

Part C Growth Strategy for Upper Lachlan

10. Growth strategy

Based on investigations of environmental constraints, land capability, demand, and community values there are two short term strategies available to accommodate urban and rural growth in Upper Lachlan. These are:

- *Urban development* should be facilitated primarily in areas already zoned for that purpose. This includes all land within existing village boundaries – both vacant and developed areas. Opportunities for infill housing within developed areas can be supported. This approach provides greater housing choice and promotes living close to existing services and facilities. This reflects the needs of declining household sizes and an ageing population.
- *Large lot residential living and rural small holdings* should be focused around the existing Village zones. The future use of rural lands will seek to balance agricultural requirements, environmental constraints and minimise potential for land use conflicts. These areas comprise unserviced lots that will be defined by minimum lot sizes for dwelling entitlements. Prime agricultural lands are a key resource and need protection. The Strategy aims to prevent future fragmentation of these areas.

Beyond these two key themes, the future urban and rural structure and directions for growth are dependent upon a range of variables including:

- Introduction of individual zones for Crookwell that will allow better development control and improve certainty about future land uses.
- The ability for certain under-utilised areas (from an urban development perspective) to be more efficiently subdivided to help cater for population growth.
- Continued use of the Village zoning for the other settlements to protect these localities. A comprehensive development control plan will ensure future development within Village boundaries is appropriately designed and land use conflicts minimised.
- The introduction of a Village zone for Jerrawa will provide greater certainty for this village.
- Servicing for Taralga will be the key growth determinant for this village.
- Support for Main street commercial activity for Crookwell, Taralga, Gunning and the villages via development control provisions.
- Future plans associated with key sites across the local government area will influence the rate and composition of growth across the Upper Lachlan.

The primary choice for Council and the community in terms of balancing growth is whether to:

- direct new urban development to Crookwell (allotments generally 800+ square metres) which has the advantage of being close to the centre of Crookwell and other facilities and services (including Crookwell Hospital and commercial centre), and/or

- constrain future growth within towns and villages and further promote large lot residential growth (allotments generally greater than 4,000 square metres), which has the effect of retaining the existing low scale residential density.

The matters identified above define the Strategy objectives and approaches discussed below.

10.1 Growth strategy objectives

10.1.1 Purpose of the growth strategy

The purpose of the Strategy is to identify environmental, social and economic opportunities and constraints and weigh these against land demand and supply pressures for Upper Lachlan to 2020. The Strategy considers a variety of options which have been informed by community feedback.

The underlying purposes for preparing the growth strategy are to:

- Provide strategic planning direction – the Strategy is a way for Council to be proactive and achieve social goals and ensure a sustainable future.
- Provide a decision making framework based on clarity, certainty and accurate data – once the Strategy is implemented through the Local Environmental Plan, it will help Council to determine development proposals within a strategic framework.
- Provide Council greater independency in local planning – by reflecting State government policies, the plan will enable increased delegation of development decisions to Council.
- Ensure Council is responsive to change and accountable to the local community – the Strategy has been prepared through a consultative process and is based on objectives and values identified by the community.
- Determine the optimal location for development – the Strategy ensures that future development is appropriately located and sensitive to surrounding land uses and agricultural production.
- Achieve infrastructure certainty – the Strategy will assist Council in setting developer contribution levels and plan with certainty future infrastructure and service needs.
- Achieve more livable communities – the Strategy will promote vibrant, high amenity communities.

10.1.2 Objectives

The Strategy reflects the values of Upper Lachlan community. The following objectives have been derived from community and stakeholder consultations.

The Strategy objectives are to:

Environmental

- Ensure a high level of water quality by:
 - preserving creek lines
 - avoiding incompatible uses within drinking water catchment areas

- avoiding wetlands
- avoiding drainage lines.
- preserve remnant native fauna habitat
- promote better land management, particularly noxious weed control
- reduce runoff and erosion by avoiding steep land and best practice farming techniques
- maintain landscape quality in the area by:
 - avoiding development on ridge lines
 - retaining vegetation along roadways
 - preserving the visual quality of access routes into/ out of towns and villages
- retain prime agricultural areas and minimise opportunities for adverse land use impacts
- ensure growth is consistent with the strategy
- preserve rural landscape by maintaining established trees as part of the future landscape.

Social

- improve primary and secondary roads which link towns and villages
- upgrade water supply infrastructure
- increase and improve recreational facilities
- improve aged care services to meet current demands
- improve sewage infrastructure
- upgrade telecommunications infrastructure.
- provide for new housing areas when servicing is available
- design for vibrant communities by:
 - creating urban residential development within towns and promote integrated land use layouts
 - provide for recreational activities including pedestrian and bike accessibility
 - ensure accessibility to central community facilities
- ensure connectivity and legibility (grid pattern)
- recognise natural area boundaries
- provide a mix of land sizes and uses
- provide designs responsive to the needs of older age groups
- provide some small lot sizes to provide for sustainable growth
- ensure good solar access in subdivision and dwelling designs
- ensure high quality designs
- incorporate sustainable utilities (for example tank water, septic, biocycle systems)
- emphasise preservation of the rural landscape and character of the area in development decisions

- provide village housing that is within walking distance to local shops.

Economic

- ensure efficient planning of communities:
 - locating housing close to existing facilities such as schools, hospitals and recreation facilities
 - reducing infrastructure costs (for example, sewage location and impacts)
 - providing new facilities in a cost effective manner.
- protect and support high quality agricultural land uses by:
 - providing adequate buffers between agriculture and residential land uses; and
 - avoiding development on fertile tertiary basalt soils
- promoting development in areas of low agricultural value or less alternative use
- protect the ongoing viability of Crookwell as the primary commercial and administrative centre for the Upper Lachlan .
- support regional economy by:
 - preserving key industries including wool, potatoes, honey, eggs
 - enhancing tourism particularly farm tourism
 - supporting the image of the Upper Lachlan as providing high quality produce
 - preserving the opportunities for employment growth.

Key approaches to achieving environmental, social and economic objectives:

- maintaining an integrated community and avoiding creation of isolated settlements by:
 - avoiding unplanned development
 - reinforcing existing village boundaries.
- create opportunities for large lot residential lifestyles near existing towns and villages
- provide for mixed uses including residential and commercial
- design to efficiently provide a full range of services – water, electricity, communications etc.

10.2 Constraints to Urban Development

Assessment results of environmental attributes applicable to Upper Lachlan are identified in Table 10-1.

Table 10-1 Significant Constraints Assessment

Environmental Attribute	Strategy Approach	Constraints Issues
Land resources	Areas with a slope exceeding 10 percent. Urban development is feasible on slopes greater than 20 percent, however this conservative benchmark is reasonable for the purpose of identifying a broad development envelope. Due to engineering requirements and increased runoff, the ability to accommodate on site effluent disposal and property management become issues.	Areas of contaminated land (subject to further assessment). Given historical grazing activity, the extent of land affected is not likely to be significant or extensive. Additional fieldwork is required to establish where rock outcrop / subcrop and highly erodible soils that may exist.
Agricultural Lands	Areas identified primarily within rural land capability classes I, II and III should be protected from urban development to ensure productive soils are retained for future agricultural production.	Land use conflicts associated with agricultural operations occur where sensitive land uses including residential and rural residential development adjoin or are close to productive areas. Agricultural operations have the ability to adversely affect rural serenity and vistas where sensitive land uses are inappropriately located.
Large lot residential	Large lot residential development will be permitted in designated areas surrounding existing towns and villages and where servicing is available. Further fragmentation of rural areas will be limited to minimise potential for land use conflicts and protect prime agricultural areas.	Large lot residential densities will vary across the local government area dependant on proximity to existing villages, services and utilities. Large lot residential development will be managed via development control provisions to ensure the objectives of this zone are fulfilled.
Surface and Groundwater Hydrology and Quality	Flood modelling should be undertaken for urban areas to identify flood land. A minimum 40 metre buffer either side of creek and river lines provide opportunities for water sensitive urban design in the treatment of stormwater flows from new development. Areas identified within the 1 in 100 year flood event would be a significant constraint to development.	Flood modelling would identify the severity of flood risk to urban areas. Anecdotal data is available, however clearer modelling would be required for development seeking approval in flood prone areas. Groundwater surrounding Crookwell and Taralga needs to be assessed to determine groundwater location and potential. 'No-build' areas at the top of ridge lines would allow safe recharge to groundwater resources.
Flora and Fauna	Areas which have been identified as having endangered ecological communities present a significant constraint. These places include: State and National Park areas. Riparian and vegetation corridors. Some roadside vegetation.	Endangered ecological communities need to be protected. Downstream development effects must not impact on sensitive ecological communities. Vegetation corridors should be preserved and protected against fragmentation.
Heritage	Areas identified as being archaeologically significant in	Areas of archaeological potential should undergo test excavation

<p>potential</p>	<p><i>Figure 7.14</i> present a constraint to development. These areas would require detailed heritage assessment.</p> <p>Items of European heritage should be protected and integrity retained. Future proposals to alter heritage items should be sensitive to the character and style of the original form and design.</p> <p>Heritage controls will be included in the forthcoming development control plan to ensure that the integrity of heritage items are retained in light of future development. Heritage advisor to formally comment on all proposals likely to materially affect items of European Heritage.</p> <p>Any impact to an identified item of European heritage would be referred to the Heritage Branch of the Department of Planning.</p>	<p>prior to any clearing or earth works. Referral to the Department of Environment and Conservation should be made for all works that may affect items or artefacts of Aboriginal heritage.</p>
<p>Bush Fire hazard</p>	<p>Areas east of Taralga and some villages are located within bushfire prone areas.</p>	<p>Bush fire hazard is not a significant constraint to development as areas surrounding Crookwell, Gunning and Taralga are generally bushfire prone free.</p>
<p>Visual and Scenic Quality</p>	<p>Areas along ridgelines are highly visible and can have scenic values easily damaged by inappropriate development. A 'no-build' corridor (including significant native tree planting) would help to address this issue.</p> <p>Wind farms have the potential to affect ridgelines. These are generally not subject to local environmental planning instruments. Development control provisions would be required to protect ridgelines where possible and would be considered as part of any proposed development determined by the Minister for Planning.</p> <p>Dwellings on the main roads into towns and villages can be visually prominent. Care will be needed with the siting and design of dwellings to avoid the appearance of "ribbon" development.</p>	<p>Exempt and complying development provision together with design guidelines should be developed which limit the visual impact of new buildings.</p> <p>This includes the location of sheds and reflectivity of materials used.</p>
<p>Urban Infrastructure</p>	<p>Provision of a new sewage treatment plant is required at Taralga. An urban development buffer in accordance with water Directorate buffer guidelines would be required around the facility site.</p>	<p>Improvements are required in existing infrastructure including electricity, medical and health facilities, water storage and pressure, access to natural gas, sealed roads, telecommunications and recycling facilities. These key infrastructure issues would need to be addressed within each of the towns and villages.</p> <p>Future development would need</p>

		<p>to be considered to determine the capacity to connect to reticulated utilities including water, sewer and power.</p> <p>Large lot residential development will require guidance in provisions to be made via a development control plan for on-site disposal and water supply where access to utilities is not possible.</p>
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10.3 Key Community Themes

Key matters identified by the community are addressed below. Key issues were also obtained from meetings with the former Crookwell Regional Advancement Group (CRAG), youth groups and local farmers (arranged with the assistance of NSW Farmers) which identified key land use and planning matters.

