimble and ready to respond to the changing housing needs of its community HillPDA have built a custom *Land and Housing Supply Monitor* for Council to complement this Strategy. This easy to use Excel based model will allow Council officers to input quarterly data on population updates, rezonings, lot and dwelling approvals and track the need for additional land and dwellings. The model will track existing and pipeline stock, flag trigger points for land release, identify the amount of land needed and differentiate between housing types needed.

2 DEMOGRAPHIC TRENDS

Demographics and market dynamics are two major factors that influence supply and demand of housing. The next two chapters examine these factors starting with the demographic characteristics (past, present and projected) of Mudgee and Gulgong.

Population

In 2011 the population of Mudgee and Gulgong was 9,830 and 2,383 respectively. Together these towns accommodate just over half the LGA's total population of 23,000.

Table 11 - Population Size (1991-2011)

	Population (# people)					% of MWRC LGA Population Total				
	1991	1996	2001	2006	2011	1991	1996	2001	2006	2011
Mudgee	7,930	8,290	8,930	8,726	9,830	38%	39%	41%	40%	43%
Gulgong	2,030	2,060	2,080	2,918	2,383	10%	10%	9%	13%	10%
Balance of MWRC LGA	10,770	10,900	10,993	9,997	10,807	52%	51%	50%	46%	47%
MWRC LGA	20,730	21,250	22,003	21,641	23,020	100%	100%	100%	100%	100%

Source: Australian Bureau of Statistics Census

In the 20 years between 1991 and 2011 Mudgee's population grew by 1,900 persons or 24%. Gulgong's increased by 353 persons or 17% over the same period. However, for Mudgee, most of this growth occurred between 2006 and 2011 when the town's population increased by 1,104 persons on account of new mining activity. In contrast Gulgong's population decreased by 535 persons over 2006 and 2011, suggesting Mudgee is the preferred location for new residents.

Table 12 - Population Growth (1991-2011)

	Pop Growth 1991-2011		Pop Growth 2001 -2011		Pop Growth 2006 - 2011	
	#	%	#	%	#	%
Mudgee	1,900	24%	900	10%	1,104	13%
Gulgong	353	17%	303	15%	-535	-18%
Balance of MWRC LGA	37	0.3%	-186	-1.7%	810	8%
MWRC LGA	2,290	11%	1,017	5%	1,379	6%

Source: Australian Bureau of Statistics Census

Since 1991 Mudgee has attracted 83% of the LGA's new residents while Gulgong's share was 15%. Between 2001 and 2011 each town's share of the LGA's population growth has been more volatile. For the purposes of calculating population projections it is estimated

Mudgee and Gulgong will attract 83% and 10% of the LGA's population growth over the next 20 years respectively.

Table 13 - Share of Population Growth (1991-2011)

	Share of Growth (%)			Estimated Share of LGA Growth 2011-2031
	1991-2011	2001-2011	2006-2011	
Mudgee	83%	88%	80%	83%
Gulgong	15%	30%	-39%	10%
Balance of MWRC LGA	2%	-18%	59%	7%
MWRC LGA	100%	100%	100%	100%

Source: HillPDA and Australian Bureau of Statistics Census

Mudgee's average annual population growth rate between 1991 and 2011 was 1.1% which is significantly higher than the rate for Gulgong (0.8%) and the LGA (0.5%). The spike in mining activity and associated population boom over 2006 and 2011 saw Mudgee's annual growth rate increase to 2.4% while the LGA's rose to 1.2%.

Table 14 - Population Growth Rate (1991-2011)

	Compound Annual Growth Rate (%)		
	1991-2011	2001-2011	2006-2011
Mudgee	1.1%	1.0%	2.4%
Gulgong	0.8%	1.4%	-4.0%
Balance of MWRC LGA	0.0%	-0.2%	1.6%
MWRC LGA	0.5%	0.5%	1.2%

Source: HillPDA and Australian Bureau of Statistics Census

The following table shows the Department of Planning and Environment's latest (2014) population projections for the Mid-Western Regional Council LGA. HillPDA have then distributed these projections between Mudgee, Gulgong and the remainder (balance) of the LGA.

DP&E expect the LGA's population to increase by 2,050 persons between 2011 and 2031 which equates to a 9% increase over 20 years and an average annual growth rate of 0.4%. Based on the DP&E's projections, Mudgee will grow by 1,702 people at an average rate of 0.8% per annum. Gulgong is anticipated to grow by 205 people with an annual growth rate of 0.4%. The DP&E's implied annual growth rates for Mudgee and Gulgong over 2011-2031 are well below the rates actually recorded between 1991 and 2011 (refer to the table above).

Table 15 - DP&E Population Projections (2011-2031)

	2011	2016	2021	2026	2031	Change 2011-2031 (#)	Change 2011-2031 (%)	Compound Annual Growth Rate (%)
Mudgee	10,483	11,023	11,521	11,894	12,185	1,702	16%	0.8%
Gulgong	2,383	2,448	2,508	2,553	2,588	205	9%	0.4%
Balance of MWRC LGA	10,134	10,180	10,222	10,253	10,278	144	1%	0.1%
MWRC LGA	23,000	23,650	24,250	24,700	25,050	2,050	9%	0.4%

Source: HillPDA and NSW DP&E Population Projections (2014)

DP&E have acknowledged their projections for the LGA do not account for the anticipated level of new mining activity expected in the LGA. With the assistance of Council, HillPDA have sought to estimate the population impacts of new mining activity over the next 20 years on Mudgee and Gulgong. This work is predicated on the new mining projects, employment levels and timings shown in the following table. It is acknowledged the actual commencement date of these projects may eventually differ from the estimate below. Timely and accurate land and dwelling monitoring and regular updates of this Strategy by Council will ensure land release is adapted to changes in demand on account of project delays and the like.

Table 16 - Forecast Employment in New Mines in MWRC LGA

Mine	Estimated Commencement Date	Construction Workers	Operations Workers
Expansion to Existing Mines			
Moolarben	2015+	282	122
Wilpinjong	2016+	110	0
Proposed Mines			
Cobbora	2021+	300	400
Mt Penny	2021+	300	250
Bylong	2017+	1,000	350
Inglenook (centenial)	2021+	300	250
Bowdens Silver Mine	2016+	300	200
Total		2,592	1572

Source: Mid-Western Regional Council

It is estimated expansion to Moolarben and Wilpinjong coal mines and commencement of new mining projects (Cobbora, Mt Penny, Bylong, Inglenook and Bowdens) will generate 2,592 additional constructions jobs and 1,572 further jobs once operational. Other assumptions underpinning HillPDA's population projection analysis from mining activity are:

- 45% to 70% of new workers will choose to live in Mudgee, depending on the mine project. 0%-30% of new workers will choose to live in Gulgong, depending on the mine project. These assumptions have been informed by discussions with Council and an existing workforce survey undertaken for Ulan in 2008;
- 70% of new workers will move to the LGA from other areas (i.e. not already living in the LGA)[1];
- 30% of the new workers employed during mine construction will be accompanied by families. Once operational it is anticipated 60% of new workers will live in family households[2]. The average household size of 2.4 persons is assumed for both Mudgee and Gulgong; and
- The analysis does not include further population growth driven by additional jobs/economic activity generated indirectly by new mining activity. Further detailed demographic and economic analysis would be required to understand these impacts and factor them into population projections for Mudgee and Gulgong.

The following table shows the outcomes of this analysis. The impact of new mining activity on Mudgee and Gulgong will fluctuate with the lifecycle of the new mines. Significant population growth is expected over the next 10 years as the construction phase of Moolarben, Wilpinjong, Bylong and Bowdens occurs. The number of workers associated on these projects is expected to decline as they enter operation.

[1] This will vary from mine to mine

[2] A family is defined by the ABS as two or more persons, one of whom is at least 15 years of age, who are related by blood, marriage (registered or de facto), adoption, step or fostering. Each separately identified couple relationship, lone parent-child relationship or other blood relationship forms the basis of a family. A family household is a household where the occupants meet this definition of a family. Some households contain more than one family, with a maximum of three families being able to be coded to a household. Please see definitions for further detail.

Table 17 - Additional Population Generated by New Mining Activity (2011-2031)

	2016	2021	2026	2031
Mudgee	376	1,212	1,570	1,283
Gulgong	98	124	187	142

Source: HillPDA

It is expected that new mining activity will increase Mudgee and Gulgong's population by 1,212 and 124 persons respectively by 2021. With new mining activity receding between 2021 and 2031 population growth in Mudgee and Gulgong is expected to ease. This is due to the assumption that all new mines would have entered operational phase and construction employment has ceased.

The following table shows the outcome from adding the additional population impacts from new mining activity to the DP&E's latest population projections. It shows Mudgee's population is expected to increase by nearly 3,000 people between 2011 and 2031 to around 13,500 people in total. Gulgong's population is expected to increase by around 350 people over 2011-2031 to 2,730 people in total.

Table 18 - HillPDA Population Projections (2011-2031)

	2011	2016	2021	2026	2031	Change 2011-2031 (#)	Change 2011-2031 (%)	Compound Annual Growth Rate (%)
Mudgee	10,483	11,398	12,732	13,464	13,468	2,985	28%	1.3%
Gulgong	2,383	2,546	2,632	2,740	2,730	347	15%	0.7%

Source: HillPDA , ABS and NSW Department of Planning and Environment

The following table shows HillPDA's projected population for Mudgee is significantly higher than the DP&E projections (+1,300 people).

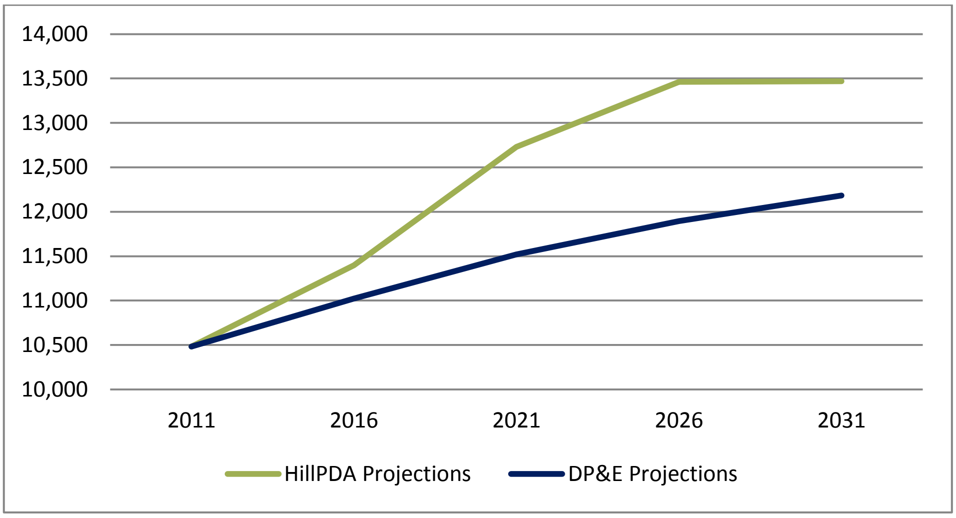
Table 19 - Mudgee - Population Projection Comparison (2011-2031)

	2011	2016	2021	2026	2031
HillPDA Projections	10,483	11,398	12,732	13,464	13,468
DP&E Projections	10,483	11,023	11,521	11,894	12,185

Source: HillPDA , ABS and NSW Department of Planning and Environment

The difference between the HillPDA population projections for Mudgee and the DP&E's is also shown in the following figure.

Figure 4 - Mudgee - Population Projection Comparison (2011-2031)



Source: HillPDA , ABS and NSW Department of Planning and Environment

HillPDA's projected populations for Gulgong is also higher than the DP&E projections (+140 people) as shown in the following table.

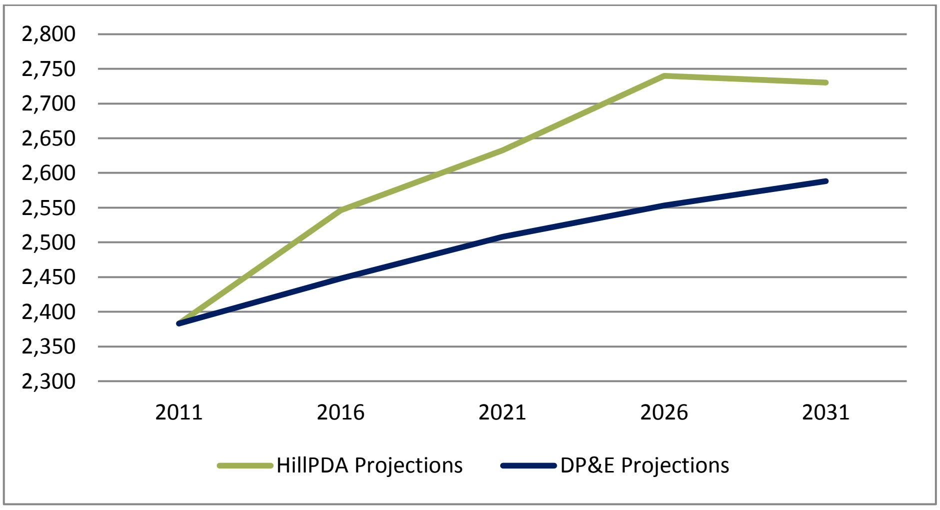
Table 20 - Gulgong - Population Projection Comparison

	2011	2016	2021	2026	2031
HillPDA Projections	2,383	2,546	2,632	2,740	2,730
DP&E Projections	2,383	2,448	2,508	2,553	2,588

Source: HillPDA , ABS and NSW Department of Planning and Environment

The difference between the HillPDA population projections and the DP&E's is shown in the following figure.

Figure 5 - Gulgong - Population Projection Comparison (2011-2031)



Source: HillPDA , ABS and NSW Department of Planning and Environment

A comparison between past and projected population growth rates is a useful way to 'ground truth' our findings. The LGA experienced high levels of mining activity between 2006 and 2011. Similar levels, although not as great, are expected to occur between 2011 and 2021.

Between 2006 and 2011 Mudgee experienced very strong population growth with an average annual growth rate of 2.4%. Our projections estimate Mudgee will record an average annual growth rate of 2.0% between 2011 and 2021. Over the longer term (2011-2031) as mining construction activity drops off we expect the average annual population growth rate for Mudgee (1.3%) to return to the 20 year average (1.1%).

Table 21 - Annual Population Growth Rate Comparison (2011-2031)

	Actual Population Size (ABS)			Population Projections (DP&E)		Population Projections (HillPDA)	
	1991-2011	2001-2011	2006-2011	2011-2021	2011-2031	2011-2021	2011-2031
Mudgee	1.1%	1.0%	2.4%	0.9%	0.8%	2.0%	1.3%
Gulgong	0.8%	1.4%	-4.0%	0.5%	0.4%	1.0%	0.7%

Source: HillPDA

For Gulgong we expect the annual average population growth rate over the next 20 years (0.7%) to be similar to the towns average over the last 20 years (0.8%).

Age Distribution

Median Age

In 2011 the average age in Mudgee was 37, this is lower than the average age in Gulgong (39), MWRC LGA (41) and Regional NSW (41). This suggests that Mudgee contains a higher proportion of younger families and workers.

The average age in Gulgong (39) is closer to that of MWRC LGA (41) and the Regional NSW (41) and reflects an older more established population.

Between 2001 and 2006 the average age in Gulgong increased to 40 and then decreased to 39. This slight decrease may indicate that Gulgong's more affordable housing is starting to attract younger people.

Table 22 - Median Age (2001-2011)

	2001	2006	2011	Change 2001 -2011		Change 2006 -2011	
				#	%	#	%
Mudgee	37	37	37	0.0	0%	0.0	0%
Gulgong	35	40	39	4.0	11%	-1.0	-3%
MWRC LGA	38	41	41	3.0	8%	0.0	0%
RNSW	37	39	41	4.0	11%	2.0	5%

Source: Australian Bureau of Statistics Census

Age Distribution

In 2011 both Mudgee (22%) and Gulgong (22%) had a high proportion of people within the 0-14 age bracket in comparison to MWRC LGA (20%) and Regional NSW (19%). Mudgee has a high proportion of people within the 20-44 age bracket when compared to Gulgong Regional NSW.

Mudgee appears to have a high proportion of family aged people in comparison to Regional NSW and a lower proportion of older people aged over 55 years. In comparison Gulgong has slightly less family aged people and more people aged over 55 years.

Table 23 - Age Distribution (2011)

	Mudgee	Gulgong	MWRC LGA	RNSW
0-4 years	8%	7%	7%	6%
5-14 years	14%	15%	13%	13%
15-19 years	7%	6%	6%	7%
20-24 years	6%	6%	5%	6%
25-34 years	12%	11%	10%	11%
35-44 years	14%	11%	14%	13%
45-54 years	13%	12%	14%	14%
55-64 years	10%	13%	13%	13%
65-74 years	8%	9%	10%	10%
75+ years	6%	6%	6%	6%
85 years and over	3%	3%	2%	2%

Source: Australian Bureau of Statistics Census

Household Characteristics

Household Size

The size of households in Mudgee (2.4) and Gulgong (2.4) are consistent with that of MWRC LGA and Regional NSW. Between 2001 and 2011 both Mudgee and Gulgong experienced a decrease in household size.

Table 24 - Household Size (2001-2011)

	2001	2006	2011	Change 2001-2011		Change 2006-2011	
				#	%	#	%
Mudgee	2.5	2.4	2.4	-0.1	-4%	0.0	0%
Gulgong	2.6	2.4	2.4	-0.2	-8%	0.0	0%
MWRC LGA	2.6	2.4	2.4	-0.2	-8%	0.0	0%
RNSW	2.5	2.5	2.4	-0.1	-4%	-0.1	-4%

Source: Australian Bureau of Statistics Census

Household Type

The following table shows that Mudgee contained a high proportion of family households (68%) in 2011. This suggests that families are attracted to Mudgee's good amenities and facilities. Gulgong also contains a significant proportion of family households (65%) but also a relatively higher proportion of lone person households when compared to Mudgee and the LGA. This may be due to a high proportion of elderly people and some miners living on their own. The table also shows that the number of family households has increased by 16% in Mudgee since 2001 and decreased by 11% in Gulgong.

Table 25 - Household Types (2001-2011)

	Mudgee		Gulgong		MWRC LGA	
	2011	Change since 2001	2011	Change since 2001	2011	Change since 2001
Family	68%	16%	65%	-11%	68%	4%
Lone Person	29%	12%	32%	18%	24%	13%
Group Households	3%	16%	2%	100%	2%	19%
Other Households	0%	0%	0%	0%	5%	36%
Total	100%	15%	100%	-2%	100%	8%

Source: Australian Bureau of Statistics Census

Household Ownership

The following table shows that more people in Mudgee rent in comparison to Gulgong (35% versus 31%), this may be due to a significant number of miners living in Mudgee. Mine workers are less likely to buy property when they are on short term contracts during construction phase or when starting their employment with an operating mine. Gulgong reflects a more established community with higher rates of home ownership and lower levels of those renting when compared to Mudgee. However, rental levels in Gulgong are still above the Regional NSW average.