The key community themes used to shape the direction of the Strategy included:

- Ensuring that infrastructure services, utility capacity, soil, slope, contamination, flora, fauna, community services, open space and heritage clearly define the basis for growth.
- Determining whether existing town boundaries have the capacity to accommodate future growth and limiting need to expand beyond these boundaries.
- Preserving and protecting natural and built heritage values.
- Creating more employment opportunities in Upper Lachlan and identifying designated areas for commercial and industrial developments.
- Advantages and disadvantages of infill and fringe development.
- Strengthening the commercial focus of Main streets and creating a sense of place.
- The provision of current entertainment and cultural facilities.
- The promotion of recreation and tourism in the Upper Lachlan.
- Identification of minimum rural lot sizes and locations for intensive rural and rural residential development.
- Ability for new developments to be self-sufficient (e.g. water storage and sewerage infrastructure).
- Minimise land use conflicts arising from new or existing land uses and developments.

10.3.1 Youth issues

A youth focus group meeting was held with students representing Crookwell Public School, Laggan Public School and St Marys Catholic School and the Crookwell Youth Centre. The discussion focused on their likes and dislikes about the area and how they see their area in the future.

Key issues identified included:

- the need for more sporting facilities (e.g. athletics fields and basketball facilities)
- establishment of an indoor heated pool
- establishment of a skate park that is safe for everyone to use

- methods of saving water
- more affordable public transport
- more youth activities (e.g. cinemas, sporting clubs and discos)
- many felt that they would need to move out of the area for employment or further education
- to provide more activities for youth during the Country Weekend.

Community and youth issues and concerns vary across the LGA. Detailed identification of issues for towns and villages has been provided within the *Upper Lachlan Strategy – 2020 Vision Community and Stakeholder Report*. Growth and development of Upper Lachlan is a key theme throughout all consultations while ensuring this growth is sensitive to the low scale and underlying rural character of Upper Lachlan.

10.4 Demand and supply for residential land

Future growth within Upper Lachlan will be subject to a range of environmental, economic and social factors that will influence population and growth dynamics. Population growth and economic activity must be sensitively accommodated without detracting from existing natural and social assets. Towns and villages have an important function in rural areas and provide a commercial and social focus for these areas. The determinants of housing land demand and supply to 2020 are identified below.

Demand

- availability of rural living options
- whether demand is locally generated or from outside the LGA (in-migration)
- regional market for residential land
- national economy and related financial factors
- land price and price differences between urban and rural lots and between adjoining LGA
- accessibility and location
- amenity and site area.
- one method of calculating demand is based on the following land demand model:
 - projection of population increase from existing demographic characteristics
 - estimation of future average household size based on historic trends
 - calculation of the number of dwellings required
 - division of estimated demand into types of residential lots
 - calculation of land requirements for future development.

Calculating land demand depends on the take-up rate of residentially zoned land. Due to the amalgamation, Council does not currently possess this data. Forecasts can be distorted by building activity trends, supply that does not adequately match consumer preferences and fluctuations in growth between census periods.

Supply

An estimate of the current stock of available rural and residential land was undertaken by looking at two key elements:

- *Existing vacancy* – the proportion of urban and rural allotments that have unoccupied dwellings.
- *Existing zoned stock* – the number of lots zoned for residential/rural residential purposes that are ready for sale or occupation and are of a suitable rural or residential size.

Based on the above considerations, capacity is available for infill development and new residential areas within all towns and villages across Upper Lachlan.

Areas within Crookwell, south of Goulburn Street provide one location for future expansion given existing development approvals and access to the town centre. However, further residential expansion could also occur south of Brooklands Street east of the Crookwell River which may also accommodate residential development. It is important to note that these areas are currently included in the Village zone and therefore already have residential potential.

Urban expansion principles

To achieve well-located new development areas, the following principles have been considered:

- *Assessment of land suitability* – based on an assessment of all existing and potential land uses.
- *Minimise land use conflicts* – locating growth which minimises conflicts that would affect the current and future viability of other land uses, such as mining, agriculture, industry, forestry and tourism.
- *Impacts on sustainable agriculture* – locate development areas where this will minimise increases in agricultural land values or incrementally reduce the lot size of prime agricultural lands.
- *Land capability* – locate development areas on land generally free of hazards such as flooding, contamination, erosion, subsidence, or land slip. Avoid areas susceptible to salinity, such as land with a high water table, or land subject to waterlogging.
- *Access to water resources* – consider adequacy of water supply and locate large lot residential development where on-site effluent disposal would not lead to pollution of waterways or degradation of soil and vegetation.
- *Biodiversity* – locate development areas where they would not endanger threatened species or critical habitat and minimise modification to natural ecosystems, habitat loss and fragmentation.
- *Create livable communities* – locate residential development where people want to live including convenient access to facilities and services having regard to the existing settlement pattern, efficient service provision, road access and the protection of cultural and rural heritage
- *Existing infrastructure* – locate development areas which complement the capacity of the existing road network, and the ease with which utility services can be provided.
- *Community wellbeing* – locate development areas near social infrastructure.

10.5 Key growth factors

Four primary factors are likely to influence the location of future growth areas within Upper Lachlan. These factors include protection of agriculture, water, land use harmony and biodiversity conservation.

Protection of agriculture

Consistent with the *Policy for Protection of Agricultural Land* (Department of Primary Industries 2004), rural and urban activities can assist in protecting prime agricultural areas by:

- promoting continued use of agricultural land, particularly prime crop and pasture land
- avoiding land use conflicts particularly near urban areas
- protecting natural resources used by agriculture
- protecting other values associated with agricultural land that are of importance to local communities, such as heritage and visual amenity
- providing diversity of agricultural opportunities, including specialised agricultural developments
- allow for value-adding and integration of agricultural industries into regional economies.

Water

Consideration must be given to whether town water can be connected to new urban and large lot residential areas. There is a risk of possible contamination by septic systems of aquifers used for domestic or stock purposes.

Residential development not connected to reticulated sewage treatment facilities should be capable of disposing all effluent waste on site in an environmentally sustainable manner. Septic systems are not always suitable in colder climates with low seasonal evaporation, where soils are of low permeability or where the water table is close to the surface. Septic systems need to be buffered from waterways.

Land use harmony

The following offers some methods of locating urban and rural residential development with minimal conflict.

- Locate residential development away from roads leading to mines or intensive agriculture.
- Disperse residential development within urban areas and maximise potential for infill development where appropriate.
- Use existing natural and man made barriers, such as mounds and roads, to create ready-made buffers between residential development and adjoining incompatible uses.
- Locate residential development near or adjoining existing services and facilities including health and medical facilities.
- Avoid development which will reduce opportunities for future urban expansion.

Conserving biodiversity

Residential development has the ability to conserve biodiversity by:

- including areas with biodiversity value within development master plans so they will be managed and protected through appropriate planning and urban design
- preserving natural areas that otherwise may be at risk from inappropriate or environmentally damaging land uses.

In identifying key vegetated areas, Councils may consider targeting threatened species in their LGA for protection against future development. This will enable:

- areas of conservation significance to be avoided
- areas with conservation value that, with good design, are compatible with development areas without any conservation importance.

10.6 Growth targets

10.6.1 Population growth targets

Population targets underpin the Upper Lachlan Strategy vision for sustainable growth. Population targets provide clear direction and certainty for private and public investment, by signalling Council’s commitment to planning for growth in defined areas.

Growth targets will require careful planning to ensure that Upper Lachlan achieves appropriate and sustainable growth that does not detract from current environmental, social or economic assets.

Table 10-2 provides a series of growth scenarios for Upper Lachlan and takes into consideration recent dwelling approvals, in and out migration trends since 2006, and rural residential approvals.

Table 10-2 Upper Lachlan growth scenarios

Year	Population @ 0.8 percent	Population @ 1.0 percent	Medium forecast @ 1.5 percent	High forecast @ 2.5 percent
2006	7,329	7,329	7,329	7,329
2007	7,388	7,402	7,439	7,512
2008	7,447	7,476	7,551	7,700
2009	7,506	7,551	7,664	7,893
2010	7,566	7,627	7,779	8,090
2011	7,627	7,703	7,895	8,292
2012	7,688	7,780	8,014	8,499
2013	7,749	7,858	8,134	8,712
2014	7,811	7,936	8,256	8,930
2015	7,874	8,016	8,380	9,153
2016	7,937	8,096	8,506	9,382
2017	8,000	8,177	8,633	9,616
2018	8,064	8,259	8,763	9,857
2019	8,129	8,341	8,894	10,103
2020	8,194	8,424	9,028	10,356

Table 10-2 provides a sensible range of growth scenarios to 2020. These reflect local recovery and a new interest in development which contrasts with the pre 2001 trends of population decline.

The population estimates in Table 10-2 have been prepared on the basis of continued development within towns and villages as well as continued rural residential development (5 dwellings per annum). Development rates have been prepared on the basis of existing development data.

Existing development activity within Upper Lachlan demonstrates that investment and development interest is high, however, it takes time for land holders to activate approvals and proceed to the construction phase.

There are urban areas within Upper Lachlan that have the capacity to absorb population growth through infill housing and achieve moderate increases in residential density. Housing is both available and affordable with median house prices in regional NSW significantly lower than metropolitan, coastal and urban fringe areas. Housing affordability is therefore a key growth driver.

Population growth for Upper Lachlan will be determined by a variety of factors including affordability, access to services and utilities, availability of employment in a variety of market sectors including managerial, administrative, services, trades and unskilled.

10.6.2 Upper Lachlan in the year 2020

With targeted expansion together and successful promotion of Upper Lachlan, it is possible that the population would be capable of reaching 9,000 residents by 2020.

This represents a total growth of 1,400 persons at an average annual growth rate of 1.5 percent. Forecasts are based on conservative estimates based on the medium forecast identified in Table 10-2 and expectations that the relative affordability within Upper Lachlan remains. This scenario also assumes that existing rates of dwelling and rezoning approvals continue to be realised over time. It is expected some in-migration from surrounding regions and LGA will continue to take advantage of property affordability and availability of water.

Affordability for first home buyers and metropolitan area purchasers provides significant local and regional benefits, including:

- stimulating additional local economic development including investment and employment
- developing a population base to maintain and improve infrastructure and services
- addressing skill shortages
- creating more diverse and vibrant local communities.

However, housing affordability, independent of other factors is not sufficient to attract new and younger populations to Upper Lachlan. Housing affordability is one of many factors that influence dwelling choice. Other key factors include access, employment opportunities, service provision and lifestyle. An increased awareness of the opportunities available in Upper Lachlan must also be promoted to attract population and investment.

Growth within Upper Lachlan will generally be achievable where balances between employment and lifestyle may be realised together with the provision of appropriate services and infrastructure to support a growing population base. Council, together with supporting agencies have a primary role in providing the most appropriate environment and infrastructure for social and economic development including facilitating the delivery of

services such as education and health and enhanced lifestyle factors such as cultural and recreational facilities.