Table 26 - Household Ownership (2001-2011)

	Mudgee		Gulgong		MWRC LGA		RNSW	
	2011	Change since 2001	2011	Change since 2001	2011	Change since 2001	2011	Change since 2001
Owned outright	31.2%	-3.5%	39.6%	-14.1%	38.5%	-6.8%	44.4%	-6.0%
Owned with mortgage	29.6%	171.5%	27.0%	9.6%	27.7%	35.9%	22.7%	41.7%
Rented	35.2%	14.0%	31.1%	14.8%	25.8%	92.9%	27.1%	91.3%
Other or not stated	4.0%	-30.4%	2.4%	-74.6%	8.0%	39.9%	5.7%	39.7%
Total	100.0%	25.3%	100.0%	-6.6%	100.0%	8.2%	100.0%	10.2%

Source: Australian Bureau of Statistics Census

Household Income

In 2011 the average weekly household income in Mudgee ($1,023) was significantly higher than Gulgong ($818), MWRC LGA ($938) and Regional NSW ($960).

Table 27 - Weekly Household Income (2001-2011)

	2001	2006	2011	Change 2001-2011		Change 2006-2011	
				#	%	#	%
Mudgee	$699	$729	$1,023	$324	46%	$294	40%
Gulgong	$599	$661	$818	$219	37%	$157	24%
MWRC LGA	$603	$721	$938	$335	56%	$217	30%
RNSW	$638	$796	$960	$322	50%	$164	21%

Source: Australian Bureau of Statistics Census

Between 2006 and 2011 the average household income in Mudgee and Gulgong increased by 40% and 24% respectively. This suggests Mudgee is attracting substantially more of the economic benefits associated with the mining industry than Gulgong despite being located further away from the main coal mines.

Dwelling Characteristics

Dwelling Type

Between 2001 and 2011 the number of dwellings in Mudgee increased by 12% while the number of dwellings in Gulgong remained steady.

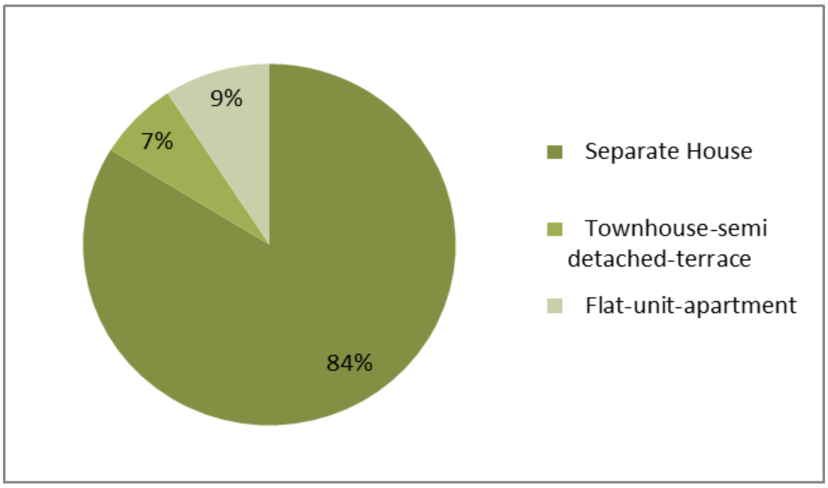
Table 28 - Dwelling Type by Number of Dwellings (2001-2011)

	Mudgee				Gulgong			
	2001	2011	Change 2001-2011		2001	2011	Change 2001-2011	
			#	%			#	%
Occupied Private Dwellings	**3,303**	**3639**	**336**	**10%**	**765**	**725**	**-40**	**-5%**
Separate House	2,576	3,012	436	17%	676	671	-5	-1%
Townhouse-semi detached-terrace etc.	216	298	82	38%	17	3	-14	-82%
Flat-unit-apartment	283	242	-41	-14%	44	44	0	0%
Caravan, cabin, houseboat	158	70	-88	-56%	21	4	-17	-81%
House or flat attached to a shop, office etc.	29	13	-16	-55%	3	3	0	0%
Dwelling structure not stated	41	4	-37	-90%	4	0	-4	-100%
Unoccupied private dwellings	**304**	**418**	**114**	**38%**	**81**	**120**	**39**	**48%**
Total Private Dwellings	**3,607**	**4,057**	**450**	**12%**	**846**	**845**	**-1**	**0%**

Source: Australian Bureau of Statistics Census

The most common type of dwelling in Mudgee is separate houses (74%) followed by townhouse/semidetached dwellings (7%) and flat/unit/apartment dwellings (6%).

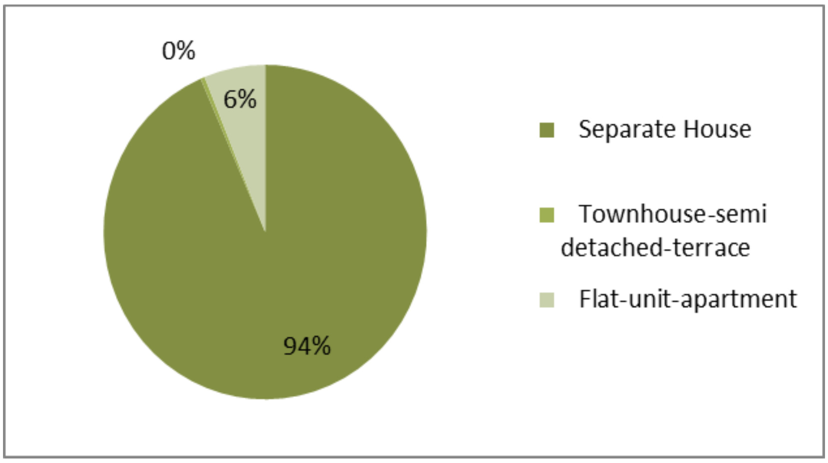
Figure 6 - Mudgee - Dwelling Type as a Percentage of All Dwellings (2011)



Source: Australian Bureau of Statistics Census

The most common type of dwelling in Gulgong is separate houses with very few other forms of dwellings.

Figure 7 - Gulgong - Dwelling Type as a Percentage of All Dwellings (2011)



Source: Australian Bureau of Statistics Census

Between 2001 and 2011 the number of units in Mudgee decreased by 41 units or 14% and the number of units in Gulgong remained steady.

Dwelling Structure by Bedrooms

The following table shows separate houses in Mudgee predominately contain 3 or 4 bedrooms while townhouses generally contain 2 or 3 bedrooms. Most units in Mudgee contain 1 or 2 bedrooms. As shown above, townhouses and units constitute only 16% of Mudgee's dwelling stock which suggests little housing diversity and a potential shortage of smaller format accommodation in Mudgee.

Table 29 - Dwelling Structure by Number of Bedrooms in Mudgee (2011)

	Number of Bedrooms in Dwelling								
	0 (i.e. bedsits)	1	2	3	4	5	6	Not stated	Total
Separate House	0%	1%	10%	49%	33%	4%	1%	2%	100%
Townhouse -semi detached -terrace etc.	2%	4%	46%	41%	2%	0%	0%	4%	100%
Flat-unit - apartment	0%	24%	51%	16%	0%	0%	0%	8%	100%
Other dwelling	12%	31%	25%	12%	0%	0%	0%	19%	100%

Source: Australian Bureau of Statistics Census

The next table shows that separate houses in Gulgong predominately contain between 3-4 bedrooms, townhouses contain 2 bedrooms and flats predominately contain 2 bedrooms.

Table 30 - Dwelling Structure by Number of Bedrooms in Gulgong (2011)

	Number of Bedrooms in Dwelling								
	0 (i.e. bedsits)	1	2	3	4	5	6	Not stated	Total
Separate House	0%	2%	15%	53%	24%	4%	1%	2%	100%
Townhouse-semi detached-terrace etc.	0%	0%	100%	0%	0%	0%	0%	0%	100%
Flat-unit-apartment	14%	7%	59%	9%	0%	0%	0%	11%	100%
Other dwelling	0%	0%	33%	33%	0%	0%	0%	33%	100%

Source: Australian Bureau of Statistics Census

Summary of Key Findings

Over the last decade new mining activity has driven very strong population growth in Mudgee. The town's role as a regional centre and the broad range of amenities and social infrastructure has resulted in Mudgee attracting most of the LGA's new residents. As a result household incomes have risen substantially as has the number of families living in Mudgee. At the same time the proportion people renting in Mudgee has increased which illustrates the transient and sometime temporary nature of mining driven population growth. Gulgong's population has been less impacted by the mining boom and its demographic indicators reflect an older more established community. The dwelling stock in both Mudgee and Gulgong is dominated by separate houses (this includes with contemporary dual occupancies) which indicates a lack of housing diversity.

3 RESIDENTIAL MARKET SNAPSHOT

This chapter describes the activity and demand in existing housing and rental markets and provides an indication of the type and nature of housing required in Mudgee and Gulgong. The chapter concludes by comparing housing affordability between Mudgee and Gulgong.

Existing Housing Market

The residential market in Mudgee is underpinned by strong population growth, particularly between 2006 and 2012. There has also been constrained supply in the market prior to 2011/12 with insufficient new housing delivered to the market to meet demand. Market activity appears to be quite diverse with both investors and owner occupiers actively purchasing dwellings.

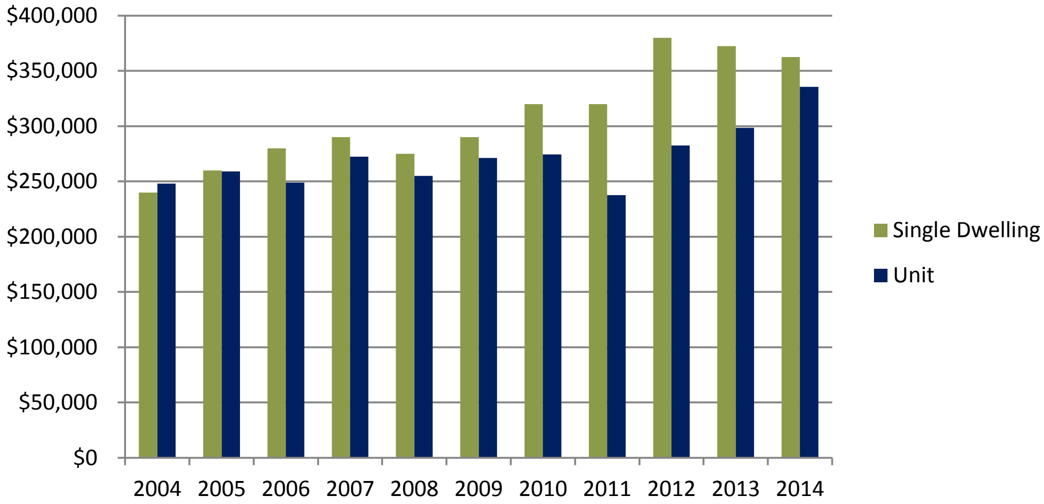
The last 12-18 months has witnessed market activity decline a little as the impact of global resource prices has fuelled uncertainty around some mining projects. There is now growing confidence that a number of new mining projects will proceed.

Local agents indicated that investors from outside Mudgee are showing greater interest due to low vacancy rates and the potential for mining-driven demand in the housing market. One agent estimated that investors represent up to 30% of the current market.

Median Dwelling Prices

The figure depicts median house and unit prices over the last decade. In March 2014 Mudgee's median house and unit price was $362,500 and $335,500 respectively.

Figure 8 - Mudgee Median House and Unit Sale Price (2004-2014)



Source: Residex (2014)

The following figure shows Gulgong's median house price was $267,000 in March 2014. Market research undertaken for this Strategy found that Mudgee's median house prices has, on average, been 27% higher than Gulgong's over the last decade.

Figure 9 - Gulgong Median House and Unit Sale Price (2004-2014)

Source: Residex (2014)

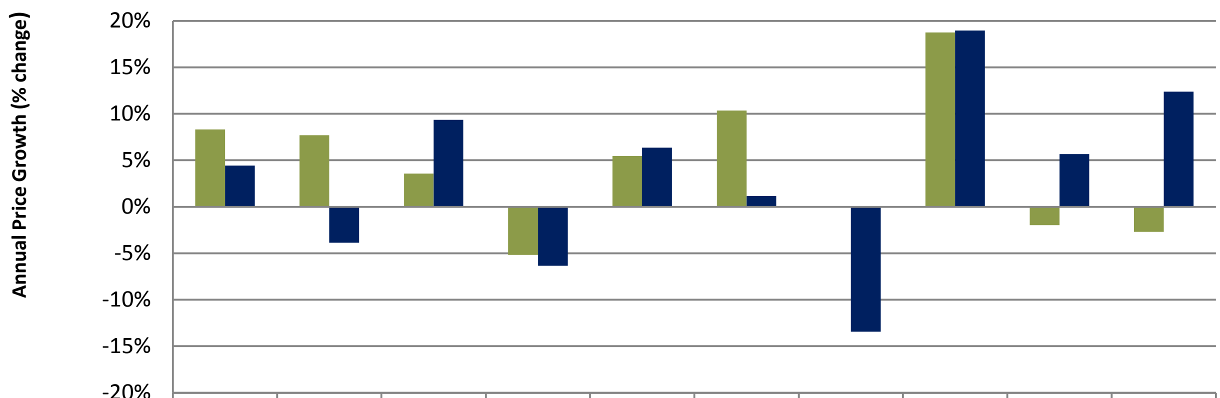
This analysis highlights that housing in Mudgee is relatively expensive when compared to Gulgong and the LGA. The median price of a house in Mudgee is $30,000 more than the LGA's median and $95,000 higher than Gulgong's median. Gulgong is therefore a more attractive option for home buyers seeking affordable housing.

Dwelling Price Growth

Growth in Mudgee's median house and unit prices has varied considerably since 2004. Overall the median house and unit prices have risen by 51% and 35% respectively over the last 10 years. Prices fell around the time of the Global Financial Crisis (GFC) and again in 2013 as uncertainty around mining projects grew and more supply entered the market.

Since 2012 growth in unit prices has match or outstripped growth in house prices, suggesting either strong demand for units or the presence of a supply shortage, or a combination of both.

Figure 10 - Mudgee House and Unit Price Growth (2005-2014)



	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Single Dwelling	8%	8%	4%	-5%	5%	10%	0%	19%	-2%	-3%
Unit	4%	-4%	9%	-6%	6%	1%	-13%	19%	6%	12%

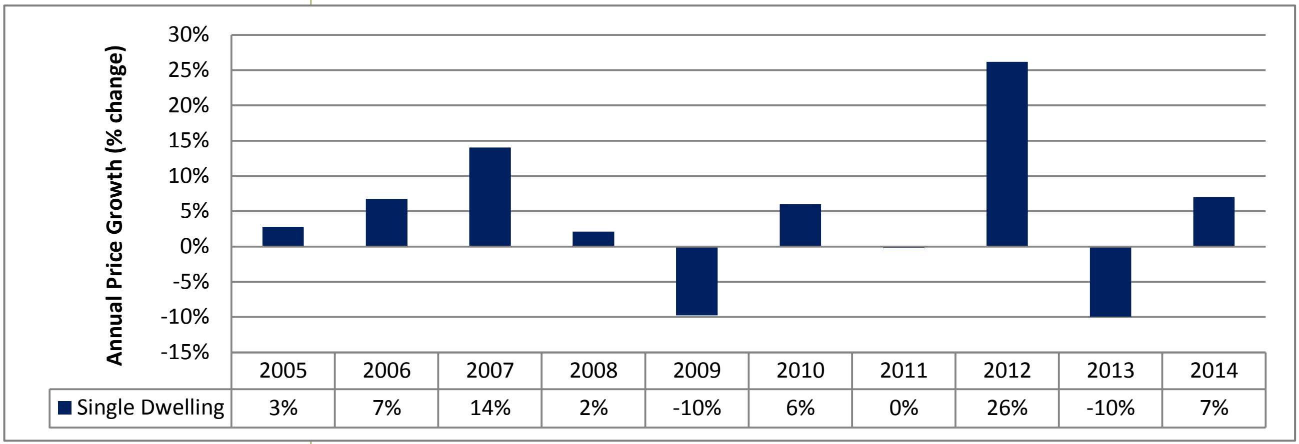
Source: Residex (2014)

Discussions with agents have identified that volume is driven by existing dwellings (i.e. not new) in the $300,000 to $350,000 price range. This part of the market is highly competitive with first home buyers and investors equally keen.

In the market for new house and land packages, first home buyers tend to fall away after $350,000, few with the ability to pay $400,000-$450,000 in some of the estates offering larger lots and greater amenity. There is also demand for a range of product, commensurate with different buyer group needs. For example, large lots over 1,000sqm located to the north and west of Mudgee's CBD attract the upsizing family.

The median house price in Gulgong has risen by 48% since 2004 but has also been highly volatile during that time. Prices rose strongly in 2012 but have otherwise been flat or negative since then.

Figure 11 - Gulgong House and Unit Price Growth (2005-2014)



Source: Residex (2014)

Sales Volume

The number of houses and units sold in Mudgee since 2004 has remained relatively consistent, although there was a dip around the time of the GFC (2008).

Table 31 - Number of House and Unit Sales (2004-2013)

	Separate Houses		Residential Strata Units	
	Mudgee	Gulgong	Mudgee	Gulgong
2004	226	49	33	1
2005	204	53	30	1
2006	210	44	43	1
2007	189	41	22	0
2008	151	39	17	0
2009	262	40	38	0
2010	212	33	30	1
2011	287	40	48	0
2012	298	55	37	0
2013	237	40	21	0
Average Annual Sales	228	43	32	0

Source: RP Data (2014)

On average 228 houses and 32 units are sold in Mudgee each year (new and existing dwellings). House sales in Gulgong average 43 per year.

Existing Rental Market

The rental market is diverse with demand for a range of different households, from lone persons to larger families.

During 2010-2012 period demand for rental properties far outstripped supply in Mudgee with very few properties available during that time. The number of rentals available has increased over the last 12 months. However, informal enquiries with leasing agents in Mudgee have revealed strong demand across all housing types in the market remains, with most properties leased within a few weeks of being advertised.

Table 32 - Mudgee and Gulgong Rents and Rental Yields

	Dwelling Type	Median Rent, Last		Rental Yield, Last	
		Qtr.	Year	Year	20 Years
Mudgee	House	$380	$390	5.59%	6.12%
	Unit	$330	$345	5.79%	5.10%
Gulgong	House	$310	$305	5.83%	7.05%

Source: Residex (2014)

The table above indicated that the median rent for houses in Mudgee has dropped to $380/week although this remains substantially higher than the median rent in Gulgong ($310/week). The median rent for units in Mudgee is also relatively high at $330 per week. Discussions with agents found some landlords have yet to drop their asking price for rents to reflect changed market conditions.

Development Activity

New estate development over the last decade has predominantly occurred in areas west and south of Mudgee's CBD. A small amount of larger lots (~4,000sqm) have been built on in older estates to the north of Mudgee.

Table 33 - Estate Land Prices in Mudgee

Estate	Lot Sizes (sqm)	Average Lot Size (sqm)	Sale Prices	$/sqm of site area	$/sqm (Average)
Parkview	601-1,369	884	$145,000-$163,000	$119-$241	$177
Caerleon - Stage 1	700-1,096	878	$138,000-$168,000	$151-$197	$174
Rutherford Leigh	865-955	908	$150,000-$159,000	$168-184	$169
Valley Grove Estates	800-1091	843	$145,000-$159,000	$146-$194	$179
The Ridge	900-1127	976	$165,000-$179,500	$158-$183	$179
Yallambee Estate	805-1097	895	$165,000-$179,500	$164-$223	$200
Broadview Estate	2,000-2,120	2,012	$198,000	$93-$99	$98
Nurrowin Estate	767-943	852	$155,000-$175,000	$167-$218	$190
Bellevue Estate	770-6,113	1,983	130,000-255,000	$40-$185	$118

Source: HillPDA Market Research (2014)

There are a number of ongoing residential subdivisions across Mudgee. Appendix C shows the location of the estates. The table above shows most estates offer lot sizes around the standard 800-900sqm but some provide smaller lots around 600sqm (Parkview) and larger lots around 1,100-1,300sqm (Valley Grove). Broadview and Bellevue offer a small numbers of lots over 2,000sqm. Standard lot prices range from $139,000 to $179,000 with larger lots priced at $200,000 and above.

Apparent is the lack of smaller lot sizes (less than 600sqm). Discussions with agents said there is limited demand from home buyers for lots this size. Investors are said to show the greatest interest in new smaller lot dwellings which usually come in the form of dual occupancies. Dual occupancies are said to be often purchased by investors and rented out to mine employees.

Many of the estates in the above table openly advertise covenants put in place to prohibit the practice of splitting lots and constructing dual occupancies. This is done in response to concerns about home owners buying into estates thinking future housing would be limited to larger detached houses, only to have numerous dual occupancies appear.

While dual occupancies are seen as less desirable by some they have their benefits. Producing dual occupancies is lucrative and efficient for developers and builders. Furthermore the large number of dual occupancies built in recent years has helped ease Mudgee's housing shortage, added to Council's rate base and provided a product slightly cheaper than the standard 800sqm model.

HillPDA's view on dual occupancies is that the decision to construct them in new estates should be left to the developer. Purchases can decide whether or not to buy into estates that permit them. Council should however investigate mechanisms applied by other LGAs to improve built form and locational controls for dual occupancies.

Housing Affordability

Mudgee is acknowledged to have a short term supply issue in recent years, a product of the slowdown in development activity in the few years preceding 2011 amid housing demand which was unabated. The impact of Mudgee's low housing supply and strong market demand has driven the cost of housing upwards, as can be seen in the strong growth witnessed in median prices and median rents.

ABS Census data mortgage costs as a percentage of household income for Mudgee residents rose from 23% in 2001 to 38% in 2011. This indicates little unexhausted capacity of households to tolerate further / substantial house price increases.

In order to understand the extent of the housing affordability issue in Mudgee, HillPDA prepared an Excel based model 'Household Income Affordability Calculator'. The model profiles household income bands based on ABS Census data for Mudgee and the level of rent / debt that each household income level could afford to pay depending on key variables (i.e. interest rate, deposit and household income).

Table 34 - HillPDA Household Income Affordability Calculator

Household Income	Household Income (Weekly)	Rental (% income)	Weekly Rental	Ownership (% income)	Monthly	Principal Loan	Deposit	Home Affordability
$20,000	$385	25%	$96	30%	$500	$75,154	$7,515	$82,669
$25,000	$481	25%	$120	35%	$729	$109,599	$10,960	$120,559
$30,000	$577	26%	$150	35%	$875	$131,519	$13,152	$144,671
$35,000	$673	27%	$182	37%	$1,079	$162,207	$16,221	$178,428
$40,000	$769	28%	$215	38%	$1,267	$190,390	$19,039	$209,429
$42,536	$818	30%	$245	30%	$1,063	$159,837	$15,984	$175,821
$42,536	$818	30%	$245	40%	$1,418	$213,116	$21,312	$234,428
$45,000	$865	30%	$260	40%	$1,500	$225,461	$22,546	$248,007
$50,000	$962	30%	$288	40%	$1,667	$250,513	$25,051	$275,564
$53,196	$1,023	30%	$307	30%	$1,330	$199,894	$19,989	$219,883
$53,196	$1,023	30%	$307	40%	$1,773	$266,525	$26,653	$293,178
$55,000	$1,058	30%	$317	40%	$1,833	$275,564	$27,556	$303,120
$60,000	$1,154	30%	$346	40%	$2,000	$300,615	$30,062	$330,677
$65,000	$1,250	30%	$375	40%	$2,167	$325,666	$32,567	$358,233
$70,000	$1,346	30%	$404	40%	$2,333	$350,718	$35,072	$385,789
$75,000	$1,442	30%	$433	40%	$2,500	$375,769	$37,577	$413,346
$80,000	$1,538	30%	$462	40%	$2,667	$400,820	$40,082	$440,902
$85,000	$1,635	30%	$490	40%	$2,833	$425,871	$42,587	$468,459
$90,000	$1,731	30%	$519	40%	$3,000	$450,923	$45,092	$496,015
$95,000	$1,827	30%	$548	40%	$3,167	$475,974	$47,597	$523,571
$100,000	$1,923	30%	$577	40%	$3,333	$501,025	$50,103	$551,128

Source: HillPDA and ABS *Assumptions: 10% deposit, 7% interest rate, 30 year term

Housing Affordability

Based on the outputs from the Household Income Affordability Calculator shown above, a household with the median income in Mudgee ($1,023/week in 2011) could only afford to purchase a home for $220,000 assuming a debt service ratio of 30% of income. Assuming a higher debt service ratio of 40%, a household with the median income can afford to purchase a home in Mudgee for $294,000. By the same token, households earning the median income could afford to pay $307 per week in rent, which is $23 less than the median house rent ($330 per week in Mudgee).

The following table provides a sample of Mudgee dwellings for sale in June 2014 and their prices. It shows the only dwellings for with an asking price less than $300,000 is a unit and villa. The remainder of housing is well in excess of $300,000. This suggests those living in Mudgee on average and below average incomes have little opportunity to purchase a home.

Table 35 - Snapshot of Dwelling Prices in Mudgee (2014)

Type of Residential Accommodation	Address	Location	Site Area (sqm)	Brand new (spec) or existing dwelling	Asking/ Sale Price
Unit	Church St	CBD		existing	$245,000
Villa	Cox St	east		existing	$289,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Oporto Road	south	453	existing	$298,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Trefusis Ave	south	748	existing	$315,000
Unit	George St	CBD		existing	$315,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Short St	CBD	720	existing	$320,000
Villa / townhouse	Oporto Road	south		existing	$320,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Mortiner St	CBD	474	existing	$342,000
Villa / townhouse	Lewis St	CBD		existing	$360,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Bellevue Road	south	505	new	$369,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Mulgoa Way	east	624	existing	$375,000
Unit	Chappell Place			new	$379,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Market St	CBD	699	existing	$380,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Baskerville Drive	south	817	existing	$420,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Smith St	CBD	1,840	existing	$420,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Hardy Crescent	south	876	new	$479,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Robertson Street	east	779	existing	$480,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Winter Street	south	1,000	existing	$497,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Birch Grove	south	882	existing	$529,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Macquarie Dr	south	1,300	existing	$549,000
Larger lot residential - 4,000sqm	Lawson St	east	2428	existing	$589,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Dewhurst Dr	south	1,051	existing	$598,000
Larger lot residential - 2,000sqm	Leconfield Drive	north	4533	existing	$649,500

Source: Realestate.com (June 2014)

The Household Income Affordability Calculator also shows that a household with the median income in Gulgong ($818/week in 2011) could only afford to purchase a home for $176,000 assuming a debt service ratio of 30% of income. With a 40% debt service ratio, a household with the median income can afford to purchase a home in Gulgong for $235,000.

The following snapshot of houses for sale in Gulgong shows a household earning the median income or less have limited opportunities when it comes to buying a house.

Table 36 - Snapshot of Dwelling Prices in Gulgong (2014)

Type of Residential Accommodation	Address	Location	Site Area (sqm)	Brand new (spec) or existing dwelling	Asking/Sale Price
Detached dwelling (4 bed, 2 bath, 1+ car space)	Wenonah St	CBD	1,782	existing	$559,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Bunderra St	south	757	existing	$422,000
Detached dwelling (4 bed, 2 bath, 1+ car space)	Anderson St	east	1,818	existing	$545,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Herbert Street	CBD	684	existing	$229,950
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Belmore Street	east	967	existing	$249,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Rouse Street	west		existing	$315,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Benderra St	south	828	existing	$335,500
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Nandoura St	north	689	existing	$230,000
Detached dwelling (3 bed, 1+ bath, 1+ car space)	Belmore St	east	923	existing	$262,500

Source: Realestate.com (June 2014)

Rental Affordability

In relation to rent, households earning the median income could afford to pay $245 per week in rent, which is $65 less than the median house rent ($310 per week in Mudgee).

The lack of smaller format housing and mismatch between earning and rental prices suggests the private rental market in Mudgee is not catering well to the needs of:

- smaller households; and/or
- those people not earning larger incomes looking for affordable rental accommodation.

Summary of Key Findings

The lack of diversity in housing types arguably affects the ability of the diverse population to find accommodation that suitably meets their needs. The predominance in Mudgee and Gulgong of the detached, 700-900sqm block points to a homogenous housing solution for a diverse market comprised of lone and couple households, retirees, downsizers, renters, young and older families.

There is certainly a case for improving housing diversity in Mudgee to suit wide ranging need and circumstances. The following market trends are indicative that a greater diversity of housing is needed:

- Increasing popularity of the smaller lot dual occupancies in Mudgee (400-450sqm) due to lifestyle choice and low maintenance implications, and to a limited extent better affordability. This is not dissimilar to trends observed in metropolitan markets;
- Builder developers specialising in targeting the investor market are active, indicative of keen investor demand due to strong rental conditions;
- Forecast growth in demand for accommodation suitable for seniors in Mudgee, particularly those in assisted care and nursing homes;
- While there is an underlying demand for housing owing to population growth and strong employment rates, there is a finite ability of the market to pay for housing. Higher sale prices beyond purchaser affordability causes purchasers to rent and thereby putting pressure on an already tight rental market. This is particularly relevant for those people not working in the mining sector and earning higher incomes;
- An examination into purchasers' housing requirements suggests that while larger building dimensions and generous block sizes may be viewed favourably ('nice to have') by some purchasers (i.e. those who can afford it), a large proportion of the market will ultimately purchase according to their needs and what they can afford;
- Small lot houses (<600sqm), townhouses and villas are often perceived as a compromise on reduced space yet affording benefits of lifestyle and convenience and are particularly popular with couple households and the retiree and downsizer market. Discussions with agents suggested a new higher density development (e.g. villa/towns houses) can generate substantial demand when in close proximity to Mudgee's shops and services, thus showing smaller format housing can work in the right place; and
- Growing demand and limited supply of larger lot residential blocks of 2 hectares.

4 LAND AND DWELLING SUPPLY

Factors Affecting Supply

A common misconception is that if land is zoned, vacant and undeveloped that is available for immediate development. In practice, this may not be the case. In fact there is often a 'disconnect' between the amount of zoned land and actual delivery of housing lots.

Land that is rezoned for residential development may not necessarily be delivered to the market. This could be due to a variety of reasons, including planning constraints (e.g. statutory requirements, difficulties with infrastructure provision, fragmentation of ownership, etc.), capacity constraints (e.g. bushfire, flooding, slope and landslip, etc.) and commercial pressures. Each has the potential to severely impede the supply response to demand pressures.

The adequacy of land release is therefore crucial for the supply of housing. From first principles the supply of housing directly impacts the price of housing. A constrained supply of land will drive up landowner expectations making site assembly a high risk and high resource activity for developers. This ultimately increases the cost of development.

There are five phases in the process of ensuring the supply of land is adequate to meet demand[3]:

- **Phase 1 -** Identify raw land with strategic value for future residential use, geotechnical suitability and servicing capability (10-30 years ahead of demand).
- **Phase 2** - Rezone land to residential (approximately 5 years ahead of demand).
- **Phase 3** - Developers seek Development Application approval for new estates (1 to 4 years ahead).
- **Phase 4** - Land is developed (usually staged over some years, depending on size of development).
- **Phase 5** - The developed land is released to the market as housing lots[4].

[3] Adapted from Dubbo City Council Review of Urban Areas Development Strategy 1995-2015 Discussion Paper First five yearly Review
[4] Following the construction of housing on the estate/land there is usually a small percentage of lots that remain unbuilt upon which represents a friction stock kept in the market place, expanding the theoretical supply.

This chapter discusses the historic supply of residential land in Mudgee and Gulgong and culminates with an estimate of the existing residential land available to meet future housing demand.

Identification of Land with Strategic Value

In 2007 Council commenced preparation of a Comprehensive Land Use Strategy (CLUS) to provide a strategic framework for planning and land use decisions within the LGA to 2030. The CLUS identified an area of raw land to the north west of Mudgee known as Caerleon as strategic land suitable to meet the growing need for housing in the area. The CLUS was adopted by Council in 2010 and the NSW Department of Planning and Environment in 2011 and helped inform the preparation of the Mid-Western Local Environmental Plan 2012 (MWLEP 2012).

The CLUS prepared Town Structure Plans for Mudgee, Gulgong, Rylstone and Kandos which was a visual representation of the outcomes of the strategy. The CLUS recommended the preparation of an Urban Release Strategy (URS) for residential land to assist in infrastructure planning.

Rezoning of Land

The CLUS provided the basis to inform the preparation of the Mid-Western Local Environmental Plan 2012 (MWLEP). The principle purpose of MWLEP was to consolidate the Mid-Western Regional Intermin LEP 2008, Rystone LEP 1996 and Merriwa LEP 1992 into the Standard LEP format.

The Mid-Western Local Environmental Plan 2012 included a small number of residential zonings in Mudgee. The following table shows a small amount of land was rezoned in MWLEP 2012 to General Residential (R1) while a larger amount was rezoned to Low Density Residential (R2).

Table 37 - Land Rezoned Residential in MWLEP 2012

Location	Previous Zone	MWLEP 2012 Zone	Approximate Lot Yield
Fairydale Lane	Agriculture	General Residential (600sqm)	40
Ulan Road, Bonnyview, Bomboria, Edgell Lane, Broadhead Road	Intensive Agriculture	Low Density Residential (4000sqm)	150
Broadhead Road	Large Lot Residential	Low Density Residential (2000sqm-2ha)	50
Total			**240**

Source: Draft Amendments to Mudgee Town Structure Plan (2013)

The decision to limit the amount of residential rezonings was based on the CLUS which stated there was sufficient land already zoned General Residential, but yet to be released or developed, to meet short term demand. Further investigations were also needed at that time before further land could be rezoned.

Following the implementation of MWLEP 2012 a further 370ha of land with an approximate yield of 1,400 lots was rezoned in Mudgee. This represents around a 30% increase in the amount of residential zoned land in Mudgee. The following table shows the land rezoned to residential since the MWLEP 2012 came into force.

Table 38 - Land Rezoned for Residential Since LEP 2012

Location	Previous Zone	LEP 2012 Zone	Approximate Lot Yield
Caerleon (320ha)	Agriculture	General Residential (450-600sqm) Low Density Residential	900-1100
Saleyards Lane (45ha)	Agriculture	General Residential (450-600sqm)	300
Bellevue Road (6ha)	Large Lot Residential	Low Density Residential (4000sqm-2ha)	36
Total			**~1,400**

Source: Draft Amendments to Mudgee Town Structure Plan (2013)

Land to accommodate up to 300 additional lots has also been rezoned in Gulgong since the inception of MWLEP 2012.

The following table summarises three planning proposals in the Study Area currently being considered by Council.

Table 39 - Current Planning Proposals in Study Area

Location	Current Zone	Propose Zone	Approximate Lot Yield
Burrundulla (139ha)	RU4 Primary Production Small Lots	R5 large lot residential (2ha)	52-56
Abattoir Site (120ha)	RU1 Primary Production	R5 large lot residential (2ha)	53
Land Adjoining Airport (55 George Campbell Drive)	RU4 Primary Production Small Lots	RU4 Primary Production (2ha)	8
Total			**117**

Source: Mid-Western Regional Council (2014)

In total the proposals would increase the supply of residential lots in Mudgee by 117. The need for these planning proposals in terms of meeting future demand is considered in Chapter 9 of this Strategy.

Development Approvals

Mudgee

The following table shows that on average over the last five years Council has released 68 residential lots a year in Mudgee[5]. Strong demand in 2011/12 and 2012/13 saw the average number of lots increase to 105 per annum over that period. The number of lots released in 2013/14 has returned to trend levels in response to reduced demand over the last 12-18 months.

The table also shows that 123 single dwellings and dual occupancies were approved on average per annum over the last five years. This comprised an annual average of:

- 53 complying development certificates (CDCs) for single dwellings and dual occupancies.
- 33 approved development applications for single dwellings.
- 37 approved development applications for dual occupancies.