Key areas that would promote and influence growth in Upper Lachlan include:

- infrastructure
 - transport linkages
 - environmental management
 - investment and job creation
- access to services
 - coordinated delivery of Government programs and services to regional NSW to enable community and economic development
- attracting particular sections of the community where a skill shortage has been identified
- development of industry, whether particular industry clusters or broad cross section
 - preparation of a regional business investment program to attract industry to Upper Lachlan and adjoining Local Government Areas
- marketing and promotion of the Local Government Area
 - increased awareness of rural areas and existing opportunities and lifestyle characteristics including housing affordability, sense of community, family and community oriented lifestyle.

The impact that population change will have on towns and villages needs to be identified. Community consultation undertaken as part of the Strategy preparation has shown that the desire for further growth is not shared by all due to the potential to adversely affect the rural and lifestyle characteristics.

Future growth within Upper Lachlan must therefore be sensitively planned to ensure a sensible and balanced approach.

10.6.3 Dwelling Estimates

Table 10-3 illustrates the number of additional dwellings needed by 2020 to meet the population growth targets identified earlier (based on the medium growth rate).

Table 10-3 demonstrates that based on conservative estimates of 1.5 percent growth across the Upper Lachlan Shire to 2020, approximately 851 new dwellings would be needed. Over half of the new dwellings would be located at Crookwell.

Table 10-3 Dwelling forecasts (additional dwellings required)

Year	Crookwell	Gunning	Taralga	Villages (large lot residential)
2006	1,580	843	132	79
2007	1,613	860	135	81
2008	1,647	878	137	83
2009	1,681	896	140	84
2010	1,716	914	143	86
2011	1,752	933	145	88
2012	1,787	952	148	90
2013	1,824	971	151	92
2014	1,861	990	154	94
2015	1,898	1,010	157	96
2016	1,936	1,030	159	98
2017	1,975	1,050	162	100
2018	2,014	1,071	166	102
2019	2,054	1,092	169	104
2020	2,094	1,113	172	106
Total per town/village	514	270	40	27
Total Upper Lachlan				851
Assumptions:				
Occupancy rate:		Net migration:		
<ul style="list-style-type: none"> ▪ 2.0 persons per dwelling 		<ul style="list-style-type: none"> ▪ 5 dwellings per annum (10 persons) to Crookwell 		
Assumed dwelling approvals:		<ul style="list-style-type: none"> ▪ 1 dwelling per annum (2 persons) to Gunning 		
<ul style="list-style-type: none"> ▪ Crookwell: 20 dwellings per annum 		<ul style="list-style-type: none"> ▪ 1 dwelling per annum (2 persons) to Taralga 		
<ul style="list-style-type: none"> ▪ Taralga: 5 dwellings per annum 		<ul style="list-style-type: none"> ▪ 3 dwellings per annum (6 persons) to villages/rural areas 		
<ul style="list-style-type: none"> ▪ Gunning: 5 dwellings per annum 				
<ul style="list-style-type: none"> ▪ Large lot residential: 5 dwellings per annum 				

The dwelling demand in Table 10-3 demonstrates growth arising from a constrained land supply in adjoining regions, international migration, changing demographic characteristics including smaller households and more lone person households. This forecast growth rate translates to a residential land demand of approximately 150 hectares. It is expected that approximately 20 additional hectares would be required within Upper Lachlan for employment purposes to meet the employment needs of the new population.

Forecasts are focused on reinforcing existing town centres to minimise costs associated with servicing growth demands. Concentrating growth around existing centres supports existing community and commercial services and facilities and promotes a sensible and efficient approach to growth.

Connectivity between major urban areas including Goulburn, Sydney and Canberra by road and public transport will remain a key issue that would need to be resolved via a strategic road and transport improvement plan between Upper Lachlan, surrounding LGA and the State government. Access to services and facilities will be a key determinant in attracting residential and economic growth.

11. Growth areas

11.1 Urban growth areas

The Strategy provides a basis for preserving the options for the Upper Lachlan to meet the long term urban and rural growth needs. The new local environmental plan consolidates the existing statutory planning framework. The Strategy provides the context for future zonings.

11.1.1 Crookwell

Crookwell will remain the primary living and employment centre for Upper Lachlan. Based on detailed assessment of Crookwell, the Strategy introduces individual site zoning based on the land use zones specified under the Standard Instrument.

Figure 11-1 identifies the key growth areas for Crookwell.

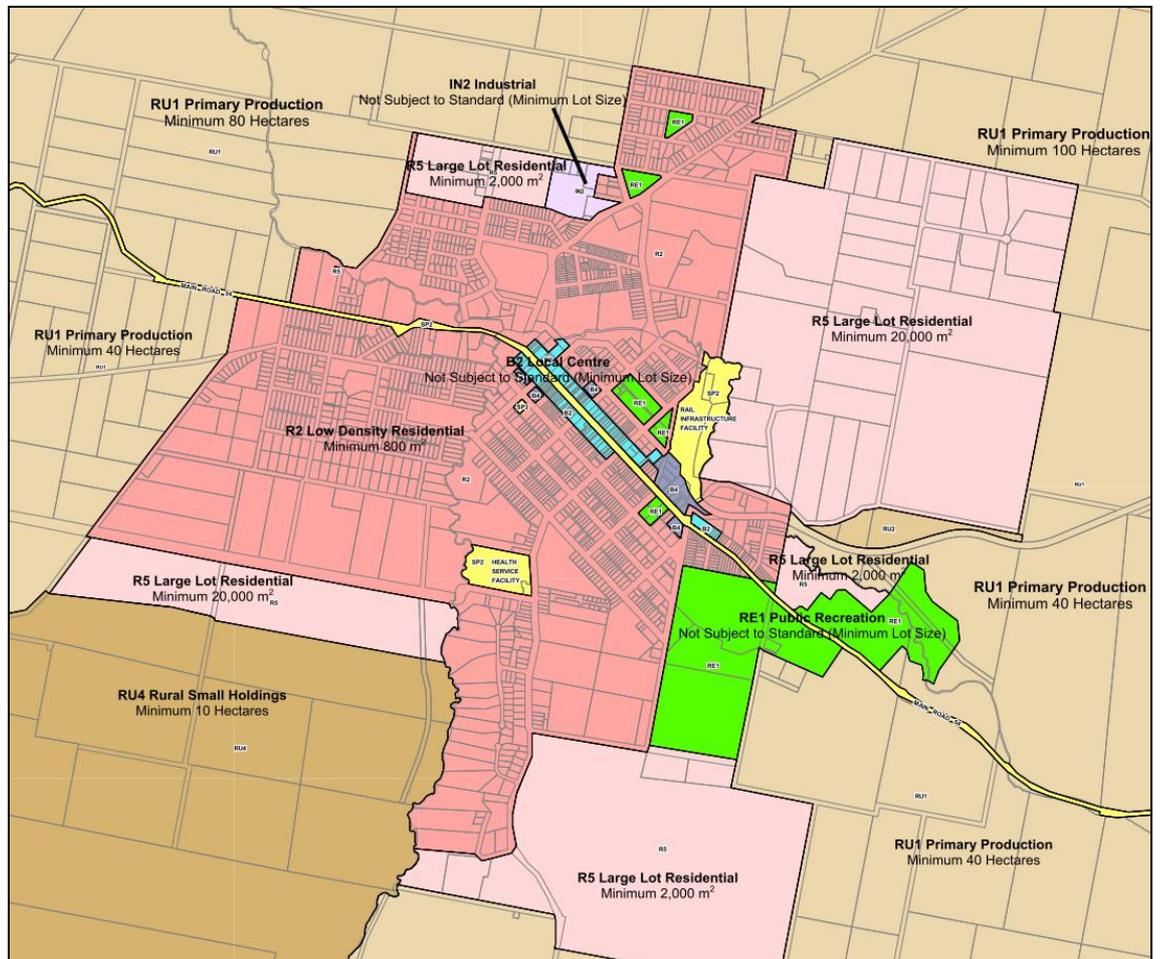


Figure 11-1 Crookwell growth areas

Figure 11-1 identifies residential, commercial, light industry, large lot residential, rural land uses including rural small holdings.

The balance of the Village includes a variety of land use zones including commercial, recreational and mixed uses.

Land use options

Council is currently experiencing pressure within Crookwell for additional residential development including large lot residential. Growing demand also exists for employment uses to attract industry within Crookwell and to encourage increased commercial and retail variety. The Strategy focuses on Crookwell as the commercial and administrative centre for Upper Lachlan. This approach is promoted by zoning areas along Goulburn Street for commercial and retail uses whilst identifying key sites along McIntosh Street for light industry and associated uses.

Although Crookwell has capacity for growth, this capacity is defined by existing utilities particularly water, energy and telecommunications. As the population within and around Crookwell grows, demand for more reliable utilities is likely to increase to meet the expectations of incoming communities. The provision of additional facilities and services in the village, including recreation and aged care facilities, as well as demand for employment generating activities (e.g. service and light industries) will be critical to attract further growth.

Commercial land uses would be limited to the central core of Crookwell along Goulburn Street. This will reinforce the function of the main street and reduce potential for commercial and associated uses to impact on residential areas. This will also increase certainty for commercial tenants as the objectives of this zone will be designed to accommodate commercial and retail functions. Uses will also be guided by development control principles that would encourage future uses to incorporate sound design outcomes.

While there are a number of large parcels of undeveloped land on the southern and western edges of Crookwell, rezoning will be needed prior to any change in land use. These investigations will take the form of specific local environmental studies.

Some areas beyond the existing Village Zone have been recommended for large lot residential and rural small holdings to provide for future expansion of Crookwell.

Employment land

Community and stakeholder consultation has identified the need to accommodate future employment uses within Crookwell. Currently, employment land uses are scattered across Crookwell. Light industrial operations are currently located within commercial and residential areas and present the potential to result in land use conflicts. The Strategy aims to rectify this situation through uniformly applying zones that will enable a variety of land uses whilst minimising land use conflicts and incompatible land uses locating adjacent to one another.

Employment land uses require access to core utilities including water, energy and sewerage disposal. Providing ready access to these utilities is an important basis for encouraging investment in Crookwell.

Land south of McIntosh Street between Clifton Street and King Road presents a good location for a light industry zone. This area would minimise exposure to sensitive land uses and would be subject to detailed development controls to minimise impacts to residential amenity. The area would formalise existing light industrial activities including the SES operations and warehousing.

Investigations would be required to determine the optimum road link to Goulburn Street to minimise residential impacts and remove the need for heavy vehicles to use Goulburn Street.

New areas for employment uses outside of the existing Village zone would require a detailed environmental assessment to be undertaken to ensure environmental implications are acceptable and in-keeping with the forward planning for Crookwell. In this regard, an industrial lands study is recommended to identify land suitable for industrial development near Crookwell.

Residential and large lot residential land

Large lot residential areas surrounding Crookwell would have a minimum lot size ranging from 2,000 square metres to ten hectares. However, once subdivided and developed for this use, it would be difficult to re-consolidate and redevelop this land to meet future needs of Crookwell where higher densities may be required. To minimise potential for inappropriately low densities, a sufficient supply of residentially zoned land will ensure adequate supply beyond 2020. This approach would also ensure investment opportunities for residential development would be satisfied and will help to maintain affordability.

Further investigation is required to determine the suitability of proposed large lot residential uses. In particular, connections to reticulated water and sewer systems would need to be clarified. Servicing of these sites would be developer funded.

Following further investigations, detailed subdivision layouts and densities may be derived. Sites may also be land-banked for the purpose of a future large scale large lot residential estate or subdivided and developed in such a way that they can be subdivided in the future as required.