Table 40 - Mudgee - Lots and Dwelling Approvals (2009/10 - 2013/14)

	2009/10	2010/11	2011/12	2012/13	2013/14 (up to April 14)	Approx. Total Dwellings	Average
Subdivision applications lots approved	d.n.p.	d.n.p.	d.n.p.	d.n.p.	d.n.p.	-	-
Residential lots released in subdivision certificates	26	46	106	103	42	323	68
CDCs for single dwellings/dual occupancies	51	42	82	55	20	250	53
DAs for single dwellings	7	22	26	67	34	156	33
DAs for dual occupancies	12	10	25	29	13	178	37
DAs for town houses and units/RFBs	1	1	2	8	2	60	13

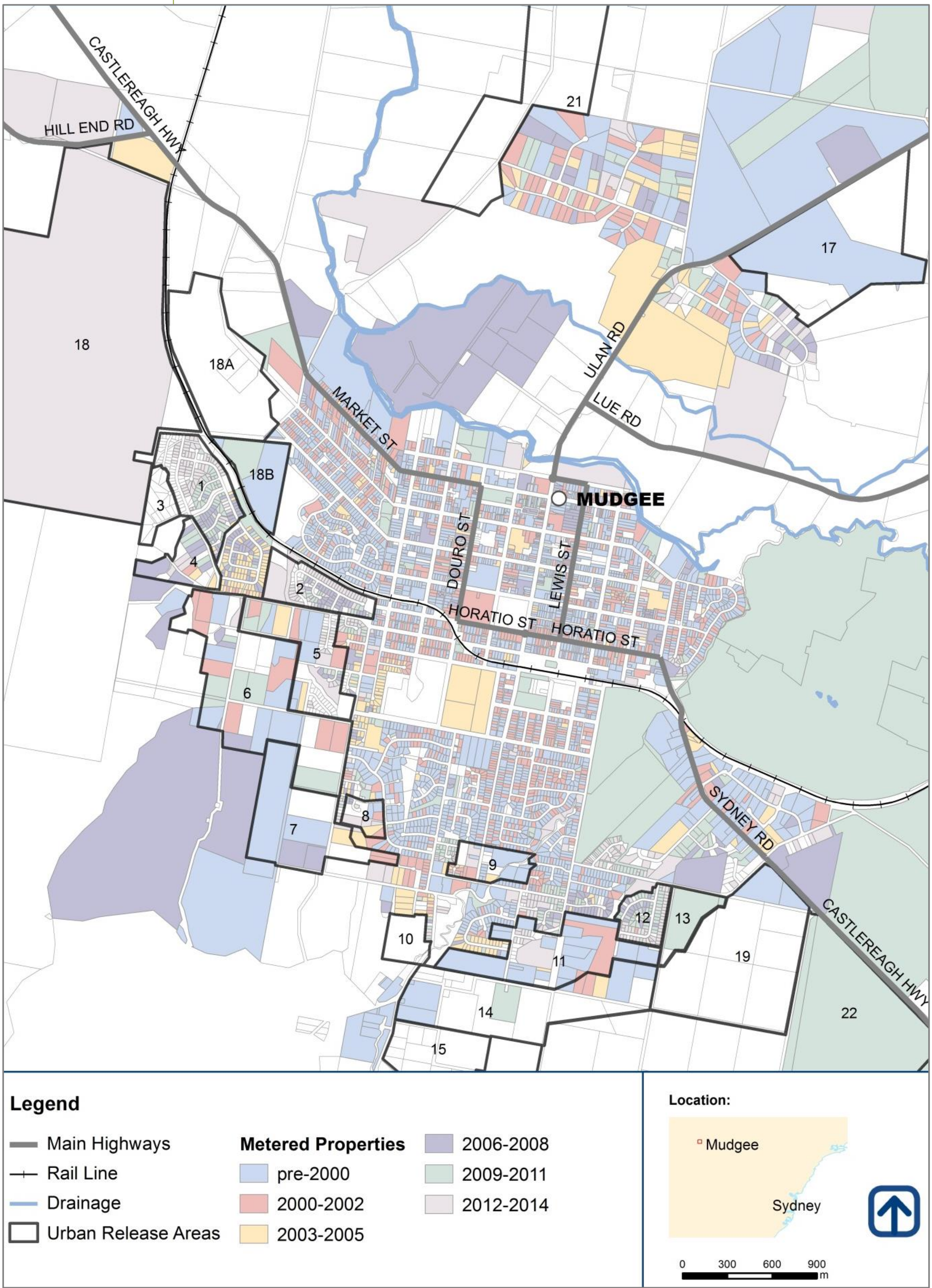
Source: MWRC and HillPDA *HillPDA d.n.p. = data not provided by Council

A further 13 development applications were approved between 2009/10 and 2013/14 for multi-unit housing (i.e. villas, townhouses and residential flat buildings).

The following figure shows where and when development has occurred in Mudgee since 1984 using Council's water metre connection data as a proxy (map shows both residential and non-residential connections).

[5] Council will 'release' lots when the conditions imposed by it on the subdivision have been met. The landowner can then register the lots with the State government and then make them available for sale.

Figure 12 - Residential Development in Mudgee (1984-2014)



Source: MWRC, HillPDA and RPS

Gulgong

The following table shows that Council released 34 residential lots in 2013/14 but none in the four years prior. The table also shows that 13 single dwellings and dual occupancies were approved on average per annum over the last five years, comprising:

- 7 complying development certificates (CDCs) for single dwellings and dual occupancies on average per year.
- 2 approved development applications for single dwellings on average per year.
- 3 approved development applications for dual occupancies on average per year.

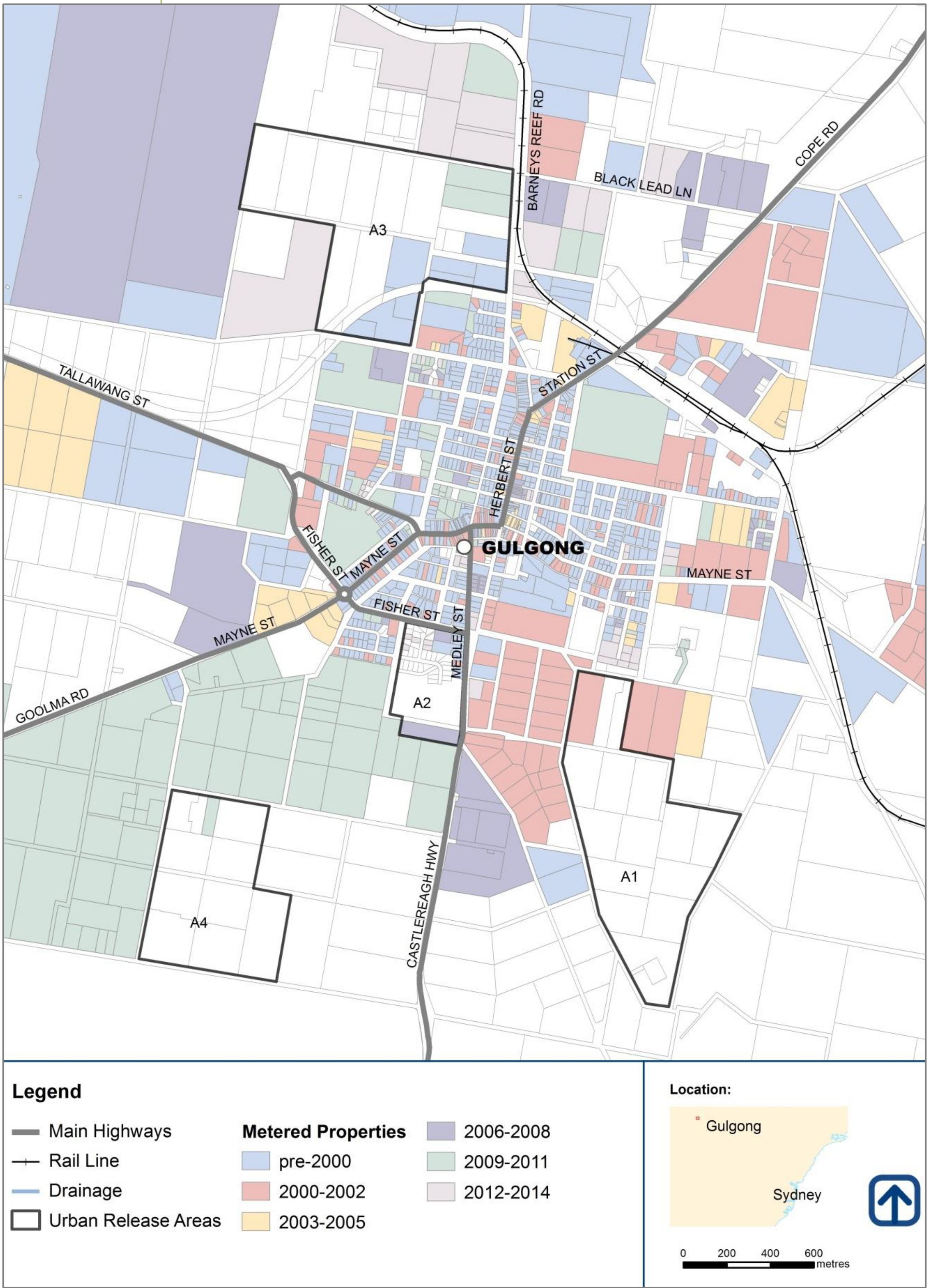
Table 41 - Gulgong - Lots and Dwelling Approvals (2009/10 - 2013/14)

	2009/10	2010/11	2011/12	2012/13	2013/14 (up to April 2014)	Approximate Total Dwellings	Average
Subdivision applications lots approved	d.n.p.	d.n.p.	d.n.p.	d.n.p.	d.n.p.	-	-
Residential lots released in subdivision certificates	0	0	0	0	34	34	7
CDCs for single dwellings/dual occupancies	8	13	3	4	7	35	7
DAs for single dwellings	3	4	0	3	1	11	2
DAs for dual occupancies	2	0	0	3	2	14	3

Source: MWRC and HillPDA d.n.p. = data not provided by Council

The following figure shows where and when development has occurred in Gulgong since 1984 using Council's water metre connection data as a proxy (map shows both residential and non-residential connections).

Figure 13 - Residential Development in Gulgong (1984-2014)



Source: MWRC, HillPDA and RPS

Snapshot of Available Residential Lots

The following table provides a snapshot of residential lots currently for sale in Mudgee's urban release areas[6].

Table 42 - Snapshot of Residential Lots Available in Mudgee (June 2014)

Estate	Location in Mudgee	Lot Sizes (sqm)	Average Lot Size (sqm)	Number of Lots For Sale in Estate Release
Parkview	West Mudgee	601-1,369	884	23
Caerleon - Stage 1	North West	700-1,096	878	25
Rutherford Leigh	West Mudgee	865-955	908	9
Valley Grove Estates	West Mudgee	800-1091	843	13
Southern Heights Estate	South Mudgee	403-942	679	28
The Ridge	South Mudgee	900-1127	976	10
Yallambee Estate	South-West Mudgee	805-1097	895	18
Broadview Estate	South Mudgee	2,000-2,120	2012	10
Nurrowin Estate	South Mudgee	767-943	852	5
Melton Road	South Mudgee	860-1,600	911	6
Bellevue Estate	West Mudgee	770-6,113	900 & 3,000	43
Total			**~870 & ~2,000**	**190**

Source: HillPDA Market Research (2014)

The list is not definitive but provides a sample of the location, number and size of residential lots available in Mudgee. In total these 11 estates have 190 lots for sale with the vast majority averaging 870sqm in size.

Summary of Current Capacity

The following table summarises the estimated lot/dwelling capacity of Mudgee and Gulgong's urban release areas by current zone and minimum lot size control. The estimated lot density is also shown. Analysis undertaken for the Strategy found that the average number of dwellings per hectare can vary even within areas that have the same zone and minimum lot size. For example, smaller estates (<40 lots) offering standard size lots (700-900sqm) will generally have a density of around 9 dwellings/hectare (this includes roads) while larger estates with similar sized lots can average 6 dwellings per hectare. One explanation for this may be that residential zones in

[6] Lots available as at 10 June 2014

larger estates include more area for non-residential purposes (e.g. recreation, small areas of open space, services and the like).

Table 43 - Current Dwelling Capacity of Urban Release Areas by Zone under MWLEP 2012

Current LEP Zone	Current LEP Minimum Lot Size	Dwellings / Hectare	Area in Each Zone (Ha)	Approximate Potential Number of Lots Available
Mudgee Urban Release Areas				
R1 General Residential	450sqm & 600sqm	6 to 9	369	1,981
R2 Low Density Residential	2,000sqm or 4,000sqm if serviced otherwise 2ha&10ha	0.1 to 4	359	718
R5 Large Lot Residential	4,000sqm	2	75	149
RU1 Primary Production	100ha	0.01	197	2
RU4 Primary Production Small Lots	20ha	0.05	351	18
Total			1,351	2,869
Gulgong Urban Release Areas				
R1 General Residential	600sqm	6 to 7	95	563
R2 Low Density Residential	10ha	0.1	5	0
R5 Large Lot Residential	2ha & 10ha	0.1 to 0.5	149	27
Total			249	591

Source: HillPDA

There is 1,351ha of land zoned for residential purposes in Mudgee's urban release areas which has a potential yield of around 2,869 lots. Gulgong's urban release areas contain 249ha of land zoned for residential purposes which has the potential to yield around 591 lots. Most of these potential lots are within the General Residential (R1) zone.

The following table shows the estimated potential lot yield for Mudgee's urban release areas as permitted under the current LEP zoning and minimum lot size controls.

Table 44 - Current Dwelling Capacity Estimates of Mudgee's Urban Release Areas Under MWLEP 2012

Urban Release Area	Location	Current LEP Zone and Denty of Residential Development	Area Zoned for Residential (Ha)	Current LEP Minimum Lot Size	Current No. of Additional Lots Potentially Available
1	Bellevue Road	R1 General Residential	24.2	600sqm	40
2	Bellevue Road	R1 General Residential	17.4	600sqm	10
3	Bellevue Road	R2 Low Density Residential	7.6	10ha or 2000sqm if serviced	45
4	Bellevue Road	R2 Low Density Residential	13.2	10ha or 2000sqm if serviced	15
5	Rifle Range Road 1	R1 General Residential	31.8	600sqm	179
6	Rifle Range Road 2	R2 Low Density Residential	72.4	10ha or 2000sqm if serviced	214
7	Rifle Range Road 3	R2 Low Density Residential	39.9	2ha or 4000sqm if serviced	80
8	South Mudgee Infill 1	R1 General Residential	2.8	600sqm	10
9	South Mudgee Infill 2	R1 General Residential	10.6	600sqm	32
10	South Mudgee Infill 3	R2 Low Density Residential	8.7	2ha	4
11	South Mudgee Infill 4	R1 General Residential	39.8	600sqm	287
12	South Mudgee Infill 5	R1 General Residential	10.9	600sqm	4
13	South Mudgee Infill 6	R1 General Residential	10.7	600sqm	83
14	South Mudgee Low Density 1	R2 Low Density Residential	57.5	10ha or 2000sqm if serviced	230
15	South Mudgee Low Density 2	R2 Low Density Residential	25.8	2ha or 4000sqm if serviced	0
16	Broadhead Road	R2 Low Density Residential	57.1	Part 2ha or 4000sqm if serviced Part 10ha or 2000sqm if serviced	92
17	Ulan Road	R2 Low Density Residential	73.4	2ha	37
18	Caerleon - General Density	R1 General Residential	166.1	450sqm	997
18	Caerleon - Large Lot	R5 Large Lot Residential	74.6	4000sqm	149
18A	Saleyards	R1 General Residential	49.0	600sqm	294
18B	Fairydale Lane	R1 General Residential RU1 Primary Production	5.4 10.9	600sqm 100ha	45 1
18C		RU1 Primary Production	19.4	100ha	0
19	Spring Flat	RU4 Primary Production Small Lots	73.8	20ha	4
20	Former Abattior Site	RU1 Primary Production	134.4	100ha	1
21	Putta Bucca	R2 Low Density Residential RU4 Primary Production Small Lots	3.7 64.4	2ha 20ha	2 3
22	Burrundulla	RU1 Primary Production	32.1	100ha	0
		RU4 Primary Production Small Lots	197.0	20ha	10
23	55 George Campbell Drive	RU4 Primary Production Small Lots	16.7	20ha	1
			1,351.2		2,869

The next table shows the estimated potential lot yield for Gulgong's urban release areas as permitted under the current LEP zoning and minimum lot size controls.

Table 45 - Current Dwelling Capacity Estimates of Gulgong's Urban Release Areas Under LEP 2012

Urban Release Area	Location	Current LEP Zone and Density of Residential Development		Area in Each Zone (Ha)	Current LEP Minimum Lot Size	Current No. of Additional Lots Potentially Available
A1	South East Gulgong	R1	General Residential	61.1	600sqm	367
A2	South Central Gulgong	R1	General Residential	15.3	600sqm	67
A3	North West Gulgong	R2	Low Density Residential	4.9	10ha	0
		R5	Large Lot Residential	105.8	10ha	5
		R1	General Residential	18.6	600sqm	130
A4	South west Gulgong	R5	Large Lot Residential	43.1	2ha	22
				248.8		**591**

Source: HillPDA

Temporary Workers Accommodation

Temporary workers accommodation (TWAs) may have a significant impact upon housing needs in Mudgee and Gulgong. A number of TWAs have been approved in recent years:

- The Mac Group TWA at 2 Black Lead Lane, Gulgong for a 400 room facility with approval to operate for 20 years (approved by the LEC in 2014);
- Main Street, Ulan for a 140 room facility which was granted a 20 year approval by Council in 2011; and
- Moolarben at 100-102 Purridgerie Road, Turill for a 300 room facility to provide accommodation for construction workers associated with stage 2 of the mining development.

If any of these were to become operational it would be necessary for Council to update the Urban Release Strategy accordingly to reflect the impact on housing supply and demand on Mudgee and Gulgong.

5 LAND AND DWELLING DEMAND

Factors Affecting Demand

Demand for housing can be defined as "the quantity of housing that households are willing and able to buy or rent"[7]. The drivers of this (effective) demand for housing have been identified by Housing NSW as:

- The rate at which households are formed;
- Prices of housing in the local market and competing markets;
- The perceived advantages of the local area in terms of its access to a range of goods and services;
- The particular tastes or preferences of the consumers; and
- The economic circumstances of the households and of the local housing market.

The Mid-Western Regional LGA has a diverse and growing economic base. Major industries driving population growth in the LGA are mining, agriculture, viticulture, tourism, construction, manufacturing and retail. The mining sector is by far the largest and most influential industry in the LGA. According to ABS Census 22% of the LGA's resident workforce were employed directly in the mining sector in 2011.

There are currently four major mining projects in the LGA directly employing nearly 2,100 people in 2012/13. The following table shows the average number of persons employed at each mine between 2008/09 and 2012/13.

Table 46 - Average Employment of Major Mines in MWRC LGA (2008-13)

Mine	FY 2008-09	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13
Charbon Open Cut	45	38	38	57	68
Charbon Underground	91	90	90	95	96
Moolarben Open Cut		48	276	302	338
Ulan Open Cut	13			152	132
Ulan Underground	454	413	590	687	487
Ulan West Box Cut Open Cut				215	30
Ulan West Underground				227	341
Wilpinjong Open Cut	241	325	405	485	602
Total	**844**	**914**	**1399**	**2220**	**2094**

Source: NSW Coal Mine Productivity Statistics, Coal Services Pty Limited. Note: *Average Employment is based on production employment ie. Full time equivalent employees working in or about the coal mine or coal preparation plant, pertaining to its operation, whether employed by the mine operator or by a contractor. The average is calculated on the period in operation.

[7] Housing NSW, Sustainable Communities: Home for All, 2005

Mining also generates a significant number of other jobs directly and indirectly through a multiplier effect (e.g. businesses providing other services and goods to mines and/or their employees). As discussed in Chapter 3, the substantial influx in mine workers between 2010 and 2012 generated significant demand for housing and services in the LGA.

Insufficient supply of housing in Mudgee in particular saw housing prices and rents soar during this time. What housing was available to buy or rent was largely unaffordable to those people not employed in the higher paying mining sector. An increase in housing supply and reduced demand over the last 12-18 months has seen prices and rents ease.

The following table shows new mining activity which is anticipated to commence in future years.

Table 47 - Estimated Employment in New Mines in LGA (2015+)

Mine	Estimated Commencement Date	Construction Workers	Operations Workers
Expansion to Existing Mines			
Moolarben	2015+	282	122
Wilpinjong	2016+	110	0
Proposed Mines			
Cobbora	2021+	300	400
Mt Penny	2021+	300	250
Bylong	2017+	1000	350
Inglenook (centennial)	2021+	300	250
Bowdens Silver Mine	2016+	300	200
Total		**2592**	**1572**

Source: Mid-Western Regional Council

These new projects will employee 2,592 additional construction workers and a further 1,572 workers once operational. While the actual commencement date of these projects is difficult to ascertain, it is predicted that Moolarben, Wilpinjong, Bylong and Bowdens projects will commence before 2021. If this occurs the LGA will see employment rise by additional 1,692 construction workers and 672 workers per annum once the mines are operational. As discussed in Chapter 2, new mining projects will have a dramatic impact on Mudgee and Gulgong's population and housing demand over the next 20 years. Such a large influx of new people will have a significant impacts - both positive and negative - on the relatively small populations of Mudgee and Gulgong.