Planning for large lot residential development will ensure that prime agricultural lands around Crookwell will be retained for agricultural purposes with the ability to strengthen the local economy and employment opportunities.

Several large lot residential allotments immediately east of Crookwell sewage treatment plant are located within the existing odour zone and therefore may be affect future land uses on these sites. As there have ongoing improvements made over time to the plant, the odour zone may now have a reduced odour impact zone. An odour study would need to be undertaken as part of any statement of environmental effects and would need to be consistent with a Level 2 odour impact assessment outlined within the NSW EPAs “Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in New South Wales”. The NSW EPAs “Draft Odour Guidelines for the Assessment and Management of Odour from Stationary Sources in New South Wales” and “Environmental Guidelines: Solid Waste Landfills” would each be referred to as required.

In identifying the future expansion and land zoning for Crookwell, a series of environmental criteria were considered. The criteria addressed are defined below with identified areas detailed in *Table 11-1*.

Broad land use criteria

- capacity for on-site water storage
- availability of infrastructure and town utilities
- presence of environmentally sensitive lands
- protection of riparian corridors
- degree of bushfire risk
- presence of mineral and extractive resources

- proximity to town bores
- location and proximity to Sydney Catchment protection area.

Site specific land use criteria

In identifying future land uses and areas for expansion, the following environmental constraints were avoided:

- sites indicating potential for high soil erosion and salinity
- heavily vegetated sites
- contaminated sites
- unsuitable soil landscapes
- flood prone sites
- bushfire prone sites
- sites with known threatened species and/or critical habitat
- sites with known Aboriginal or European heritage significance
- slopes greater than 10 degrees for large lot residential living

As part of the Strategy implementation at Crookwell. Table 11-1 defines the land use and development intensity that have been considered

Table 11-1 Opportunities and development intensity – Crookwell

Land use Area	Land use options
<p>West Crookwell – R2 Low Density Residential</p>	<ul style="list-style-type: none"> ▪ This area is relatively flat and unconstrained and is currently capable of residential development under the village zoning. ▪ Flood potential along the eastern and northern boundary of this area along the Crookwell River. ▪ 40 metre riparian buffer zone either side of Crookwell River to protect ecologically sensitive areas. ▪ Rural small holdings proposed south of McDonald Street to provide appropriate transition to residential area from rural areas. ▪ Good road access via Grabben Gullen Road. ▪ Good access to main street commercial area. ▪ Pleasant rural vistas south across agricultural areas. ▪ Variety of allotment sizes may yield differing residential products. ▪ Opportunity for bike and pedestrian shared-way into commercial centre. ▪ Capable of connection to town utilities including energy, communications, reticulated water and sewer systems. ▪ Relatively free of vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Residential amenity would be high given relative distance to insensitive land uses. ▪ Development controls to guide development design and protect residential amenity and town aesthetics.

	<ul style="list-style-type: none"> ▪ Established road pattern with new development to seal roadway where currently unsealed. ▪ Limited identified European and Aboriginal heritage. ▪ McDonald Street provides an appropriate buffer to proposed rural small holdings with buffer to be augmented south of McDonald Street.
<p>North Crookwell – R2 Low Density Residential</p>	<ul style="list-style-type: none"> ▪ This area does possess areas of grade greater than 10 percent however this is limited with the remainder being gently sloping and unconstrained. ▪ This area is currently capable of residential development under the village zoning. ▪ Flood potential along the southern boundary of this area particularly allotments south of Hay Street adjoining the Kiamma Creek. ▪ 40 metre riparian buffer zone either side of Kiamma Creek to protect ecologically sensitive areas. ▪ Good road access via Saleyards Road. ▪ Good access to main street commercial area. ▪ Pleasant rural vistas south and west across rural areas. ▪ Consideration would need to be given to existing dwellings and buffer as appropriate. ▪ Variety of allotment sizes including large allotments nestled amongst smaller subdivisions which would introduce residential densities comparable to surrounding residential areas to the west and north. ▪ Opportunity for bike and pedestrian shared-way into commercial centre. ▪ Capable of connection to town utilities including energy, communications, reticulated water and sewer systems. ▪ Relatively free of significant vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Former saleyards replaced with seniors living building. ▪ Walking distance to future employment precinct along McIntosh Street. ▪ Areas east of Prell Street would be zoned for large lot residential and would result in a lower density than areas west of Prell Street. ▪ Development controls to guide development design and protect residential amenity and town aesthetics. ▪ No internal road pattern and this would need to be established as part of any new development ▪ Limited identified European and Aboriginal heritage.
<p>South Crookwell – R2 Low Density Residential</p>	<ul style="list-style-type: none"> ▪ Much of this area is relatively flat and unconstrained and is currently capable of residential development under the village zoning. ▪ Areas adjoining the Crookwell River present a gradient constraint to development. ▪ Flood potential along the western boundary along the Crookwell River. ▪ 40 metre riparian buffer zone either side of Crookwell River to be implemented to protect ecologically sensitive areas.

	<ul style="list-style-type: none"> ▪ Rural small holdings proposed south of Tulloh Street to provide appropriate transition to residential area from rural areas. ▪ Good road access via Kialla Road and East Street. ▪ Good access to main street commercial area. ▪ Pleasant rural vistas south across agricultural areas. ▪ Large allotment sizes may yield differing residential products. ▪ Opportunity for cycle and pedestrian shared-way into commercial centre via Kialla Road. ▪ Capable of connection to town utilities including energy, communications, reticulated water and sewer systems (need to be verified). ▪ Close to schools and Crookwell Hospital. ▪ Relatively free of significant vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Residential amenity would be high given relative distance to insensitive land uses. ▪ Development controls to guide development design and protect residential amenity and town aesthetics. ▪ Established road pattern with new development to seal roadway where currently unsealed. ▪ Continual residential development would link existing residential areas and recent approvals for residential development. ▪ Limited identified European and Aboriginal heritage. ▪ Tulloh Street provides appropriate limit to proposed residential area, with residential densities decreasing into a R5 Large Lot Residential Zone.
<p>Crookwell B2 Local Centre</p>	<ul style="list-style-type: none"> ▪ Commercial zoning would reinforce the existing commercial function the main street currently performs. ▪ Provides certainty to land uses that currently exist within this area. ▪ Residential development would be permitted, however, only where the ground floor would provide a commercial function. This preserves the commercial nature of the main street. ▪ This area is relatively flat and unconstrained and is currently capable of commercial development under the village zoning. ▪ No flood potential within the commercial core. ▪ Parking and pedestrian facilities exist (seating, lighting) however line marking is required. ▪ Good road to all areas north, south, east and west. ▪ Pleasant rural vistas south west across rural areas. ▪ Minimal opportunity for further subdivision given existing subdivision layout. ▪ Opportunity for cycle and pedestrian shared-way to surrounding areas. ▪ Close to schools and health facilities. ▪ Free of vegetated areas.

	<ul style="list-style-type: none"> ▪ Not impacted by bushfire prone areas. ▪ Development controls to guide development design and protect commercial amenity and town aesthetics. ▪ Fully sealed and kerbed roadway. ▪ Heritage character to be retained with new development to sensitively relate to existing historic buildings. ▪ No Indigenous heritage identified. ▪ Goulburn Street provides direct access to Goulburn. ▪ Some extension of commercial zoning north along Roberts Street to reflects existing uses.
<p>Crookwell B4 Mixed Use</p>	<ul style="list-style-type: none"> ▪ Several zones have been identified, adjacent to the B2 Local Centre Zone. ▪ Mixed uses to enable continuation of commercial function however greater flexibility applied to mixed use zone.
<p>North Crookwell – IN2 Light Industrial area</p>	<ul style="list-style-type: none"> ▪ Light industrial zoning would provide much needed employment areas for Crookwell and would reinforce existing light industrial operations along McIntosh Street. ▪ Would provide certainty to investors providing a broad range of light industry uses. ▪ Surrounding residential land uses would need to protected against operational impacts including noise, odour etc. ▪ Development controls to guide development design to minimise impact to surrounding sensitive land uses. ▪ Connections available to water, energy and sewer. ▪ No flood potential. ▪ Good road access. ▪ Opportunity for cycle and pedestrian shared-way to surrounding areas. ▪ Generally free of significantly vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Limited Indigenous heritage identified.
<p>East Crookwell – R5 Large Lot Residential</p>	<ul style="list-style-type: none"> ▪ This area is undulating and generally unconstrained with part of this area currently capable of residential development under the village zoning. ▪ Large lot residential allotments north of Kiamma Creek shall be a minimum of two hectares to reflect existing large lot residential development. ▪ Large lot residential sites south of Kiamma Creek shall be a minimum of 2,000 square metres and ensure appropriate distance is provided from Kiamma Creek to safeguard against flood risk. ▪ Flood potential along the south western corner along Kiamma Creek. ▪ 40 metre riparian buffer zone either side of Kiamma Creek needed to protect ecologically sensitive areas. ▪ This area to provide sensitive extension to existing rural residential subdivision south of Woodward Lane (proposed within a R5 Large Lot Residential Zone with 2 hectare minimum lot size).

	<ul style="list-style-type: none"> ▪ Good road access via Prell Street and Reservoir Road however internal road network would be required as part of subdivision design. ▪ Good access to main street commercial area via Prell Street and Reservoir Road. ▪ Rural aesthetics and vistas to be maintained where available. ▪ Large allotment sizes may yield differing rural residential products. ▪ Opportunity for cycle and pedestrian shared-way into commercial centre via Prell Street, Reservoir Road and Woodward Road. ▪ Issues associated with water pressure and connectivity to utilities to be resolved. On site effluent disposal would be permitted where reticulated system unavailable. ▪ Developer funded utilities permitted. ▪ Relatively free of significant vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Unlikely to result in land use conflicts given primarily residential land use. ▪ Does not comprise prime agricultural lands and therefore would not diminish the productivity potential of the area. ▪ Development controls to guide development design and protect rural residential amenity and promote a livable community. ▪ No European heritage or Aboriginal heritage identified.
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Remaining areas within Crookwell have been allocated zones which generally reflect predominant land uses. This includes:

- SP2 Infrastructure Zones for uses such as health service facility and rail infrastructure facilities
- RE1 Public Recreation Areas for identified open / recreational space.

Existing land uses would be permitted to continue with existing use rights pursuant to the *Environmental Planning and Assessment Act 1979*. However, future uses prohibited under the local environmental plan would not be permitted and extension or augmentation of the existing use is only permissible for the existing use and no other prohibited use. Further, where an existing use is changed to another use pursuant to the Regulations, the changed use is will no longer be deemed to be an existing use.

Other land uses to emerge include mixed use areas, recreation and special uses. These land uses reflect zoning provisions and objectives as identified within the Standard Instrument and are designed to create spatial uniformity in land uses and minimise potential for land use conflicts between inconsistent uses. Formal application of zonings promotes certainty for land holders, the community and investors.

Crookwell will continue to function as the commercial and administrative centre for the Upper Lachlan. Zoning and expansion to accommodate large lot residential would ensure adequate areas are available to accommodate growth to 2020 while providing a range of urban and rural land products for incoming populations.

Given the agricultural productivity of soils to the south of Crookwell, the intended approach of the Strategy is to improve the ability of farmers to carry out their activities by providing greater certainty and minimising potential for conflicts. These areas are proposed to be

zoned RU1 Primary Production reflect the productivity potential of these areas. This will enable farming pursuits and agricultural land uses and enable farmers to purchase and lease land at prices that are not inflated by urban uses.

11.1.2 Taralga

Taralga will continue as a rural town servicing surrounding rural areas and villages. Based on a detailed assessment of Taralga and its function as a rural centre within Upper Lachlan, the Strategy would retain its Village zoning and introduces areas for large lot residential and rural small holdings.

The existing Village zone will be retained for the urban area enabling a variety of land use zones including commercial, employment, recreational and mixed uses.

Community views about to Taralga demonstrated a willingness to:

- extend the town boundary to the capacity of the sewerage system
- ensure planning is sympathetic to the historic settlement pattern
- promote flexibility in residential lot sizes
- development controls to promote sympathetic design and retain the aesthetic environment of the village
- protect heritage buildings
- improve the economic use of land where utilities are provided
- provide a transition between larger and smaller lots
- define minimum lot sizes

Figure 11-2 identifies the key expansion areas identified for Taralga and aims to retain appropriate use of prime agricultural areas south and north of Taralga and promote large lot residential development where this development may be serviced by the existing utilities.

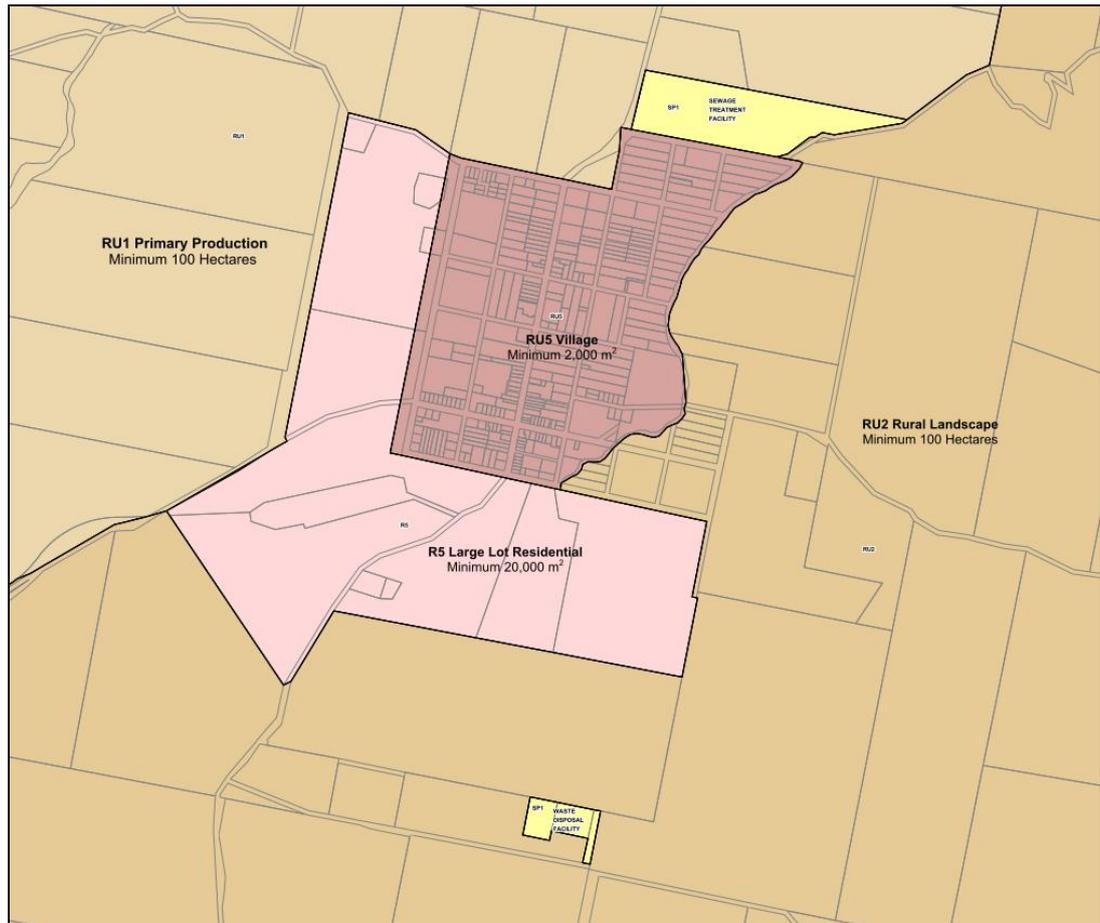


Figure 11-2 Taralga growth areas

Although Taralga has capacity for growth, much of this capacity may be absorbed through infill development within the existing village boundary. This however is limited by existing utilities particularly reticulated water supply, topography and capacity for reticulated sewer services.

As Taralga is currently serviced by individual on-site septic tank systems, growth and expansion of Taralga will be heavily reliant on the construction of a reticulated sewer system. The 2005 environmental assessment of Taralga's proposed sewerage system advised that the environmental impact of the proposal is acceptable and would significantly improve the utilities base of Taralga.

Population growth within and around Taralga, will result in increasing expectations and demands for a more reliable utilities base. The provision of additional facilities and services in the village, including recreation and aged care facilities, as well as demand for employment generating activities (e.g. service and light industries) will attract further growth.

Commercial land uses would be limited to the existing Main Street. Future development would be required to retain a commercial presence and not replace existing commercial stock with residential uses. This approach will reinforce the function of the commercial core and minimise pressure from alternative land uses from occupying key sites within the Main Street. Future development will also be guided by development control principles that would encourage future uses to incorporate sound design and be sensitive to the heritage significance of existing structures within Taralga.

While there are a number of large parcels of undeveloped land surrounding the existing Village, prior to any approval for a change of use, a detailed environmental assessment will be needed. The site specific local environmental study would need to identify and assess environmental constraints including bushfire prone areas, flooding and topographic issues that would affect use of the site.

Land surrounding the Village zone to the west and south have been recommended for the future expansion of Taralga. These areas are recommended primarily for large lot residential uses.

Large lot residential to the south and west of Taralga would encourage full time and part time agricultural pursuits while enabling residents to live near the village centre. This area is identified as prime agricultural land and this resource should be protected. These lots will be required to be connected to future reticulated water and sewer. Servicing of these sites would be wholly developer funded.

Following further investigations, detailed subdivision layouts and densities may be derived. Sites may also be identified for future large lot residential estates or subdivided and developed in such a way that they can be further subdivided in the future as required.

Planning for and provision of large lot residential development will relieve pressure on lands defined as prime agricultural south of Taralga and enable these properties to be retained for agricultural operations.

Consideration was also given to enabling expansion of the existing village to the north to promote activity and encourage an urban-rural interface. Due to topographical constraints however, development to the north would be inappropriate and may result in access, servicing and development difficulties.

To determine the need or the suitability of land for industrial uses, it is recommended that an industrial lands study be undertaken to identify land suitable for industrial and employment land uses near Taralga.

Various criteria were used to identify sites for large lot residential land uses surrounding Taralga. Table 11-2 defines the expected land use and development intensity issues that would need to be determined as part of the Strategy implementation.

Table 11-2 Opportunities and development intensity – Taralga

Land use Area	Land use opportunities
South Taralga – R5 Large Lot Residential	<ul style="list-style-type: none"> ▪ This area is generally unconstrained by slope or topography. ▪ Good road access via Goulburn Road. ▪ Productive Class II lands capable of variety of agricultural pursuits including regular cultivation. ▪ Needs to be considered in relation to future sewage treatment plant and irrigation areas – buffer to be provided surrounding sewage treatment plant. ▪ Promoting small scale agricultural pursuits is a key objective of this area to promote yield potential. ▪ Minimum 5 hectare allotment size to enable agricultural pursuits to operate and to encourage ongoing use of fertile lands. ▪ Investigation required to determine connections to reticulated water and sewer (when provided) systems unless developer

	<p>funded.</p> <ul style="list-style-type: none"> ▪ Generally free of vegetated areas although some areas comprise mature vegetation. ▪ Low bushfire prone potential. ▪ Would enable continuation of historic grid subdivision pattern for Taralga. ▪ Opportunity for cycle and pedestrian shared-way into the Village centre. ▪ Dwellings would be permitted where site area exceeds 5 hectares. ▪ Development controls to guide development design and protect rural amenity. ▪ Internal road pattern needed with new development to seal roadway where currently unsealed. ▪ This area to provide transition between residential areas and rural areas ▪ Minimal European or Aboriginal heritage identified.
<p>West Taralga – R5 Large Lot Residential</p>	<ul style="list-style-type: none"> ▪ This area is undulating and generally unconstrained. ▪ This area is to provide sensitive extension to the existing village and comprises good road access via Martyn Street and Cooper Street. ▪ Internal road network would be required as part of subdivision design. ▪ Good access to main street commercial area via Bunnaby Street. ▪ Buffer to be provided in accordance with water Directorate buffer guidelines from water treatment plant and any future sewage treatment plant to avoid conflict. ▪ Rural aesthetics and vistas into the village to be maintained where available. ▪ Large allotment sizes will offer varying design layouts to be considered and application of differing rural residential products. ▪ Opportunity for cycle and pedestrian share-way into the Village centre. ▪ Issues associated with water pressure and connectivity to utilities to be resolved. On site effluent disposal would be permitted where reticulated system is unavailable. ▪ Developer funded utilities to be permitted. ▪ Relatively free of vegetated areas. ▪ Not impacted by bushfire prone areas. ▪ Unlikely to result in land use conflicts given appropriate buffer from existing village uses. ▪ Does not comprise prime agricultural lands and therefore would not remove from productivity potential of the area. ▪ Development controls to guide development design and protect amenity and promote a livable community. ▪ Limited European or Aboriginal heritage identified.

Other areas within the existing Taralga Village zone would generally remain as existing.

The existing Village zone will continue to allow a variety of residential, commercial, mixed use areas, recreation and industrial. The Village zone reflects the zoning provisions and objectives as identified within the Standard Instrument. Future development within the large lot residential zone and the Village zone would be required to comply with design controls under the forthcoming development control plan.

11.1.3 Gunning

Gunning will be retained as a rural town servicing surrounding rural areas and villages with this role being reinforced by the Strategy. The function of Gunning as a rural centre would be supported through the retention of the Village zone.

The Village zone will operate pursuant to the Standard Instrument enabling a variety of land use zones including commercial, employment, recreational and mixed uses.

Community views about key land use issues for Gunning showed a desire to:

- maintain current density
- limit infill development to suit the heritage nature of the town
- support existing local business
- maintain heritage character
- retain the commercial presence in Main street and constrain conversion into residential
- promote tourism
- minimise high impact land uses within the town centre
- buffer incompatible uses

Figure 11-4 identifies the key expansion areas for Gunning and aims to retain appropriate use of prime agricultural areas south of the Hume Highway. The Strategy also promotes low density residential development within the existing Village given existing capacity across unconstrained areas and balances this with opportunities for infill development within the existing Village where existing capacity permits.



Figure 11-3 Gunning Village potential growth areas

Gunning has existing capacity for growth that may be absorbed through infill development within the existing village boundary. This growth is limited by existing utilities particularly reticulated water and sewer services.