This chapter seeks to understand the implications of this population growth on future demand for land and housing in Mudgee and Gulgong.

Projected Demand for Dwellings

A number of methods can be used to estimate future dwelling demand. Three methods are applied in this Strategy: population projections method, dwellings approval method (includes CDCs) and water metre connections method. Each provides insight into potential future demand for dwellings.

Population Projections Method

Population projections for Mudgee and Gulgong are provided in Chapter 2 of the Strategy. Importantly HillPDA's projections factor in the impact of anticipated new mining projects on population growth for both towns.

Mudgee

Based on HillPDA's analysis, Mudgee's population is projected to increase by approximately 3,000 persons between 2011 and 2031. Assuming an average household size of 2.3 and a dwelling vacancy rate of 8% then there will be a need for approximately 1,400 additional dwellings in Mudgee by 2031.

The following table shows that demand for additional dwellings will be greater in the 2011 to 2021 period on account of new mining activity. In this period population growth will generate demand for approximately 1,060 additional dwellings in total. This equates to an average of 106 additional dwellings per year.

Table 48 - Mudgee - Dwelling Demand from Population Growth Method (2011-2031)

	Total Additional Dwellings Needed			Average New Dwellings Per Annum		
	2011-2031	2011-2021	2021-2031	2011-2031	2011-2021	2021-2031
Dwellings	1,411	1,063	348	71	106	35

Source: MWRC and HillPDA

Demand for dwellings is forecast to decline between 2021 and 2031 due to the construction phase of some mining projects finishing. In this period it is estimated around 350 new dwellings will be required to meet demand.

Gulgong

Gulgong's population is projected to increase by approximately 350 persons between 2011 and 2031. Assuming an average household size of 2.3 and a dwelling vacancy rate of 8% then there will be a need for approximately 165 additional dwellings in Gulgong by 2031.

Table 49 - Gulgong - Dwelling Demand from Population Growth Method (2011 -2031)

	Total Additional Dwellings Needed			Average Per Annum		
	2011-2031	2011-2021	2021-2031	2011-2031	2011-2021	2021-2031
Additional Dwellings	164	117	47	8	12	5

Source: MWRC and HillPDA

Significant mining construction activity between 2011 and 2021 is expected to drive demand for around 120 additional dwellings. This equates to an average of 12 new dwellings per year. Demand for a 47 further dwellings is anticipated over 2021 and 2031.

It should be noted that the population projections use a timeframe of 2011 to 2031 while The Strategy timeframe is 20 years starting in 2015. Given the Strategy's long planning horizon and uncertainty around the timing of new mining projects the difference in the timeframes is not considered material.

Dwelling Approvals Method

The second approach to estimating the demand for dwellings applies the average number of dwellings approved over the last five years (2009/10 to 2013/14) and projects this forward over 20 years to give an estimate of future demand. This approach also counts a Complying Development Certificate (CDC) as an approval.

Mudgee

Council has approved on average 116 dwellings per annum in Mudgee over the last five years. If this level of demand were to be sustained 2,320 additional dwellings would be required in Mudgee over the next 20 years.

It is important to note however that Mudgee's population growth rate in recent years has been more than double the 20 year average. As such the recent levels of dwelling approvals are unlikely to be sustained in the long term. A more realistic figure might be closer to an average of 80-90 dwelling approvals per year over 20 years which would equate to 1,600-1,800 additional dwellings in total.

Gulgong

Council has approved on average 11 dwellings per annum in Gulgong over the last five years. If this level of demand were to be sustained over the next 20 years an additional 220 dwellings would be required.

Water Metre Connections Method

The third approach to projecting the demand for dwellings identifies the average number of water metres connected to new dwellings over the last 14 years and projects this forward over 20 years to give an estimate of future demand.

Mudgee

Since 2000 an average of 124 new dwellings per annum has been connected to Mudgee's water supply. Projected over 20 years this equates to demand for an additional 2,480 dwellings.

Gulgong

An average of 16 new dwellings per annum has been connected to Gulgong's water supply since 2000. This equates to demand for an additional 320 dwellings over 20 years.

Types of Dwellings in Demand

While detached dwellings on 700-900sqm blocks will remain the most popular dwelling type, market research suggests that demand for other dwelling formats is increasing (refer Chapter 3). HillPDA conducted informal interviews with Real Estate Agents in Mudgee, and found there was demand for dual occupancy, townhouse and villa type developments in close proximity to the town centre. Therefore, the following table estimates the proportion of future demand for different housing types in Mudgee and Gulgong.

Table 50 - Types of Lots/Dwellings Likely to be in Demand

Dwelling and lot type	Density	Lot size	Dwelling/Ha	% of future Dwellings
Mudgee				
Detached house/dual occupancy on smaller lot	General Residential	400-600	12	10%
Detached house on standard lot	General Residential	700-900	6-9	60%
Large Lot Residential	Low Density Residential	2000	4	10%
Large Lot Residential	Low Density Residential	4000+	2	5%
Town houses, villa etc	General Residential	N/A	14-20	15%
Gulgong				
Detached house/dual occupancy on smaller lot	General Residential	400-600	12	15%
Detached house on standard lot	General Residential	700-900	6-7	70%
Large Lot Residential	Low Density Residential	2000	4	10%
Large Lot Residential	Low Density Residential	4000	2	5%

Source: HillPDA Note: yield potential indicative only and total area factors in roads and open space requirements

Comparison of Three Demand Approaches

The following tables summarises the future dwelling demand based on the three approaches. The figures provided in the table factor in a 20% contingency to allow for lots that may be approved by Council but not delivered to market.

Mudgee

The following table shows that over the next 10 years Mudgee will require:

- 1,276 residential lots to accommodate demand for new dwellings when applying the population projections method.
- 1,392 residential lots to accommodate demand for new dwellings when applying the dwellings approvals method.
- 1,488 residential lots to accommodate demand for new dwellings when applying the water metre connections method.

Table 51 - Mudgee - Number of Lots/Dwellings Required Over 20 Years by Approach (2015-2035)

	Type of Dwellings Required	No. of Lots		
		(0 to 10 years)	(10 to 20 years)	(0 to 20 years)
Population Projections Method	House/dual occupancy on smaller lot	128	42	170
	House on standard lot (700-900sqm)	765	251	1,016
	Large Lot Residential (2,000-4,000sqm)	128	42	170
	Large Lot Residential (2ha & over)	64	21	85
	Town houses, villa etc	191	63	254
	Total	**1,276**	**419**	**1,695**
Dwelling Approvals Method	House/dual occupancy on smaller lot	139	139	278
	House on standard lot (700-900sqm)	835	835	1,670
	Large Lot Residential (2,000-4,000sqm)	139	139	278
	Large Lot Residential (2ha & over)	70	70	140
	Town houses, villa etc	209	209	418
	Total	**1,392**	**1,392**	**2,784**
Water Metre Connections Method	House/dual occupancy on smaller lot	149	149	298
	House on standard lot (700-900sqm)	893	893	1,786
	Large Lot Residential (2,000-4,000sqm)	149	149	298
	Large Lot Residential (2ha & over)	74	74	148
	Town houses, villa etc	223	223	446
	Total	**1,488**	**1,488**	**2,976**

Source: HillPDA Note 1: assumes townhouse and multi-unit development will occur as infill in CBD. Note 2: all lot estimates include +20% contingency

The table also shows that over the next 20 years Mudgee will require:

- 1,695 residential lots to accommodate demand for new dwellings when applying the population projections method.
- 2,784 residential lots to accommodate demand for new dwellings when applying the dwellings approvals method.
- 2,976 residential lots to accommodate demand for new dwellings when applying the water metre connections method.

Gulgong

The following table shows that over the next 10 years Gulgong will require:

- 197 residential lots to accommodate demand for new dwellings when applying the population projections method.
- 264 residential lots to accommodate demand for new dwellings when applying the dwellings approvals method.
- 384 residential lots to accommodate demand for new dwellings when applying the water metre connections method.

Table 52 - Gulgong - Number of Lots/Dwellings Required Over 20 Years by Approach (2015-2035)

Demand Method	Type of Dwellings Required	No. of Lots		
		(0 to 10 years)	(10 to 20 years)	(0 to 20 years)
Population Projections Method	House/dual occupancy on smaller lot	21	8	29
	House on standard lot (700-900sqm)	98	39	137
	Large Lot Residential (2,000-4,000sqm)	14	6	20
	Large Lot Residential (2ha & over)	7	3	10
	Total	**140**	**56**	**196**
Dwelling Approvals Method	House/dual occupancy on smaller lot	20	20	40
	House on standard lot (700-900sqm)	92	92	184
	Large Lot Residential (2,000-4,000sqm)	13	13	26
	Large Lot Residential (2ha & over)	7	7	14
	Total	**132**	**132**	**264**
Water Metre Connections Method	House/dual occupancy on smaller lot	29	29	58
	House on standard lot (700-900sqm)	134	134	268
	Large Lot Residential (2,000-4,000sqm)	19	19	38
	Large Lot Residential (2ha & over)	10	10	20
	Total	**192**	**192**	**384**

Source: HillPDA Note 1: all lot estimates include +20% contingency

The table also shows that over the next 20 years Gulgong will require:

- 196 residential lots to accommodate demand for new dwellings when applying the population projections method.
- 264 residential lots to accommodate demand for new dwellings when applying the dwellings approvals method.
- 384 residential lots to accommodate demand for new dwellings when applying the water metre connections method.

Summary of Key Findings

The number of residential lots required over the next 20 years to meet future demand in Mudgee and Gulgong varies considerably between the three approaches. However, the degree of difference is not as great over the next 10 years. This is largely due to strong population growth driven by construction of the new mining projects that are expected.

When nominating a preferred approach Council must be mindful that under estimating demand for additional residential land and lots has a potentially greater negative impact on the community than over estimating demand. For this reason it is recommended the level of demand calculated using the water metre connections approach be applied. The following table summarises the lots required using this approach.

Table 53 - Mudgee and Gulgong - Number of Lots/Dwellings Required Over 20 Years using Preferred Approach to Calculating Demand (2015-2035)

Mudgee			
Type of Dwellings Required	No. of Lots / Dwellings Required		
	0 to 10 years	10 to 20 years	Total
House/dual occupancy on smaller lot	149	149	298
House on standard lot (700-900sqm)	893	893	1786
Large Lot Residential (2,000-4000sqm)	149	149	298
Large Lot Residential (2ha & over)	74	74	149
Town houses, villa etc	223#	223#	446#
Total	1,488	1,488	2,976
Gulgong			
Type of Dwellings Required	No. of Lots Required		
	0 to 10 years	10 to 20 years	Total
House/dual occupancy on smaller lot	29	29	58
House on standard lot (700-900sqm)	134	134	269
Large Lot Residential (2,000-4,000sqm)	19	19	38
Large Lot Residential (2ha & over)	10	10	19
Total	192	192	384

Source: HillPDA Note 1: # this represent the number of multi-unit dwellings required, not lots * assumes townhouse and multi-unit development will occur as infill in Mudgee CBD. Note 2: all lot estimates include +20% contingency

It should be noted that the projected demand for lots in the 10 to 20 year period is most likely an over estimate as population growth is expected to return to longer term trend levels in this period. Regular reviews and updates of this Strategy will however enable land release to be adjusted as demand fluctuates over time.

The final table in this chapter shows the average number of lots/dwellings required per year to meet demand in Mudgee and Gulgong using the preferred approach to calculating demand. It shows Mudgee and Gulgong will require on average 149 and 19 new lots each year respectively to meet future demand[8].

[8] all lot estimates include +20% contingency.

Table 54 - Average Number of Lots/Dwellings Required Over 20 Years using Preferred Approach to Calculating Demand (2015-2035)

Mudgee			
Type of Dwellings Required	Average No. of Lots/Dwellings Required Per Year		
	0 to 10 years	10 to 20 years	0 to 20 years
General Residential (400-1000sqm)	104	104	104
Low Density Residential (2000-4000sqm)	15	15	15
Large Lot Residential (2ha & over)	7	7	7
Town houses, villa etc	22	22	22
Total	**149**	**149**	**149**
Gulgong			
Type of Dwellings Required	No. of Lots Required		
	0 to 10 years	10 to 20 years	Total
General Residential (400-1000sqm)	16	16	16
Low Density Residential (2000-4000sqm)	2	2	2
Large Lot Residential (2ha & over)	1	1	2
Total	**19**	**19**	**19**

Source: HillPDA

6 GAP ANALYSIS

The chapter brings together the supply and demand analysis for Mudgee and Gulgong undertaken in chapters 4 and 5.

Mudgee

The following table shows the land in Mudgee's urban release areas zoned for standard residential lots would be exhausted after 19 years. Land supply for 2ha residential lots would be exhausted after just 9 years. There does however appear to be sufficient land zoned for 2,000-4,000sqm residential lots to meet demand in the long term. The massive surplus of 2,000-4,000sqm residential lots is largely driven by the provisions of LEP Clause 4.1 (Minimum Lot Size controls) which permits pre-designated 10ha and 2ha lots to be subdivided into 2,000sqm and 4,000sqm lots respectively when Council is satisfied that each lot is, or will be serviced by a water reticulation system and sewerage system.

Table 55 - Mudgee: Existing Lot Supply Capacity vs. Future 20 Year Demand (2015-2035)

	Estimated Current Supply of Residential Lots	Estimated Future Demand for Residential Lots (2015-2035)	Difference	Average Lots Required Per Year (2015-35)	No. of Years Supply Remaining
General Residential (400-1000sqm)	1,981	2,083	-102	104	19
Low Density Residential (2000-4000sqm)	825	298	527	15	55
Large Lot Residential (2ha & over)	63	149	-86	7	9
Town houses / multi-unit housing	0	446	-446	22	0
Total	**2,869**	**2,976**	**-107**	**148**	**19**

Source: HillPDA

Gulgong

The following table shows land zoned for standard residential lots and larger lots over 4,000sqm in Gulgong's urban release areas would be exhausted after 35 and 27 years respectively. Gulgong's urban release areas do not contain any land zoned for 2,000sqm lots, despite expected demand.

Table 56 - Gulgong: Existing Lot Supply Capacity vs. Future 20 Year Demand

	Estimated Current Supply of Residential Lots	Estimated Future Demand for Residential Lots (2015-2035)	Difference	Average Lots Required Per Year (2015-35)	No. of Years Supply Remaining
General Residential (700-1000sqm)	563	326	237	16	35
Low Density Residential (2000-4000sqm)	0	38	-38	2	0
Large Lot Residential (2ha & over)	27	19	8	1	27
Total	**590**	**383**	**207**	**19**	**31**

Source: HillPDA

Care must be taken when estimating the amount of supply that exists in this manner as it assumes all residential zoned land will be turned into lots. As previously mentioned this may not be the case in reality as the development potential of land is often collectively influenced by environmental, market or ownership constraints that can hinder development from occurring. A 'buffer' or additional amount of land must be factored in as a consequence.

7 INFRASTRUCTURE

Prior to the release of land for residential purposes it is important to ensure areas can be economically and efficiently serviced in terms of water, sewer, roads and waste facilities and that providing these services does not impose an unacceptable burden to Council and existing residents.

A number of issues relating to the servicing of the growing population and proposed residential areas are considered in the following section.

Water Supply

Water supply for both Mudgee and Gulgong is sourced from the Cudgegong River downstream of the 368GL Windamere Dam located east of Mudgee.

Both Mudgee and Gulgong have their own water supply schemes and water treatment plants. In 2006, the Mudgee's water supply system was upgraded with the construction of a new water treatment plant adjacent to Burrundulla Road (refer Appendix A). During the same year, a new water treatment plan was construction in Gulgong which is located north of Old Mills Road (refer Appendix B).

There are no identified capacity constraints for the provision of water supply for either Mudgee or Gulgong that would limit residential development [9]. However, it is acknowledged that some areas within Mudgee would be more costly and difficult to service than others, i.e. Spring Flat in the south-east.

With respect to Gulgong, whilst there are no short term capacity constraints for the water supply system, the water treatment system has reached capacity and will require upgrading if additional residential development is to occur in the area. In the short term, growth within Mudgee can be catered for with existing water infrastructure. However, as outlined in the MWRC Local Services Assessment, any significant increases in population (i.e. 25% or more) would require an expansion of the Mudgee Water Supply Treatment Plant.

For Gulgong, in the short and long term there are no capacity constraints for Gulgong's water supply scheme, there are, however, localized capacity constraints that may influence future staging of

[9] Source: MWRC Local Services Assessment 2012 (Manidis Roberts). Discussions with Claire Cam from MWRC on 21 May 2014

residential development within the area. What is evident is that Gulgong's Water Treatment system has reached capacity and requires upgrading. Cost estimates have been undertaken by Council and are outlined within the MWRC Local Services Assessment Report.

In 2013, HyrdoScience identified significant demand for water in the region over the next 30 years due mainly to expected residential growth. It is estimated that between 2011/12 to 2042/43 demand for water in Mudgee will increase by 64% and for Gulgong over the same period an increase of 51%.

Sewerage Supply

Both Mudgee and Gulgong have their own sewer infrastructure. A new Mudgee Sewerage Treatment Plan (STP) was commissioned in October 2013. It is located behind the Mudgee Waste Facility on Hill End Road. The STP is designed to be service an estimated residential population of 14,000 and a non-residential equivalent of 2,000. It is noted, however, pumping stations and reticulation will be required to accommodate expanded residential areas. There are also seven sewerage pumping stations, the majority being located north of the railway line (refer Appendix A).

Gulgong has a STP (completed in 1997) which is located in the north-western region. The Gulgong STP comprises a gravity sewerage collection system with three sewage pumping stations in various locations. It is noted, however, that capacity of the STP would be exceeded with the introduction of a large mining camp in the area[10] (refer Appendix B).

The main issue with sewerage infrastructure in both Mudgee and Gulgong is capacity constraints. Without upgrades the infrastructure would likely come under increasing pressure which may result in increasing maintenance requirements and overall increases cost due to increased overflow events.

A review of the draft Mudgee Town Structure Plan along with discussions with MWRC Officers[11], identifies that infrastructure costs associated with developing lands beyond the existing residential areas varies considerably. While more detailed costing and

[10] MWRC Local Services Assessment 2012
[11] Meeting with MWRC Officers on 22 May 2014.

assessment would be required to determine specific costs for infrastructure outside the existing residential areas, what is generally agreed is that developing land for residential purposes to the north is less expensive than south. The main reason for the cost variation is due mainly to significant sewer and drainage infrastructure required in the southern areas particularly in the vicinity of Spring Flat.

Roads

Due to expected increases in mining activity in the region along with increased population in Mudgee, a number of sub-arterial and local roads have been experienced rapid growth in traffic movements. The MWRC Local Services Assessment (2012) identified that Ulan Road between Mudgee and Gulgong has experienced significant traffic movements between 2002 to 2011 at a rate of 12.6% per annum. The Draft Mudgee Traffic Study (2014) prepared by Gennaoui Consulting Pty Ltd (2014) identifies road infrastructure that requires upgrading to facilitate more efficient traffic movement in and around Mudgee. The road infrastructure upgrades would be prioritised to ensure implementation is timely and in line with forecasts growth predicted for the area.

Waste

Domestic waste for Mudgee and Gulgong is collected and transported to the waste facility in Mudgee. The waste depot is located along Hill End Road and is approximately 1 km from Castlereagh Highway. The existing landfill cell at Mudgee Waste Depot is expected to reach capacity within 10 years. Council has engaged specialist consultants to prepare a Landfill Environmental Management Plan to enabling a staging landfill plant and staged landfill closure plan for operation of the facility for the next 60 years.

8 ENVIRONMENTAL CONSTRAINTS AND LAND SUITABILITY

This chapter discusses a number of environmental constraints that may impact upon the orderly release of land for future residential purposes.

Topography

In considering environmental constraints, slope is a significant factor which impacts upon and influences soil erosion, drainage and bushfire hazard. Just as importantly, it has implications with respects to the provision and capital cost of infrastructure, roads and social services for a region. Mudgee has steep areas of land located in the south-west of the region that will impact development potential in urban release areas 6 and 7.

Flood Prone Land

Flood prone land presents a significant constraint to development as it has implications with respect to the capital cost and provision of infrastructure, roads and social services that may be physically located with flood plains.

Flooding is identified as a significant environmental constraint in Mudgee in particular along the Cudgegong River. The northern limit of Mudgee is often defined by the Cudgegong River and land immediately north of the river is considered unsuitable for urban development as its considered prime agricultural land highly susceptible to flooding.

In Mudgee there is a significant proportion of high risk flooding located largely north of the Cudgegong River. A smaller portion of high, medium and low risk flooding is located within the northern portion of the existing town centre (refer Appendix A).

Gulgong has no identified medium or low risk flooding however there is a small portion of high risk flooding located north of the existing town centre (refer Appendix B).

Groundwater Vulnerability

Groundwater vulnerability is principally about maintaining the hydrological function of key groundwater systems whilst protecting vulnerable groundwater resources from depletion and/or contamination. Prior to the determination of a development application on land identified as comprising groundwater vulnerability it is necessary to address potential groundwater contamination, any adverse impacts on ecosystems and mitigation measures[12] .

In Mudgee, groundwater vulnerability covers an extensive area of the urban release area, particularly in the north, north-east and south east areas (refer Appendix A). Gulgong on the other hand, has minimal areas identified as being effected by groundwater vulnerability (refer Appendix B).

Visually Sensitive Land

Visually sensitive land has been identified to protect the visually and environmentally significant upper slopes on the urban fringe south of the town of Mudgee. Any proposed development of land needs to take into consideration the visual setting forming the backdrop to Mudgee[13] . In Mudgee, visually sensitive land is located in the south of west of the area (refer Appendix A). In comparison, Gulgong has no identified visually sensitive land in the area (refer Appendix B).

Sensitive Biodiversity

The main objective of identifying sensitive biodiversity is to maintain terrestrial biodiversity by protecting native fauna and flora whilst encouraging the conservation of habitats.

Mudgee has areas of land identified as having high and moderate sensitive biodiversity. A small portion of high sensitive biodiversity land in the north is located along the Cudgegong River and Lue Road. An identified moderate level of sensitive biodiversity land is located within the Caerleon and Saleyards Lane areas. However, the largest area of high sensitive biodiversity land is located in the south-west area slightly beyond Mudgee's town centre (refer Appendix A).

In comparison to Mudgee, Gulgong has minimal sensitive biodiversity area. All areas identified are located well north of Gulgong's town centre within the rural areas around Prosperity and Hideaway Lane (refer Appendix B).

[12] Clause 6.4 of Mid Western Regional LEP 2012
[13] Ibid

Agricultural Land

Agricultural land will continue to be a key land use within the region. As previously discussed, land immediately north of the Cudgegong River in Mudgee is considered prime agricultural land. Further to the north is utilised for intensive agriculture purposes as well as areas to the east of Mudgee. There is high value irrigated agricultural lands to the north and east of Mudgee.

Gulgong also has significant agricultural land located to the north, south, east and west of the town centre.

Bushfire Hazard

In planning for the release of land for urban development purposes, it is important to take into account the potential threat from bushfire. Bushfire hazard can be a major constraint to future residential development given the likelihood for bushfire risks. The topography and overall slope of the land determines the level of bushfire hazard.

A significant area of land within the south-western portion of Mudgee's urban release area is classified as bushfire prone land (refer Appendix A). In comparison, Gulgong has no identified bushfire prone land in the area (refer Appendix B).

Heritage

The protection of heritage items and heritage conservations are considered constraints to future residential development and due consideration needs to be given when developing heritage areas.

Mudgee has an identified heritage conservation area that protects the town centre along with varies heritage items scattered throughout the area. Urban releases areas 14 & 18A have heritage items identified so due consideration needs to be given to protecting these items when the land is required for future residential purposes (refer Appendix A).

Like Mudgee, there is also a conservation area located within Gulgong's town centre as well as a number of heritage items scattered throughout the area (refer Appendix B). The Gulgong urban release areas do not impact upon the conservation area or any identified heritage items.

Land Suitability Methodology

In considering the information on environmental constraints a land suitability analysis was undertaken for both Mudgee and Gulgong. The methodology used in this Urban Release Strategy aim to identify and evaluate a range of constraints which would impact upon the ability of particular areas to be released for future residential development or expansion.

The identification of a sound methodology will enable Council, developers and the community to better understand the process with respect to releasing land for residential purposes.

The methodology for determining the most appropriate land to be released for residential purposes focuses on aspects of the release area that pose limitations to future development. These areas can be broadly divided and categorised into environmental, economic and infrastructure limitations.

Natural features primarily define the environmental limitations. The environmental constraints have been considered and take into consideration topography, flood prone land, bushfire hazard areas, groundwater vulnerability, biodiversity sensitive land and the location of prime agricultural land. The analysis of this information enables the user to recognise areas of varying suitability of land to be released for residential purposes.

Some environmental constraints create prohibitions to development, for example, bushfire hazard zones. Other constraints identify less desirable areas that would require mitigation measures, for example, biodiversity sensitive land.

Economic limitations are more subjective, however, once areas of low environmental limitations are identified at a broad scale, this information can assist Council in determining the cost implications, risk and other factors relating to land within the Mudgee urban release area. Residential development has a range of economic and social requirements which include the location of the site, its physical size, price and accessibility to social and physical infrastructure provisions.

Infrastructure limitations consider the existing physical infrastructure with particular emphasis on water and sewer.

HillPDA has considered each of the aforementioned constraints and opportunities when preparing the Strategy recommendation outlined in the next chapter.

What is evident, however, is not all of the sites included in the recommendations for possible future development are included in Council's CLUS or have been through a rigorous site specific suitability assessment. Hence, inclusion within this Strategy does not mean that sites will necessary be rezoned either in full or part but simply that the desktop assessment was based on information contained in documents available at the time of this strategy, indicates sites as options for possible future development. Therefore, an amendment to the CLUS and individual planning proposals would be required for any rezoning of land for urban purposes.

9 LAND RELEASE STRATEGY

This chapter brings together the research and findings undertaken during the study to provide a set of guiding principles and recommendations for land release in Mudgee and Gulgong.

Guiding Principles

The following principles have been developed to inform future residential land release. The principles have been developed and applied to ensure future residential land release facilitates sustainable economic, environmental and social outcomes for the LGA's community.

The Strategy's guiding principles are as follows:

- ***Encourage higher density residential development in Mudgee and Gulgong town centres*** - Council should continue to encourage the development of higher density forms of residential development (e.g. townhouses, villas and the like) within walking distance of Mudgee and Gulgong town centres. This Strategy has identified that more than 20 higher density dwellings will need to be developed in Mudgee's CBD *every year* to meet growing demand generated by an aging population, investors and buyers looking for affordable housing.
- ***Rely on areas already zoned and nominated for residential development in the first instance to meet future demand*** - a substantial amount of residential land already exists in Mudgee and Gulgong for residential purposes. Where possible, future growth should occur in these areas before further rezonings. It may be that some release areas are appropriately zoned but require a change to the lot size controls to facilitate development. In this case Council should consider permitting these changes in accordance with the recommendations provided in this chapter to ensure an adequate supply pipeline is maintained.
- ***Maximise use of existing Council infrastructure*** - the location of new residential development should seek to maximise existing and planned Council infrastructure, particularly water and sewage, so as to minimise costs to consumers and council and financial risk to the broader rate payer.

- ***Encourage and meet demand for a diverse range of housing types and lots sizes*** - Mudgee and Gulgong's housing market is diverse and dynamic. The Strategy must seek to address each of these market segments. Furthermore, new larger greenfield developments should provide a range of lots sizes.
- ***Facilitate orderly and coordinated approach to residential growth*** - the location and timing of new residential release areas should be informed by accurate and timely supply and demand monitoring. Rezoning's that cannot establish a demand need should be discouraged.
- ***Ensure a pipeline supply buffer exists*** - Council should have 5 years' worth of land zoned for each residential type as a buffer to avoid future shortage (e.g. if demand if 100 dwellings per year, council should maintain 500 lots zoned fit for purpose).
- ***Protect employment lands and high value agricultural land*** - employment and high value agricultural land in and around Mudgee and Gulgong should be protected.
- ***Avoid environmentally sensitive areas and natural hazards*** - residential growth should not encroach on areas identified as environmentally sensitive areas or natural hazards.

Recommendations

Our gap analysis found insufficient land zoned in Mudgee's urban release areas to meet long term 20 year demand for standard residential lots (450-900sqm) and 2ha lots. Gulgong's urban release areas contained sufficient land zoned to meet long term 20 year demand for 2,000sqm residential lots. The following table provides an overview of our recommendations in relation to potential supply of land and lots in Mudgee and Gulgong's urban release areas.

Table 57 - Current Versus Recommended Land and Lot Supply in Urban release Areas (2015-35)

Zone	Current Number of Additional Lots Available	Recommended Number of Additional Lots Available	Difference in Lot Supply
Mudgee Urban Release Areas			
R1 General Residential	1,981	2,469	488
R2 Low Density Residential	718	1,048	330
R5 Large Lot Residential	149	315	166
RU1 Primary Production	2	0	--2
RU4 Primary Production Small Lots	18	23	5
Total	2,869	3,855	986
Gulgong Urban Release Areas			
R1 General Residential	563	563	0
R2 Low Density Residential	60	100	40
R5 Large Lot Residential	27	38	11
Total	650	701	51

Source: HillPDA

A more detailed discussion of the Mudgee and Gulgong's urban release areas is provided below.

Mudgee Urban Release Areas

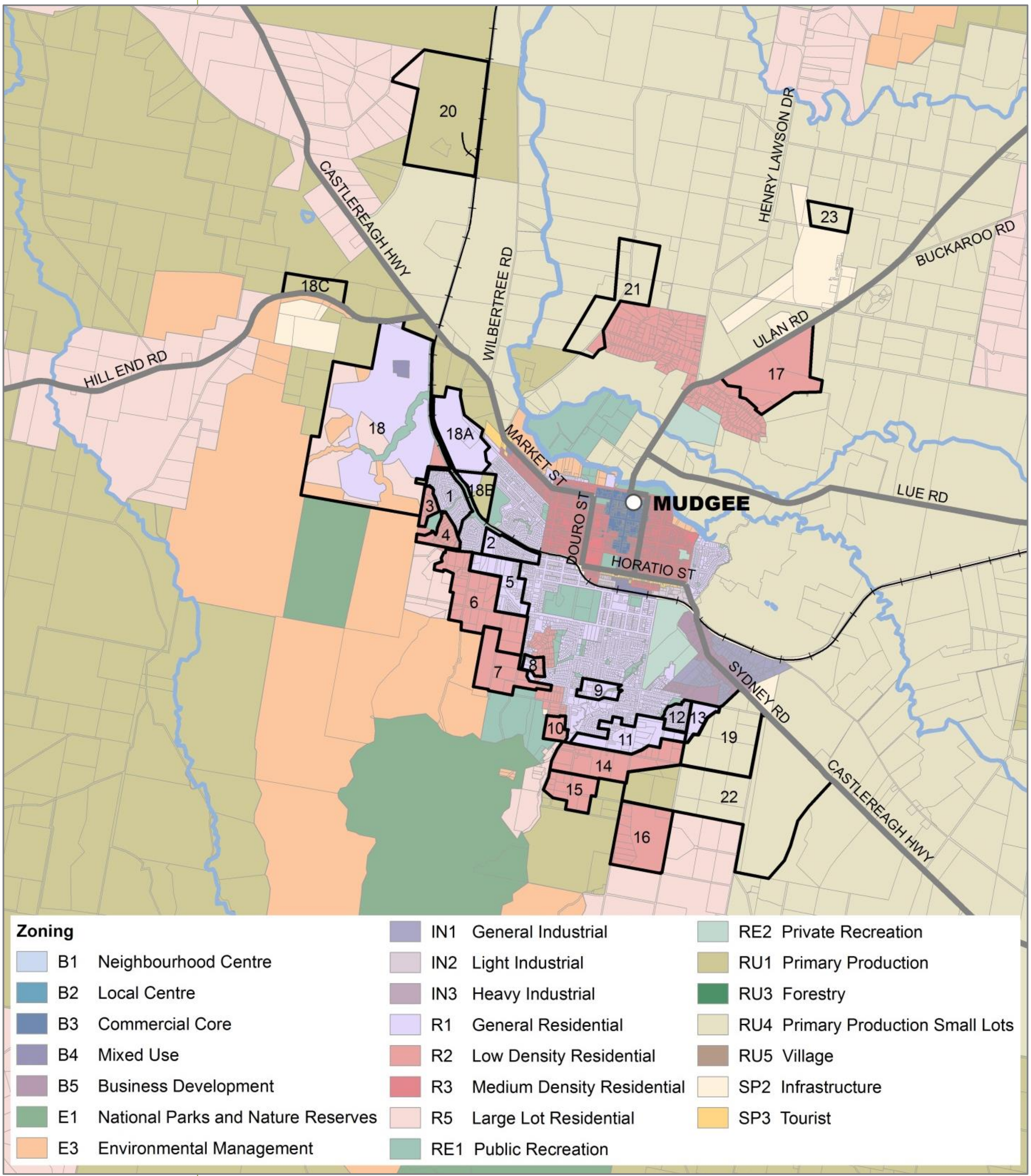
The following table provides an overview of the Strategy's recommendations for each of Mudgee's urban release areas.

Table 58 - HillPDA Recommendations for Mudgee's Urban Release Areas and Lot Projections (2015-2035)

Urban Release Area	Location	Recommended Zone and Density of Residential Development	Recommended Minimum Lot Size	Rezoning Required?	Change to Lot Size Required?	Recommended No. of Additional Lots Available
1	Bellevue Road	R1 General Residential	600sqm	N	N	40
2	Bellevue Road	R1 General Residential	600sqm	N	N	10
3	Bellevue Road	R2 Low Density Residential	2000sqm	N	N	45
4	Bellevue Road	R2 Low Density Residential	2000sqm	N	N	15
5	Rifle Range Road 1	R1 General Residential	600sqm	N	N	179
6	Rifle Range Road 2	R1 General Residential	600sqm	Y	Y	428
7	Rifle Range Road 3	R2 Low Density Residential	4000sqm	N	N	80
8	South Mudgee Infill 1	R1 General Residential	600sqm	N	N	10
9	South Mudgee Infill 2	R1 General Residential	600sqm	N	N	32
10	South Mudgee Infill 3	R2 Low Density Residential	2ha	N	N	4
11	South Mudgee Infill 4	R1 General Residential	600sqm	N	N	287
12	South Mudgee Infill 5	R1 General Residential	600sqm	N	N	4
13	South Mudgee Infill 6	R1 General Residential	600sqm	N	N	83
14	South Mudgee Low Density 1	R2 Low Density Residential	2000sqm	N	N	230
15	South Mudgee Low Density 2	R2 Low Density Residential	4000sqm	N	N	0
16	Broadhead Road	R2 Low Density Residential	2000sqm	N	Y	92
17	Ulan Road	R2 Low Density Residential	2000sqm	N	Y	294
18	Caerleon - General Density	R1 General Residential	450sqm	N	N	997
18	Caerleon - Large Lot	R5 Large Lot Residential	4000sqm	N	N	149
18A	Saleyards	R1 General Residential	600sqm	N	N	294
18B	Fairydale Lane - R1	R1 General Residential	600sqm	N	N	45
	Fairydale Lane - RU4	R1 General Residential	600sqm	Y	Y	60
18C	Hill End Road - Industrial	RU1 Primary Production	100ha	N	N	0
19	Spring Flat	RU4 Primary Production Small Lots	20ha	N	N	15
20	Former Abattior Site	R5 Large Lot Residential	2ha	Y	Y	67
21	Putta Bucca – R2	R2 Low Density Residential	2000sqm	N	Y	15
	Putta Bucca – RU4	R2 Low Density Residential	2000sqm	Y	Y	258
22	Burrundulla / Spring Flat - RU 1	RU1/4 Primary Production	100ha	N	N	0
	Burrundulla / Spring Flat - RU 4	R5 Large Lot Residential	2ha	Y	Y	98
23	55 George Campbell Drive	RU4 Primary Production	2ha	N	Y	8
Total						**3,839**

Source: HillPDA

Figure 14 - Mudgee Urban Release Areas and LEP 2012 Zoning



Source: HillPDA and RPS

The next table provides an estimated timeframe for land release in each of Mudgee's area.