The 2005 *Gunning Water Master Plan* identified that the Gunning sewage treatment plant will require upgrading once the 1,000 equivalent persons design capacity is reached. As at March 2005, 600 people were connected. Although the future connected population will depend on the number of lots that adopt on-site treatment, this is expected to reach 1,500 equivalent persons (beyond 2020) based on the rate of expansion of the town.

Population growth within and around Gunning, will result in increasing expectations and demands for a more reliable utilities base. The provision of additional facilities and services in the Village, including recreation and aged care facilities, as well as demand for employment generating activities (eg service and light industries) will also be integral to encouraging and attracting further growth.

Commercial land uses would be limited to the existing main street. Future development would require a commercial use to be provided to retain a commercial presence and not replace existing commercial stock with housing. This approach will reinforce the function of the commercial core and minimise pressure from alternative land uses occupying key sites within the main street. Future development will also be guided by development control principles that would encourage future uses to incorporate sound design and be sensitive to the heritage significance of existing structures within Gunning.

As part of any future application for change of land use (which includes an intensification of activities), a detailed environmental assessment of sewer and water availability shall be undertaken. Any environmental assessment, among other matters, would identify and

assess environmental constraints including bushfire prone areas, flooding and topographic issues that would affect use of the site.

Potential exists for a low density residential area within the existing Village located to the east of the Village. Development of this site is envisaged with a minimum lot size of 2,000 square metres. However, further investigation may be required to determine suitability of this site for residential development. Servicing of these sites may be wholly developer funded.

Following further investigations, detailed subdivision layouts and densities may be derived. The sites may also be land-banked for the purpose of future large scale residential estate or developed in such a way that they can be further subdivided in the future as required.

Planning for small rural holdings development to the east will ensure that prime agricultural land south of Gunning would be retained for agriculture.

In regard to attracting industrial uses, it is recommended that an industrial lands study be undertaken to identify lands suitable industrial and employment land uses near Gunning.

Various criteria were used to identify areas capable of supporting rural small holdings, large lot residential and the existing Village zone. Table 11-3 defines the expected land use and development intensity issues that would need to be investigated as part of the Strategy implementation.

Table 11-3 Opportunities and development intensity – Gunning

Land use Area	Land use opportunities
East Gunning Village zone –	<ul style="list-style-type: none"> ▪ This area is within the RU5 Village zone and has the potential to accommodate future low density residential land uses. ▪ This area is undulating and generally unconstrained. ▪ This area is to provide sensitive extension to the existing village and comprises good road access via Gunning Road. ▪ Internal road network would be required as part of subdivision design. ▪ Good access to main street commercial area via Gunning Road and Gundaroo Street. ▪ Sites to be a minimum of 2,000 square metres. ▪ Rural aesthetics and vistas into the village to be maintained where available. ▪ Large single allotments that may be developed in stages with areas adjoining existing Village to be developed initially. ▪ Site may offer an alternative residential product to Village area. ▪ Opportunity for cycle and pedestrian shared-way into the Village centre. ▪ Issues associated with water and connectivity to utilities to be resolved. On site effluent disposal would be permitted where reticulated system is unavailable. ▪ Developer funded utilities to be permitted. ▪ Relatively free of vegetated areas. ▪ Not impacted by bushfire prone areas.

	<ul style="list-style-type: none"> ▪ Unlikely to result in land use conflicts given ability to appropriately buffer from existing Village uses. ▪ Does not comprise prime agricultural lands and therefore would not reduce productivity potential of the area. ▪ Development controls to guide development design and protect Village amenity and promote a livable community. ▪ Low potential for European heritage or Aboriginal heritage identified.
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An opportunity for an extension to the existing Village zone also exists to west of the rail line. This area was identified in the Richardson Study as a potentially for residential uses and would adjoin to the existing Village. This site does not present significant constraints to low scale residential development and would require detailed environmental assessment prior to any release for urban uses.

A further opportunity exists between the Village Zone and the Hume Highway along Collector Road. This area as defined in Figure 11-4 would accommodate low density living and provide an appropriate extension of the Gunning Village.

An area directly to the east of the Village has been identified as an opportunity for a Rural Small Holdings Zone. The intent of this growth area is to provide for additional development to encourage full time and part time agricultural pursuits while enabling residents to live near the village centre.

Remaining areas within the existing Gunning Village zone would continue as existing.

Based on environmental constraint mapping, areas directly north of the existing village were not considered appropriate for village or residential zoning due to existing creek lines raising the potential for flood prone areas and topography of the areas exceeding ten percent and therefore potentially impacting ability to install on-site effluent measures. Based on these constraints, this area has been included in the RU4 Small Rural Holdings zone.

Areas south of the Hume Highway have been identified for having good quality productive soils for more intensive agricultural practices. However, given the physical separation from the Village and difficulties in servicing these areas, areas south of the Hume Highway, Gunning will revert to the RU2 Rural Landscape Zone.

The existing Village zone will continue to allow a variety of uses including residential, commercial, mixed use areas, recreation and industrial. The Village zone reflects the zoning provisions and objectives as identified within the Standard Instrument and are designed to enable a variety of uses to take place. Future development within the large lot residential zone and the Village zone would be required to comply with design controls under a future new development control plan. Such a development control plan would need to be cognisant of the rural and heritage character of Gunning.

11.2 Rural areas

11.2.1 Rural Villages

Rural village areas will continue to operate as existing.

To enable appropriate future development opportunity across rural villages, the following amendments are proposed to rural village areas:

Jerrawa

Jerrawa currently does not have a Village zone.

Figure 11-4 identifies the proposed Village zoning for Jerrawa to reflect its presence as a service Village for surrounding rural areas.

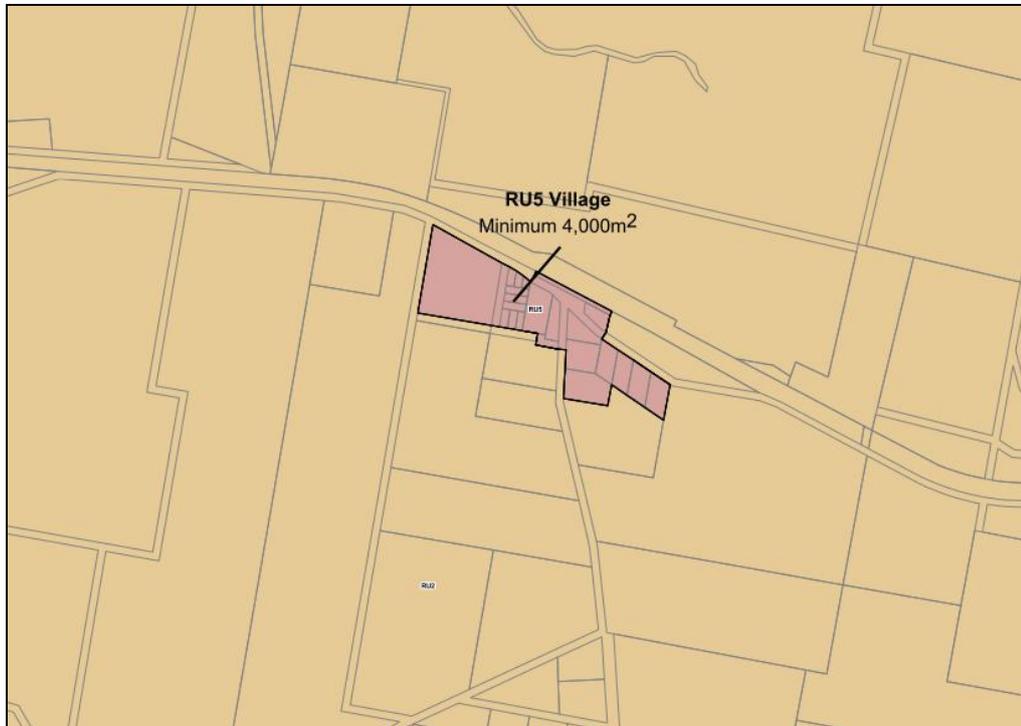


Figure 11-4 Jerrawa Village Zone

This approach would enable works to be undertaken within a Village zone and not constrain development under a rural zone that would be subject to large minimum lot size provision.

Breadalbane

Although Breadalbane offers some capacity for infill development, the existing Village zone constrains future development and land use flexibility to a narrow section of the Village. Given Breadalbane's proximity to Goulburn, Yass and Canberra and community demands for greater land use flexibility, the Strategy recommends the existing rural small holdings zone to be included into the Village zone. Development guidelines will ensure future development is in keeping with the existing village character and is cognisant of environmental issues including access to water, weed management and bushfire control.

Extension of the existing Village zoning would also enable tourist facilities to be erected to support and encourage tourist visits and lengthen tourist stays.

Figure 11-5 identifies the proposed extension to the existing Village zoning for Breadalbane and to augment its presence as a service and tourist Village for surrounding rural areas.

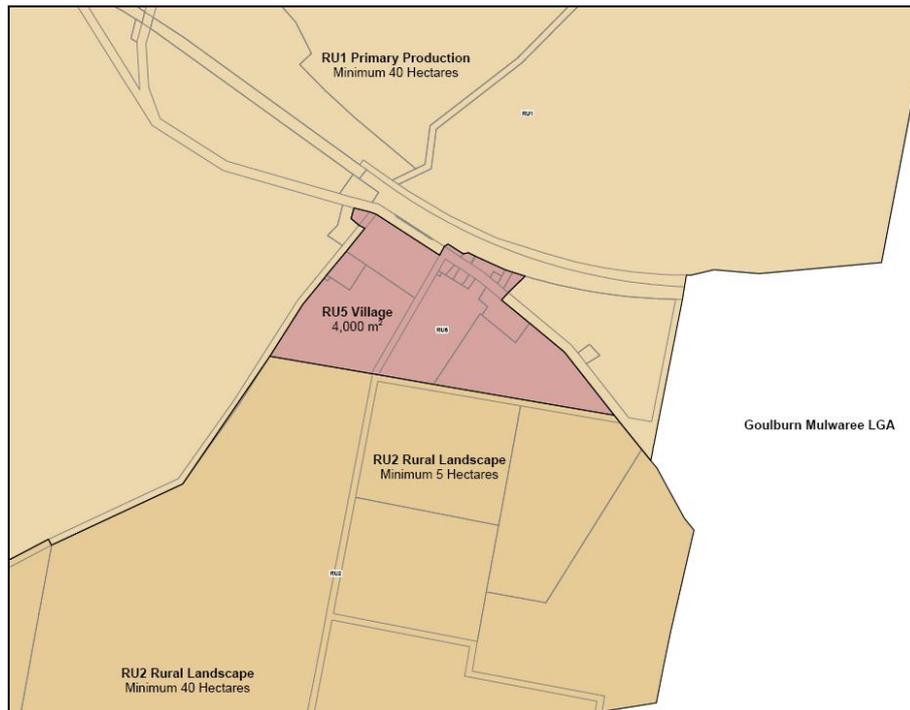


Figure 11-5 Proposed extension to the Breadalbane Village Zone

11.2.2 Other Villages within the Upper Lachlan

The Strategy recommends remaining Villages within the Upper Lachlan be retained with no change to the existing Village boundaries.

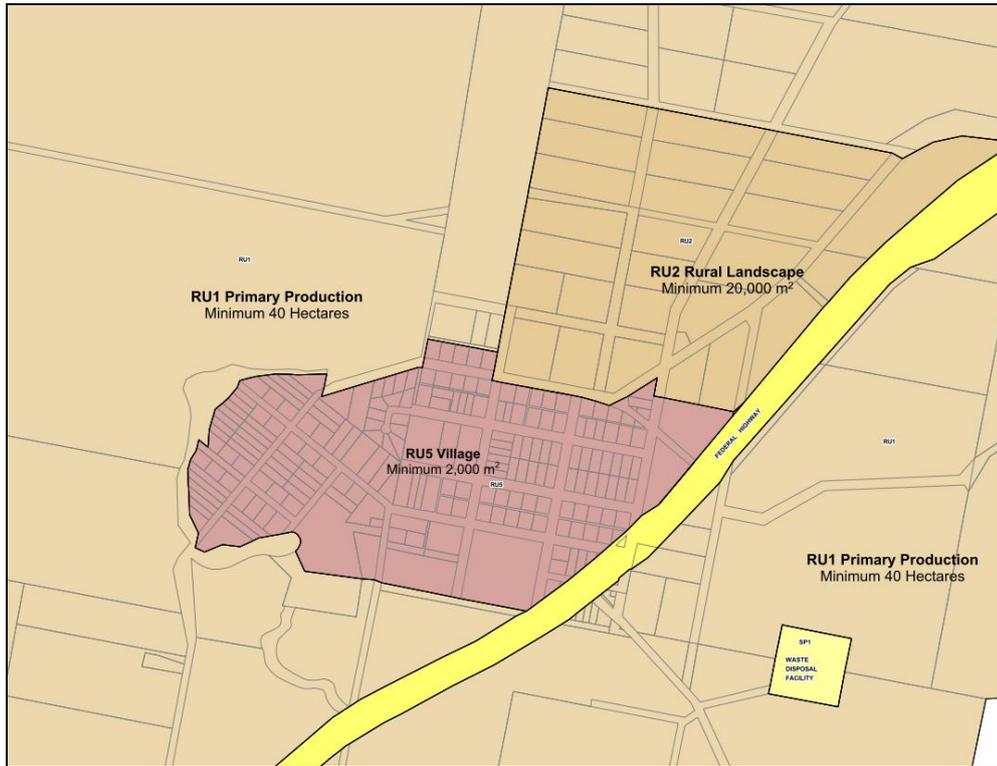


Figure 11-6 Recommended zoning changes to Collector, currently under Gunning Local Environmental Plan 1997

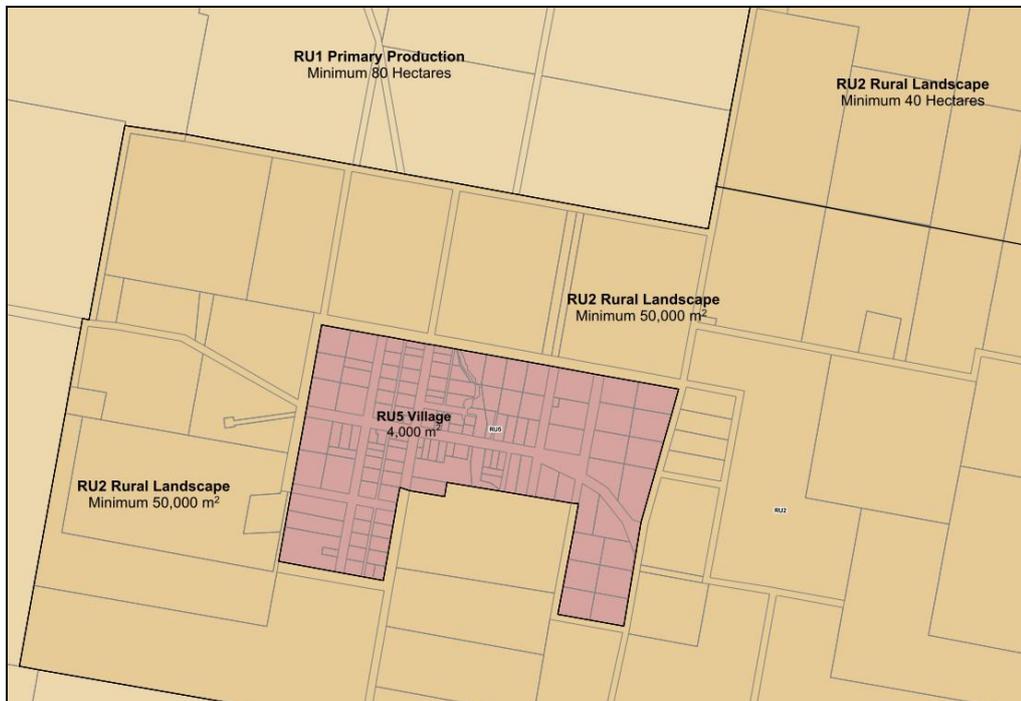


Figure 11-7 Recommended zoning changes to Dalton, currently under Gunning Local Environmental Plan 1997

Allotments zoned 1(d) Rural Small Holdings pursuant to *Crookwell Local Environmental Plan 1994* will retain the current 2 hectare minimum requirement for subdivision. This amendment will affect areas surrounding the Villages of Bigga and Binda and Laggan and are illustrated at Figure 11-8. Bigga and Binda are both unchanged, with a RU5 Zone proposed instead of the current 2v Zone.

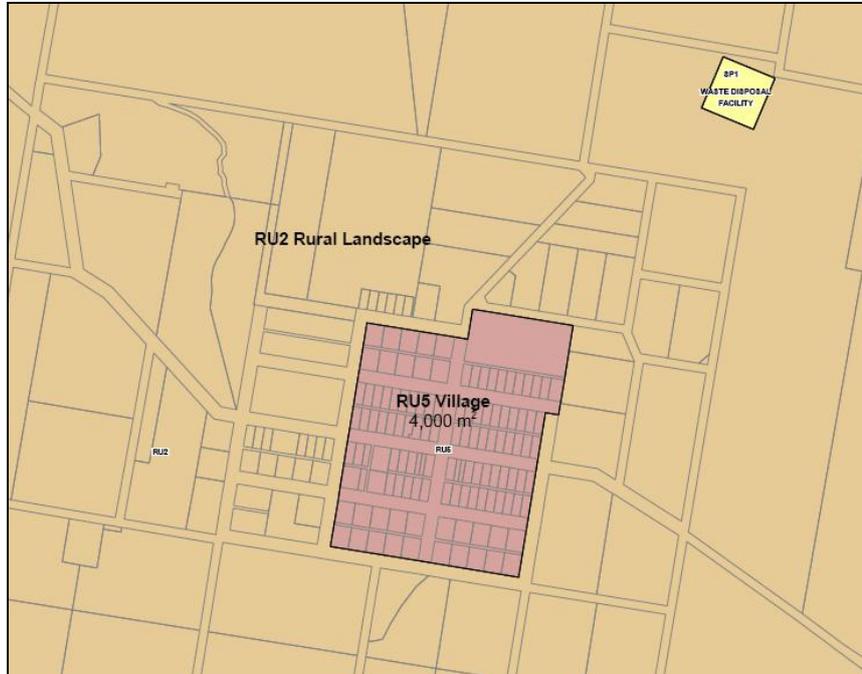


Figure 11-8 Recommended zoning changes to Bigga currently under Crookwell Local Environmental Plan 1994



Figure 11-9 Recommended zoning changes to Binda currently under Crookwell Local Environmental Plan 1994

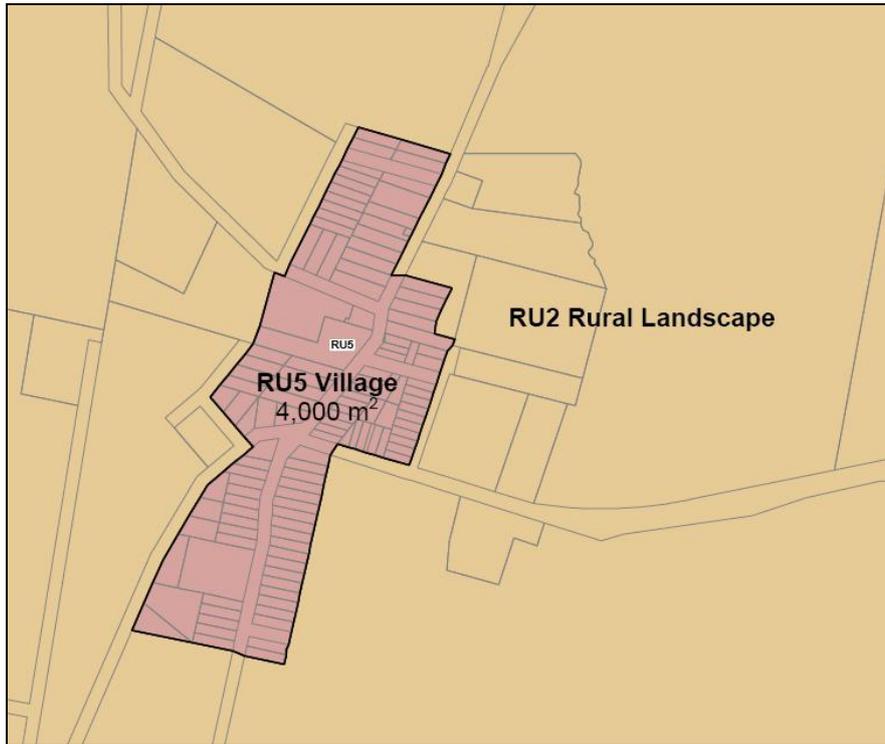


Figure 11-10 Recommended zoning changes to Laggan currently under Crookwell Local Environmental Plan 1994

The recommended zoning changes to Laggan recognises the current scale of Laggan and appropriately updates the zoning to reflect the current land use pattern.

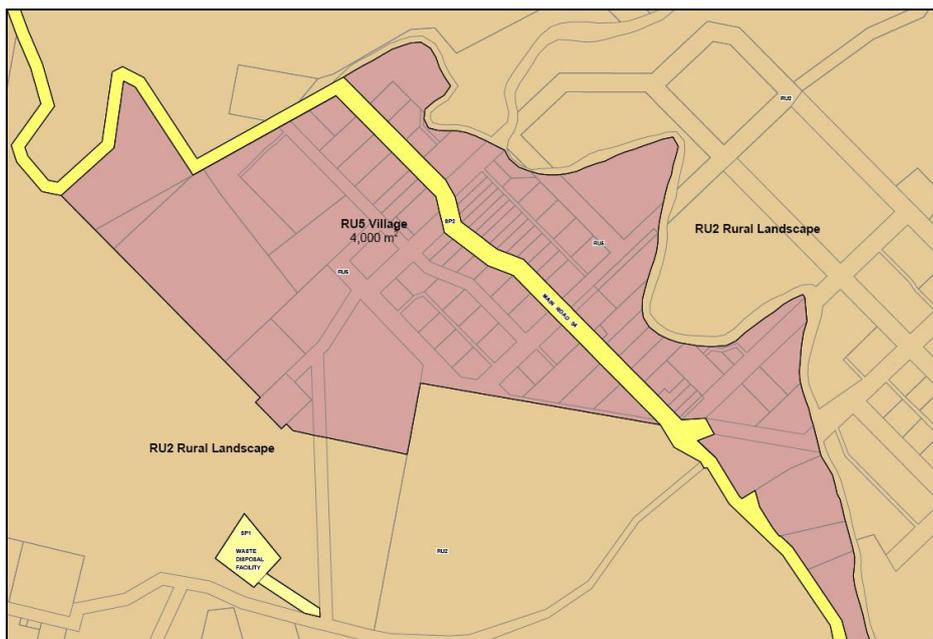


Figure 11-11 Recommended zoning changes to Tuena

The recommended zoning changes to Tuena represent conversion of the 2v Village Zone to a RU5 Village Zone.