Table 59 - Recommended Staging of Mudgee's Urban Release Areas (2015-2035)

Urban Release Area	Location	Recommended Minimum Lot Size	Recommended No. of Additional Lots Available	0-5 years	5-10 years	10-15 years	15-20 years	20+ years
				2015-2019	2020-2024	2025-2029	2030-2034	2035+
1	Bellevue Road	600sqm	40	40				
2	Bellevue Road	600sqm	10	10				
3	Bellevue Road	10ha	45	45				
4	Bellevue Road	10ha	15	15				
5	Rifle Range Road 1	600sqm	179	90	89			
6	Rifle Range Road 2	600sqm	428		143	143	142	
7	Rifle Range Road 3	2ha	80	80				
8	South Mudgee Infill 1	600sqm	10		10			
9	South Mudgee Infill 2	600sqm	32		32			
10	South Mudgee Infill 3	2ha	4	4				
11	South Mudgee Infill 4	600sqm	287			143	143	
12	South Mudgee Infill 5	600sqm	4	4				
13	South Mudgee Infill 6	600sqm	83		83			
14	South Mudgee Low Density 1	2000sqm	230	230				
15	South Mudgee Low Density 2	2ha	0					
16	Broadhead Road	2ha	92		92			
17	Ulan Road	2000sqm	294	98	98	98		
18	Caerleon - General Density	450sqm	997	750	125	122		
18	Caerleon - Large Lot	4000sqm	149	30	30	30	30	29
18A	Saleyards	600sqm	294	177	20	50	48	
18B	Fairydale Lane - R1 Fairydale Lane - RU4	600sqm 600sqm	45 60		45 60			
18C	Hill End Road - Industrial	100ha	0					
19	Spring Flat	20ha	15	15				
20	Former Abattior Site	2ha	67					67
21	Putta Bucca	2000sqm 2000sqm	15 258					15 258
22	Burrundulla / Spring Flat - RU 4	2ha	98	49	49			
23	55 George Campbell Drive	2ha	8	8				
Total			**3,678**	**1,644**	**876**	**585**	**363**	**369**

Source: HillPDA *sum totals may be impacted by rounding

The following tables provide a summary of the projected demand and recommended supply of lots by housing type for Mudgee's urban release areas. The tables also show the number of lots required as a buffer to ensure adequate capacity exists to accommodate unexpected growth and the time taken to bring new lots to market.

By comparing the estimated and required buffer it is possible to determine the trigger points to justify further release of land.

General Residential Lots (450-1000sqm)

Demand for general residential lots (450-1000sqm) in Mudgee's urban release areas is projected to average 104 lots per annum or 521 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 905 and 1,157 general residential lots available every five years until the year 2035. This level of supply will create a buffer of 549 to 636 lots over the next 15 years which is sufficient to meet the required 5 year buffer of 521 lots. The analysis indicates that further land may need to be released in the long term to accommodate demand in the 15-20 year period if high levels of demand were sustained.

Table 60 - Mudgee – Supply, Demand and Pipeline Buffer for General Residential Lots (450-1000sqm)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	104	521	521	521	521
Supply - Lots Available		1,070	1,157	1,093	905
Estimated buffer between lot demand & supply		549	636	572	385
Required 5 Year buffer between lot demand & supply		521	521	521	521

Source: HillPDA

Low Density Residential (2000-4000sqm)

Demand for low density residential lots (2,000-4,000sqm) in Mudgee's urban release areas is projected to average 15 lots per annum or 75 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 498 and 695 2,000-4,000sqm residential lots available every five years until the year 2035. This level of supply will create a buffer of 423 to 620 lots over that period which is sufficient to meet the required 5 year buffer of 74 lots. The massive surplus of lots this size is driven by the provisions of LEP Clause 4.1 (Minimum Lot Size controls).

Table 61 - Mudgee – Supply, Demand and Pipeline Buffer for Low Density Residential Lots (2000-4000sqm)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	15	75	75	75	75
Supply - Lots Available		498	642	695	650
Estimated buffer between lot demand & supply		423	567	620	575
Required 5 Year buffer between lot demand & supply		75	75	75	75

Large Lot Residential (2ha and over)

Demand for larger residential lots (2ha and greater) in Mudgee's urban release areas is projected to average 7 lot per annum or 37 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 76 and 88 large residential lots available every five years until the year 2025. This level of supply will create a buffer of 43 to 51 lots over that period which is sufficient to meet the required 5 year buffer of 37 lots. The analysis indicates that further land may need to be released in the long term to accommodate demand in the 10-20 year period if high levels of demand for 2ha lots were sustained.

Table 62 - Mudgee – Supply, Demand and Pipeline Buffer for Large Lot Residential (2ha and over)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	7	37	37	37	37
Supply - Lots Available		60	88	51	14
Estimated buffer between lot demand & supply		43	51	14	-23
Required 5 Year buffer between lot demand & supply		37	37	37	37

Source: HillPDA

The following pages discuss each of Mudgee's urban release areas and our recommendations in more detail.

Bellevue (Areas 1 & 2)

Area/s Number	1 & 2
Area Name	Bellevue
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	43Ha
Size of Residential Zoned Land (Ha)	41.6Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	Significant development has occurred within Bellevue areas 1 & 2. 40 lots remain undeveloped in area 1 whilst 10 lots remain in area 2. These are expected to be exhausted within 5 years. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for sites	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	50
Recommended Availability of Lots	2015+

Bellevue (Area 3 & 4)

Area/s Number	3 & 4
Area Name	Bellevue
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	21Ha
Size of Residential Zoned Land (Ha)	20.8Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	10Ha (2,000sqm with services)
Remaining Potential	Area 3 is undeveloped and 15 lots remain in the existing subdivision. Area 4 has been developed and 5 lots remain in the existing subdivision. The remaining 20 lots for both areas are likely to be exhausted within 5 years. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	10Ha (2,000sqm with services)
Number of Lots Area would yield in total	60
Recommended Availability of Lots	2015+

Rifle Range Road 1 (Area 5)

Area/s Number	5
Area/s Name	Rifle Range Road 1
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	32Ha
Size of Residential Zoned Land (Ha)	31.8Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	Considerable development has occurred within this area and 35 lots remain within the existing subdivision. There is 16Ha of zoned R1 General Residential land than remains vacant which has a yield potential of 179 lots. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	179
Recommended Availability of Lots	2015+

Rifle Range Road 2 (Area 6)

Area/s Number	6
Area/s Name	Rifle Range Road 2
Constraints	Bushfire (Category 2), Groundwater Vulnerability, Visually Sensitive Land
Total Size of Area (Ha)	73Ha
Size of Residential Zoned Land (Ha)	72.4Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	10Ha (2,000sqm, 600sqm with services)
Remaining Potential	Area 6 is well situated to accommodate demand for standard residential lots (450-900sqm) in the short to medium term. 53.5Ha of land zoned R2 Low Density Residential is available for rezoning. The Area is impacted by a number of constraints, therefore, it is estimated that 18.9Ha of land is unsuitable for higher density development.
Recommendations:	
Our recommendation for site	It is recommended to rezone the remainder of land to R1 General Residential with a minimum lot size of 600sqm. The proposed rezoning would meet increasing demand for a range of housing types and lot sizes in particular smaller parcels of land.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	428 lots
Recommended Availability of Lots	2020+

Rifle Range Road 3 (Area 7)

Area/s Number	7
Area/s Name	Rifle Range Road 3
Constraints	Bushfire (Category 2), Visually Sensitive Land, Fragmented Land Ownership. Furthermore, nothing will happen on the site until rifle range relocates.
Total Size of Area (Ha)	40Ha
Size of Residential Zoned Land (Ha)	39.9Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	2Ha (4,000sqm with services)
Remaining Potential	Area 7 contains approximately 39.9Ha of land zoned R2 Low Density Residential.
Recommendations:	
Our recommendation for site	No change is recommended. The area will form an important buffer to higher density estates likely to be developed in adjoining areas (Areas 6 and 8). Discussions with agents also suggest growing demand for 2ha lots although these could be accommodated under current zone / lot size.
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	4,000sqm with services
Number of Lots Area would yield in total	80
Recommended Availability of Lots	2015+

South Mudgee Infill 1 (Area 8)

Area/s Number	8
Area/s Name	South Mudgee Infill 1
Constraints	Groundwater Vulnerability, Visually Sensitive Land, Fragmented Land Ownership
Total Size of Area (Ha)	6Ha
Size of Residential Zoned Land (Ha)	2.8Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	Some development has already occurred within Area 8. It is estimated that 1.1Ha of land zoned R1 General Residential remains that is suitable for standard housing lots. It is anticipated all lots within Area 8 would be exhausted within 10 years. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	10
Recommended Availability of Lots	2020+

South Mudgee Infill 2 (Area 9)

Area/s Number	9
Area/s Name	South Mudgee Infill 2
Constraints	Bushfire (Buffer zone), flood liable land, groundwater vulnerability, Fragmented Land Ownership
Total Size of Area (Ha)	12Ha
Size of Residential Zoned Land (Ha)	10.6Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	It is estimated that 3.6Ha of land zoned R1 General Residential remains suitable for development. It is anticipated all lots within area 9 would be exhausted within 10 years. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	32
Recommended Availability of Lots	2020+

South Mudgee Infill 3 (Area 10)

Area/s Number	10
Area/s Name	South Mudgee Infill 3
Constraints	Bushfire (Buffer zone), flood liable land, visually sensitive land, Fragmented Land Ownership
Total Size of Area (Ha)	9Ha
Size of Residential Zoned Land (Ha)	8.7Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	2Ha
Remaining Potential	Area 10 has not been developed. There is approximately 8.7Ha of land zoned R2 Low Density Residential than remains vacant.
Recommendations:	
Our recommendation for site and why	No change is recommended. The area will form a buffer at Mudgee's urban fringe and help meet demand for 2Ha lots.
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	4
Recommended Availability of Lots	2015+

South Mudgee Infill 4 (Area 11)

Area/s Number	11
Area/s Name	South Mudgee Infill 4
Constraints	Groundwater Vulnerability, Fragmented Land Ownership
Total Size of Area (Ha)	40Ha
Size of Residential Zoned Land (Ha)	39.8Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	There is approximately 35.8Ha of land zoned R1 General Residential that is suitable for development. It is estimated that 4ha of the site area is unsuitable for development. The area can provide supply of standard residential lots (<900sqm) in the medium to long term. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	287
Recommended Availability of Lots	2025+

South Mudgee Infill 5 (Area 12)

Area/s Number	12
Area/s Name	South Mudgee Infill 5
Constraints	Groundwater vulnerability, Fragmented Land Ownership
Total Size of Area (Ha)	11Ha
Size of Residential Zoned Land (Ha)	10.9Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	Significant development has occurred within area 12. Only 4 lots remain unbuilt upon in the Area. The area is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	4
Recommended Availability of Lots	2015+

South Mudgee Infill 6 (Area 13)

Area/s Number	13
Area/s Name	South Mudgee Infill 6
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	11Ha
Size of Residential Zoned Land (Ha)	10.7Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	No development has occurred within Area 13 and 10.4Ha of R1 General Residential zoned land remains vacant. The area is will help meet medium term demand for standard lots (<900sqm) and is well located to Mudgee's Town Centre and maximizes use of existing infrastructure.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	83
Recommended Availability of Lots	2020+

South Mudgee Low Density 1 (Area 14)

Area/s Number	14
Area/s Name	South Mudgee Low Density 1
Constraints	Bushfire (Vegetation Cat 2), Flood liable land (low risk), Groundwater Vulnerability, Visually Sensitive Land, Fragmented Land Ownership, Heritage
Total Size of Area (Ha)	58Ha
Size of Residential Zoned Land (Ha)	57.5Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	10Ha (2,000sqm with services)
Remaining Potential	There is approximately 57.5Ha of R2 Low Density Residential zoned land that remains vacant.
Recommendations:	
Our recommendation for site	In the long term Area 14 could form a buffer at Mudgee's urban fringe and help meet demand for 2,000sqm lots. However, if demand necessitated in the long term the area could also include a portion of smaller lots (<900sqm).
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	2,000sqm
Number of Lots Area would yield in total	230+
Recommended Availability of Lots	2015+

South Mudgee Low Density 2 (Area 15)

Area/s Number	15
Area/s Name	South Mudgee Low Density 2
Constraints	Bushfire (Vegetation Cat 2), Groundwater Vulnerability, Visually sensitive land, Fragmented Land Ownership
Total Size of Area (Ha)	26Ha
Size of Residential Zoned Land (Ha)	25.8Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	2Ha
Remaining Potential	The area is undeveloped and has no sewer infrastructure.
Recommendations:	
Our recommendation for site	No change recommended. This area can form a buffer zone to the residential areas of 10, 11 & 14 which are located north of the area.
Proposed Future Zoning	R2 General Residential
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	0
Recommended Availability of Lots	N/A

Broadhead Road (Area 16)

Area/s Number	16
Area/s Name	Broadhead Road
Constraints	Bushfire (Buffer Zone), Groundwater Vulnerability, Visually sensitive land, Sensitive Biodiversity
Total Size of Area (Ha)	57Ha
Size of Residential Zoned Land (Ha)	57Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	2Ha & 10Ha (2,000sqm-4,000sqm with services)
Remaining Potential	There is approximately 57Ha of R2 Low Density Residential zoned land suitable for dwellings. 9 x 2ha lots have been recently been constructed. The remainder of the Area is subject to a DA for 2,000sqm-4,000sqm lots. It would not be inconsistent to achieve 2,000sqm across the site.
Recommendations:	
Our recommendation for site	Minimum lot size changed to 2,000sqm
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	2,000sqm-4,000sqm
Number of Lots Area would yield in total	92
Recommended Availability of Lots	2020+

Ulan Road (Area 17)

Area/s Number	17
Area/s Name	Ulan Road
Constraints	Flood Liable Land (low risk), Groundwater Vulnerability
Total Size of Area (Ha)	74Ha
Size of Residential Zoned Land (Ha)	73.4Ha
Current Zoning	R2 Low Density Residential
Current Minimum Lot Size	2Ha
Remaining Potential	There is approximately 73.4Ha of R2 Low Density Residential zoned land that is suitable for redevelopment. If the minimum lot size were reduced to 2,000sqm the area could accommodate around 300 dwellings. Council would need to consider the costs associated with providing water and sewer.
Recommendations:	
Our recommendation for site	Minimum lot size changed to 2,000sqm
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	2,000sqm
Number of Lots Area would yield in total	294
Recommended Availability of Lots	2015+

Caerleon (Area 18)

Area/s Number	18
Area/s Name	Caerleon
Constraints	Bushfire (Vegetation Cat 2), Groundwater Vulnerability, Visually Sensitive Land, Sensitive Biodiversity
Total Size of Area (Ha)	313Ha
Size of Residential Zoned Land (Ha)	240.7Ha
Current Zoning	R1 General Residential / R5 Large Lot Residential
Current Minimum Lot Size	450sqm
Remaining Potential	The land has been subdivided but no development has occurred. There is approximately 240Ha of land zoned for residential purposes - R1 General Residential (166.1Ha) and R5 Large Lot Residential (74.6Ha). The minimum lot size for the R1 General Residential is 450sqm and 4,000sqm for the R5 Large Lot Residential.
Recommendations:	
Our recommendation for site	No change is recommended. Caerleon has already been zoned for residential development to meet future demand. The area is well located to maximize use of Council's existing infrastructure in particularly the new Mudgee STP. The area also provides a diverse range of lot sizes. This will ensure a range of housing types are provided to cater for residential demand in the short, medium and long term.
Proposed Future Zoning	R1 General Residential / R5 Large Lot Residential
Proposed Future Minimum Lot	450sqm
Number of Lots Area would yield in total	1,146
Recommended Availability of Lots	2015+

Saleyards (Area 18A)

Area/s Number	18A
Area/s Name	Saleyards
Constraints	Flood liable land (low risk), Groundwater Vulnerability, Sensitive Biodiversity, Heritage
Total Size of Area (Ha)	49Ha
Size of Residential Zoned Land (Ha)	49Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	No development has occurred within area 18A. There is 49Ha of land zoned R1 General Residential that remains suitable for residential development.
Recommendations:	
Our recommendation for site	No change is recommended. This area relies upon already zoned land for residential development and would meet demand for smaller lots over the short to medium term. The area is well located to maximize use of the new Mudgee STP.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	294
Recommended Availability of Lots	2015-2020+

Fairydale Lane (Area 18B)

Area/s Number	18B
Area/s Name	Fairydale Lane
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	16Ha
Size of Residential Zoned Land (Ha)	5.4Ha
Current Zoning	R1 General Residential / RU1 Primary Production
Current Minimum Lot Size	600sqm
Remaining Potential	There are 105 lots in the proposed subdivision of Fairydale Lane.
Recommendations:	
Our recommendation for site	The opportunity exists to develop part of the land within Area 18B from RU1 Primary Production to R1 General Residential and provide a minimum lot size of 600sqm. This would create an opportunity to create smaller lot sizes to cater for a diverse range of housing stock in the market and increase the overall yield on Area 18B. It would also maximize use of Council existing infrastructure.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	105
Recommended Availability of Lots	2015-2020+

Spring Flat (Area 19)

Area/s Number	19
Area/s Name	Spring Flat
Constraints	Groundwater Vulnerability, Drainage
Total Size of Area (Ha)	74Ha
Size of Residential Zoned Land (Ha)	73.8Ha
Current Zoning	RU4 Primary Production Small Lots
Current Minimum Lot Size	20Ha
Remaining Potential	No development has occurred within area 19. There is approximately 73.8Ha of land zoned RU4 Primary Production that remains vacant.
Recommendations:	
Our recommendation for site	A seniors living development is proposed on 22.55ha of land within Area 19. The proposed development relates to the construction of a two hundred and five, serviced self-care dwellings seniors living development. The development also includes a club house and various recreational facilities. A Site Compatibility Certificate was issued by the DP&E pursuant to the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004. Development consent was issued on the 29 April 2010. This development has the potential to meet the increasing demand for seniors living being generated by the district's aging population. These seniors living dwellings will also potentially free up other dwellings in and around Mudgee thus providing a broader supply benefit to Mudgee. If the aforementioned development does not proceed it is recommended the area remain RU4 Primary with a minimum lot size of 20ha for the term medium (10-15 years) in case the take up of new areas to Mudgee's north west (i.e. Caerleon) fail to meet market needs. Should Area 19 be rezoned it could accommodate standard lots or larger lots - depending on future needs in the medium term. Spring Flat extends from the edge of the existing residential zone and may provide an opportunity to provide 2,000sqm or larger lots once other areas have been exhausted.
Proposed Future Zoning	RU4 Primary Production Small Lots
Proposed Future Minimum Lot	2,000sqm
Number of Lots Area would yield in total	15
Recommended Availability of Lots	(2015+ for seniors living)

Former Abattoir Site (Area 20)

Area/s Number	20
Area/s Name	Former Abattoir Site
Constraints	Flood liable land (medium risk), groundwater vulnerability
Total Size of Area (Ha)	144Ha
Size of Residential Zoned Land (Ha)	134.4Ha
Current Zoning	RU1 Primary Production
Current Minimum Lot Size	100Ha
Remaining Potential	There is approximately 134 Ha of land zoned RU1 Primary Production suitable for residential development.
Recommendations:	
Our recommendation for site	It is recommended that Area 20 be rezoned to R5 Large Lot Residential with a 2Ha minimum lot size in the long term. It is anticipated the site can help meet long term demand for 2Ha sites beyond 2035 once other 2Ha areas are exhausted. However, given the proximity of the site to the urban area, consideration would need to be given to any further development as it may need to be connected to reticulated water. Whilst Area 21 is a similar distance from the Mudgee CBD as Burrundulla it is more isolated and less appealing to the market on account of Caerleon and Menah yet to be developed. Depending upon future demand for 2ha lots they could be brought forward to 2025+ or 2030+.
Proposed Future Zoning	R5 Large Lot Residential
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	67
Recommended Availability of Lots	2035+

Putta Bucca (Area 21)

Area/s Number	21
Area/s Name	Putta Bucca
Constraints	Groundwater vulnerability
Total Size of Area (Ha)	68Ha
Size of Residential Zoned Land (Ha)	3.7Ha
Current Zoning	R2 Low Density Residential / RU4 Primary Production Small Lots
Current Minimum Lot Size	2Ha
Remaining Potential	Area 21 is currently undeveloped. There is a total of 68.1Ha of land located within Area 21 comprising 3.7Ha of R2 Low Density Residential and 64.4Ha of RU4 Primary Production Small Lots.
Recommendations:	
Our recommendation for site	It is recommended to reduce the lot size of the R2 Low Density Residential land to a minimum of 2,000sqm. In addition, rezone the existing RU4 Primary Production Small Lots to R2 Low Density Residential with a minimum lot size of 2,000sqm. The increase in density may provide an opportunity to better utilize the extension of sewer infrastructure to the area. Existing and recommended supply of 2,000sqm lots mean Putta Bucca is not needed to meet demand for this lot size in the short to medium term.
Proposed Future Zoning	R2 Low Density Residential
Proposed Future Minimum Lot	2,000sqm
Number of Lots Area would yield in total	272
Recommended Availability of Lots	2035+

Burrundulla / Spring Flat (Area 22)

Area/s Number	22
Area/s Name	Burrundulla / Spring Flat
Constraints	Groundwater vulnerability, sensitive biodiversity
Total Size of Area (Ha)	229
Size of Residential Zoned Land (Ha)	0
Current Zoning	RU1 Primary Production / RU4 Primary Production Small Lots
Current Minimum Lot Size	20Ha
Remaining Potential	Area 22 is currently undeveloped. There is approximately 229Ha of zoned land that remains largely vacant comprising 32.1Ha of RU1 Primary Production (minimum lot size of 100Ha) and 197Ha of RU4 Primary Production Small Lots (minimum lot size of 20Ha).
Recommendations:	
Our recommendation for site	Limited supply and growing demand for 2ha lots over the next 5 to 10 years is likely to trigger the need for more land released that can accommodate 2ha lots. As such it is recommended that part of Area 22 that is subject to a planning proposal be rezoned from RU4 Primary Production Small Lots to R5 Large Lot Residential and provided a minimum lot size of 2ha. Given the proximity of Burrundulla to the urban area, consideration would be required for any future development to be connected to reticulated water. As our recommendation is based on a supply and demand premise it is recommended Council undertake further analysis into costs of providing water and sewer. In the long term (i.e.2035+) the remainder of Area 22 could be rezoned to Residential depending on the town's needs at that time.
Proposed Future Zoning	R5 Large Lot Residential for the land subject to a planning proposal. Remainder of land to retain current zoning in short to medium term.
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	98 (2ha) lots
Recommended Availability of Lots	2015+

Land Adjoining Airport - 55 George Campbell Drive Planning Proposal (Area 23)

Area/s Number	23 (Planning Proposal)
Area/s Name	55 George Campbell Drive (Lot 63 DP 18063)
Constraints	None identified
Total Size of Area (Ha)	16.74Ha
Size of Residential Zoned Land (Ha)	None
Current Zoning	RU4 Primary Production Small Lots
Current Minimum Lot Size	20Ha
Remaining Potential	It is estimated that 60% of the site is vacant with the remaining containing a cherry orchard. The objective of the planning proposal is to seek a reduction to the minimum lot size from 20Ha to 2Ha without changing the existing RU4 Primary Production Small Lots zone.
Recommendations:	
Our recommendation for site	From a demand and supply perspective for 2Ha lots it is not necessary to rezone this land as per the planning proposal. This is based on the analysis undertaken in this Strategy and the recommendations made in relation to Rifle Range Road 3 (Area 7), Broadhead Road (Area 16) and Burrundulla (area 22).
Proposed Future Zoning	RU4 Primary Production Small Lots
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	8
Recommended Availability of Lots	2015+

Options to Accommodate Growth Beyond 2035

There are a number of further options available to council to accommodate demand for new housing beyond 2035, namely Menah, Hill End Road and Spring Flat South.

- Menah - Situated to the north/north west of Mudgee, Menah comprises 220ha of land currently zoned RU4 Primary Production Small. Menah extends from the edge of the existing residential zone and is in close proximity to Mudgee's new STP. Parts of the site are constrained by groundwater vulnerability and sensitive biodiversity. Rezoning this land could provide the opportunity to create over 1,500 smaller residential lots (< 1,000sqm) to cater for future demand particularly once Caerleon is further developed;

- Hill End Road - Hill End Road is situated to the north west of Mudgee and zoned RU1 Primary Production. The 132ha area is in close proximity to Caerleon and existing infrastructure i.e. new Mudgee STP. Larger residential lots (i.e. 2Ha) could potentially provide a buffer between Caerleon to the south, existing larger rural-residential lots to the north (on Castlereagh Highway) and proposed industrial area to the immediate west; and

- Spring Flat South - Situated to the south of Mudgee, a substantial amount of undeveloped land exists west of Spring Flat Road extending south through Bruce road and Hill Sixty Drive. Areas 19 and 22 comprise the northern part of Spring Flat and have been discussed above. The remainder of the area is zoned predominantly R5 Large Lot residential. Constraints include fragmented ownership and drainage. Rezoning this land could help meet demand for a range of residential lot sizes in the long term.

Given the dynamic nature of Mudgee's population growth and housing demand and the amount of undeveloped land already zoned residential it is difficult to provide a meaningful recommendation for the future uses for Menah, Hill End Road and Spring Flat South. Instead it is recommended that Council adopt a 'wait and see' approach to the take up of land in the 22 existing urban release areas before committing to significant infrastructure outlays to service Menah, Hill End Road or Spring Flat South. Regular monitoring of housing supply in Mudgee will assist Council in ascertaining when one or more of these additional areas may be needed to help meet future housing demand.

It is also recommended Council apply the guiding principles outlined at the start of chapter 9 of this Strategy when the time comes to assess the merits of releasing Menah, Hill End Road or Spring Flat South for residential development.

Gulgong Urban Release Areas

The following table provides an overview of the Strategy's recommendations for each of Gulgong's urban release areas.

Table 63 - HillPDA Recommendations for Gulgong's Urban Release Areas and Lot Projections (2015-2035)

Urban Release Area	Location	Recommended Zone and Density of Residential Development	Recommended Minimum Lot Size	Rezoning Required?	Change to Lot Size Required?	Recommended No. of Additional Lots Available
A1	South East Gulgong	R1 General Residential	600sqm	N	N	367
A2	South Central Gulgong	R1 General Residential	600sqm	N	N	67
A3	North West Gulgong - R2	R2 Low Density Residential	2000sqm	N	Y	20
	North West Gulgong - R5	R2 Low Density Residential	2000sqm	Y	Y	80
	North West Gulgong - R5	R5 Large Lot Residential	2ha	N	Y	16
	North West Gulgong - R1	R1 General Residential	600sqm	N	N	130
A4	South west Gulgong	R5 Large Lot Residential	2ha	N	N	22

Source: HillPDA

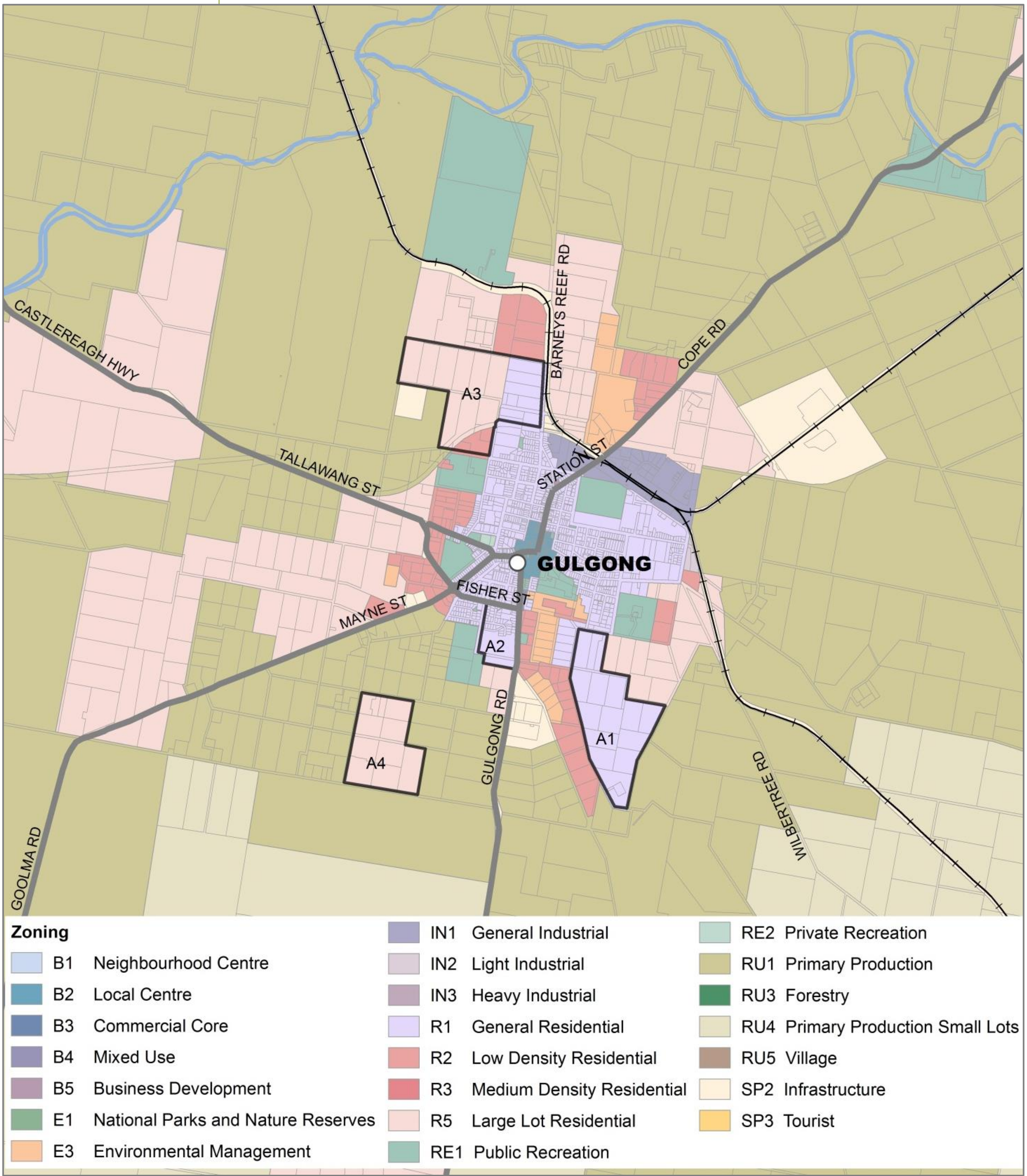
The next table provides an estimated timeframe for land release in each of Gulgong's area.

Table 64 - Recommended Staging of Gulgong's Urban Release Areas (2015-2035)

Urban Release Area	Location	Anticipated Minimum Lot Size	Approximate Maximum Number of Future Lots	0-5 years	5-10 years	10-15 years	15-20 years	20+ years
				2015-2019	2020-2024	2025-2029	2030-2034	2035+
A1	South East Gulgong	600sqm	367	120	40	45	45	117
A2	South Central Gulgong	600sqm	67	45	22	0	0	0
A3	North West Gulgong - R2	2000sqm	20	0	0	0	20	0
	North West Gulgong - R5	2000sqm	80	0	0		0	80
	North West Gulgong - R5	2ha	16	0	0	0	0	16
	North West Gulgong - R1	600sqm	130	0	25	35	35	35
A4	South west Gulgong	2ha	22	22	0	0	0	0
	Total		**702**	187	87	80	100	248

Source: HillPDA

Figure 15 - Gulgong Urban Release Areas and LEP 2012 Zoning



Source: HillPDA and RPS

The following tables provide a summary of the projected demand and recommended supply of lots by housing type for Gulgong's urban release areas. The tables also show the number of lots required as a buffer to ensure adequate capacity exists to accommodate unexpected growth and the time taken to bring new lots to market. By comparing the estimated and required buffer it is possible to determine the trigger points to justify further release of land.

General Residential Lots (450-1000sqm)

Demand for general residential lots (450-1000sqm) in Gulgong's urban release areas is projected to average 16 lots per annum or 82 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 165 and 170 general residential lots available every five years until the year 2035. This level of supply will create a buffer of 83 to 89 lots over that period which is largely sufficient to meet the required 5 year buffer of 82 lots.

Table 65 - Gulgong – Supply, Demand and Pipeline Buffer for General Residential Lots (400-1000sqm)

	Average No. of Lots/Dwellings Required / Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	16	82	82	82	82
Supply - Lots Available		165	170	169	167
Estimated buffer between lot demand and supply		83	89	87	85
Required 5 Year buffer between lot demand & supply		82	82	82	82

Source: HillPDA

Low Density Residential (2000-4000sqm)

Demand for low density residential lots (2,000-4000sqm) in Gulgong's urban release areas is projected to average 2 lots per annum or 10 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be sufficient 2,000-4000 sqm residential lots available every five years until the year 2035. This level of supply will create a buffer of 20 to 50 lots over that period which is sufficient to meet the required 5 year buffer of 10 lots.

Table 66 - Gulgong – Supply, Demand and Pipeline Buffer for Low Density Residential Lots (2000-4000sqm)

	Average No. of Lots/Dwellings Required / Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	2	10	10	10	10
Supply - Lots Available		60	50	40	30
Estimated buffer between lot demand & supply		50	40	30	20
Required 5 Year buffer between lot demand & supply		10	10	10	10

Source: HillPDA

Large Lot Residential (2ha and over)

Demand for larger residential lots 2ha and over in Gulgong's urban release areas is projected to average 1 lot per annum or 5 lots over 5 years. If land is released in accordance with the recommendations of the Strategy there will be between 8 and 22 large residential lots available every five years until the year 2035. This level of supply will create a buffer of 3 to 17 lots over that period which is largely sufficient to meet the required 5 year buffer of 5 lots.

Table 67 - Gulgong – Supply, Demand and Pipeline Buffer for Large Lot Residential (2ha and over)

	Average No. of Lots/Dwellings Required Per Year	0-5 years	5-10 years	10-15 years	15-20 years
		2015-2019	2020-2024	2025-2029	2030-2034
Demand - Lots Required	1	5	5	5	5
Supply - Lots Available		22	17	12	8
Estimated buffer between lot demand & supply		17	12	8	3
Required 5 Year buffer between lot demand & supply		5	5	5	5

Source: HillPDA

The following pages discuss each of Gulgong's urban release areas and our recommendations in more detail.

South East Gulgong (Area A1)

Area/s Number	A1
Area/s Name	South East Gulgong
Constraints	Groundwater vulnerability
Total Size of Area (Ha)	61Ha
Size of Residential Zoned Land (Ha)	61Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	There is 61Ha of R1 General Residential land which is currently suitable for residential development.
Recommendations:	
Our recommendation for site	No change is recommended.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	305
Recommended Availability of Lots	2014+

South Central Gulgong (Area A2)

Area/s Number	A2
Area/s Name	South Central Gulgong
Constraints	None
Total Size of Area (Ha)	15Ha
Size of Residential Zoned Land (Ha)	15Ha
Current Zoning	R1 General Residential
Current Minimum Lot Size	600sqm
Remaining Potential	The part of the area is already subdivided and 24 lots have already been development. The area has capacity for a further 55 lots.
Recommendations:	
Our recommendation for site	No change is recommended. The area's proximity to Gulgong's Town Centre suggests new development should be encouraged in it before other locations.
Proposed Future Zoning	R1 General Residential
Proposed Future Minimum Lot	600sqm
Number of Lots Area would yield in total	55
Recommended Availability of Lots	2014+

North West Gulgong (Area A3)

Area/s Number	A3
Area/s Name	North West Gulgong
Constraints	Groundwater Vulnerability
Total Size of Area (Ha)	76Ha
Size of Residential Zoned Land (Ha)	76Ha
Current Zoning	R1 General Residential / R2 Low Density Residential / R5 Large Lot Residential
Current Minimum Lot Size	600sqm & 10Ha
Remaining Potential	The site is undeveloped. The R2 Low Density Residential lots (10Ha) are located within the south and east of the area while the R5 Large Lot Residential lots are located in the north-east portion.
Recommendations:	
Our recommendation for site	It is recommended the land zoned for R1 General Residential remain unchanged. The land zoned R2 Low Density Residential could permit 2,000sqm as there appears to be a shortage of lots in the size on offer. The remainder of the area zoned R5 Large Lot Residential could be divided between 2,000ha and 2ha residential lots to meet demand in the medium/long term. The Temporary Workers Accommodation (TWA) approved by the LEC is located at 2 Black Lead Lane, Gulgong. The TWA is located north-east of the area. The proposal is for a 400 room TWA and is forecasts to be required for 20 years.
Proposed Future Zoning	R1 General Residential / R2 Low Density Residential / R5 Large Lot Residential
Proposed Future Minimum Lot	600sqm – 2Ha
Number of Lots Area would yield in total	189
Recommended Availability of Lots	2015-2035+

South West Gulgong (Area A4)

Area/s Number	A4
Area/s Name	South West Gulgong
Constraints	-
Total Size of Area (Ha)	43Ha
Size of Residential Zoned Land (Ha)	43Ha
Current Zoning	R5 Large Lot Residential
Current Minimum Lot Size	2ha
Remaining Potential	The land is undeveloped and has capacity for 22 lots
Recommendations:	
Our recommendation for site	No change recommended.
Proposed Future Zoning	R5 Large Lot Residential
Proposed Future Minimum Lot	2Ha
Number of Lots Area would yield in total	22
Recommended Availability of Lots	2014+

APPENDIX A: MUDGEE MAPS[14]

[14] Pursuant to MWLEP 2012 (maps accessed Oct 2014)

APPENDIX B: GULGONG MAPS[15]

[15] Pursuant to MWLEP 2012 (maps accessed Oct 2014)

APPENDIX C: LOCATION OF CURRENT ESTATES

APPENDIX D: HIGH RESOLUTION MAPS

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1. This report is for the confidential use only of the party to whom it is addressed ("Client") for the specific purposes to which it refers and has been based on, and takes into account, the Client's specific instructions. It is not intended to be relied on by any third party who, subject to paragraph 3, must make their own enquiries in relation to the issues with which this report deals.

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6. This report does not constitute a valuation of any property or interest in property. In preparing this report HillPDA has relied upon information concerning the subject property and/or proposed development provided by the Client and HillPDA has not independently verified this information except where noted in this report.

7. In relation to any valuation which is undertaken for a Managed Investment Scheme (as defined by the Managed Investments Act 1998) or for any lender that is subject to the provisions of the Managed Investments Act, the following clause applies:

   This valuation is prepared on the assumption that the lender or addressee as referred to in this valuation report (and no other) may rely on the valuation for mortgage finance purposes and the lender has complied with its own lending guidelines as well as prudent finance industry lending practices, and has considered all prudent aspects of credit risk for any potential borrower, including the borrower's ability to service and repay any mortgage loan. Further, the valuation is prepared on the assumption that the lender is providing mortgage financing at a conservative and prudent loan to value ratio.

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