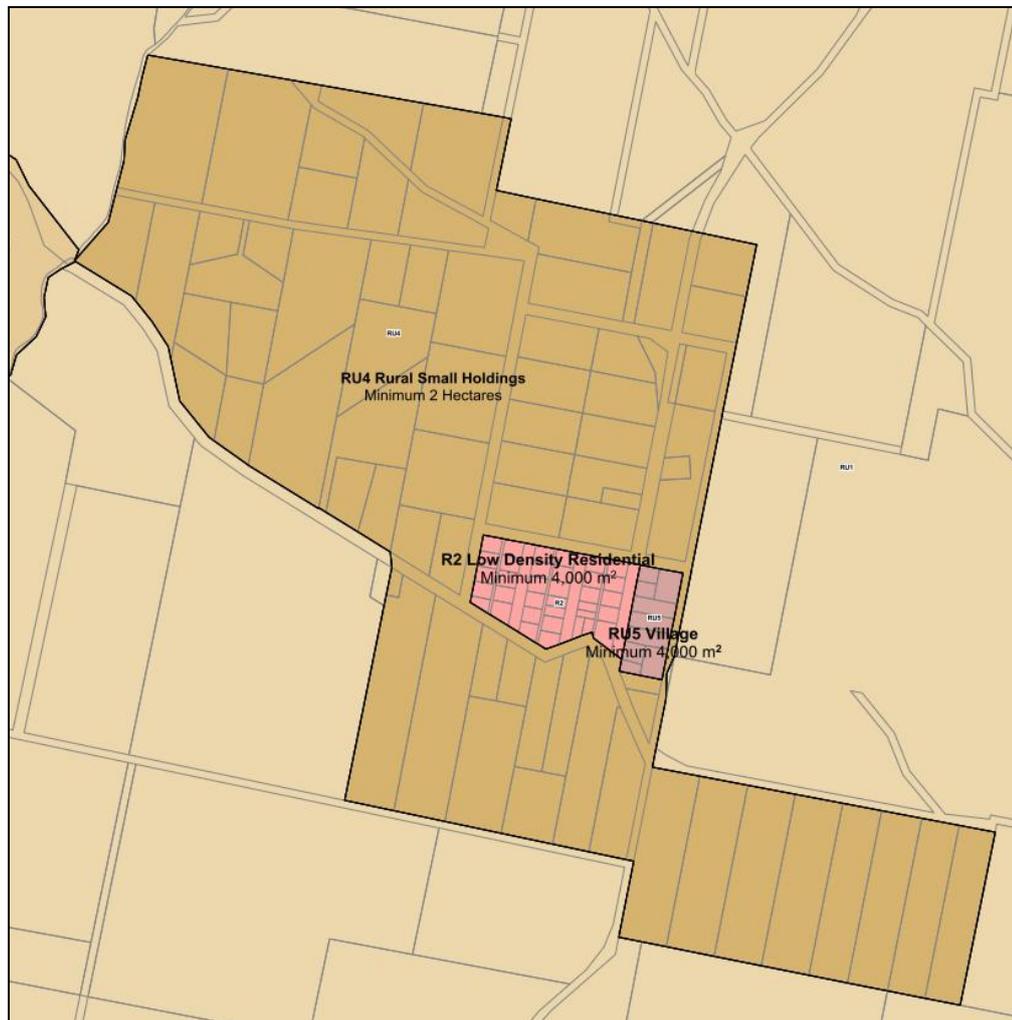


Figure 11-12 Recommended zoning changes to Grabben Gullen

Areas surrounding Grabben Gullen currently zoned for rural small holdings are located within an area comprising prime agricultural lands (Classes 1, 2 or 3) and would therefore be able to support a wide range of agricultural activities including cropping. The Strategy recommends that existing rural small holdings be retained to support and encourage further small agricultural practices within this area.

A R2 Low Density Residential Zone should be considered west of the existing Village, which would recognise the current subdivision pattern and use of the area.

Key constraints to expansion of the rural small holdings south of the current Village include vegetated areas and land subject to bushfire prone lands. Further assessment will be required prior to development.

Areas south of the existing Village zone are constrained by existing vegetation and bushfire prone areas that would need to be considered as part of any future proposed use with appropriate mitigation and management measures required. Access to Grabben Gullen between Gunning and Crookwell is along MR 52 and provides a junction that enable access west to Wheeo and beyond along Wheeo Road and east to Bannister and through to

Goulburn along Range Road. Road access west to Wheeo and east to Bannister and through to Goulburn comprises both sealed and unsealed sections of Road.

11.2.3 Rural and agricultural areas

Agriculture, forestry and fishery industries are the largest employers in Upper Lachlan. Figures provided by the Census of Population and Housing indicate that over 35 percent of the region's population are employed by these industries. For comparative purposes, the next largest employer is the retail trade, which employs eight percent of the total population.

In addition to traditional agricultural industries, several smaller niche industries are growing in importance to the rural economy. Examples include olives and grapes, lavender, Lawson wheat, flowers (such as gladioli and daffodil) and a range of berries. Further, a number of niche animal enterprises are present including ostriches, alpaca and deer (Capital Region Development Board 2005).

The Strategy aims to support traditional agricultural operations across rural areas as well as smaller scale agricultural pursuits. Reduced minimum allotment sizes where a dwelling entitlement would be permitted are identified around Taralga is recommended based on agricultural land capability classifications where lands are identified as Class II and defined as *prime agricultural lands*.

There is not an ideal minimum lot size for agriculture (Sinclair 1999), a variety of matters need to be considered in defining a minimum lot size for rural and agricultural lands. Key elements for any approach include 'agricultural viability' and 'sustainability'.

Viability, generally applies to the economic return and is heavily dependant on the quality of farm management practices and the knowledge and skill of the farm operator. Sustainability however, introduces a broad spectrum of environmental, social and economic elements that need to be weighed prior to any direction being taken.

Operational and land needs differ for varying forms of agriculture - intensive operations require a reduced area in which to cultivate and maintain a viable operation. Although a market garden may be sustainable on a small allotment, much larger areas are required where a farm is primarily for dairy or grazing. Variation in farming operations result in differing land and environmental pressures and are sometimes in conflict with one another where not managed appropriately. Issues relating to fragmentation and conflict arise from these varying pressures.

Recommended rural zones

Areas identified as suitable for agriculture (Classes I, II, and III) not zoned as rural small holding are recommended to be zoned *RU1 Primary Production* whereas areas outside of villages that do not offer prime agricultural capabilities are recommended to be zoned *RU2 Rural Landscape* to maintain the existing landscape of these areas and avoid inappropriate development and sprawl.

Also, appropriate areas capable of supporting development for forestry are recommended to be zoned *RU3 Forestry* to ensure use of these areas promote forestry operations and ancillary uses.

To avoid fragmentation within outer lying rural areas, rural small holdings of between 5 and 10 hectares are recommended close to towns on prime agricultural lands to encourage such

pursuits. This is to enable prime agricultural sites away from towns to continue operating while minimising potential for conflict.

Reference to minimum allotment sizes is aimed to guide subdivision control and define minimum land requirements where dwelling entitlements exist for land owners. Sale of sites which have already been subdivided below a minimum allotment size threshold would not be permitted to erect a dwelling. Also, where a dwelling currently exists, future subdivisions would not be permitted where this would result in a dwelling on an allotment below the minimum size requirement.

Minimum lot sizes for a Dwelling on Agricultural Land

Current environmental planning instruments applicable to Upper Lachlan provide for varying minimum lot sizes for which a dwelling entitlement is available. This is due to the varying local environmental planning instruments currently operating. The Strategy recommends a consistent approach to assigning minimum lot sizes for which a dwelling entitlement would be available through the local environment plan. This would form a consolidated approach across Upper Lachlan and instill greater confidence and consistency in planning and development.

The Strategy recommends that a minimum of lot sizes be applied across the proposed zones:

RU1 Primary Production:	40, 80 or 100 hectares
RU2 Rural Landscape:	40, 80, 100 or 200 hectares
RU4 Rural Small Holdings:	2, 5 or 10 hectares
R5 Large Lot Residential	2,000 square metres – 5 hectares

These lot sizes have been designed to protect and maintain land for designated purposes where possible and avoid inappropriate fragmentation lands that increase the potential for conflict between competing uses. The minimum allotment sizes seek to protect biodiversity in highly productive areas and maintain the scenic amenity and rural landscape qualities of Upper Lachlan. For the RU1 and RU2 Zones, larger lot sizes should be considered in areas of higher rural landscape, amenity and agricultural values.

The minimum lot sizes specified above incorporate elements of the precautionary principle. This approach enables an increased range of land use possibilities for future generations to respond to land demands and land use change.

In defining the minimum lot size, the following elements were considered:

- The economic and environmental cost of fragmentation may cause serious ramifications which are irreversible. There is little scientific evidence available about impacts on the long term sustainability of the agricultural sector.
- As the cost of fragmentation may significantly affect the long term sustainability of the agricultural sector, a safety margin is important.
- As confidence in reduced lot sizes for agricultural needs increases in relation to modern farming practices, a transition should be allowed over time to reduce the minimum allotment size where this would not result in an excessive risk to the long term sustainability of the Agriculture sector.

There are a number of other matters which also need to be considered in recommending a minimum allotment size. These matters primarily relate to the availability of resources to an individual site. The ability to harvest water - either from a dam or a river - is important as is the amount of high class agricultural land. The preservation of native vegetation and biodiversity as well as the need to avoid land degradation and pollution of surrounding waterways are all issues that have to be considered (Sinclair 1999) in determining minimum allotment requirements for designated uses.

Cowra independent review

On 7 December 2005, the Minister for Planning appointed an independent review panel to review a range of planning matters in Cowra. The findings of the review were issued in March 2006. A principal recommendation of the panel was:

“Cowra Local Environmental Plan 1990 (Amendment 14) be made as a matter of priority with a minimum lot size of 400 hectares...”

These recommendations were endorsed by Council and an amendment to ratify these recommendations was endorsed by the Department of Planning and gazetted in April 2006.

A 400 hectare minimum lot size for Upper Lachlan has not been recommended by this Strategy and this minimum lot size is not representative of the minimum allotment size for LGA within the central and southern tablelands. This approach would effectively freeze any further subdivision within Upper Lachlan where a dwelling entitlement was sought. The Strategy does not attempt to achieve this outcome. It identifies minimum lot sizes, which should be varied upwards depending on higher rural landscape, amenity and agricultural values. The Strategy aims to apply a range of mechanisms including variable minimum lot sizes and zones across the rural and agricultural zones. This approach is cognisant of the need to minimise land use conflict, fragmentation and alienation of productive lands. The Strategy supports sound planning practices and seeks to inform sustainable land use decisions and should be subject to periodic review to ensure land use and environmental change is realised.

12. Development principles

Development within Upper Lachlan will be guided by standards, concepts and principles established as part of the *Upper Lachlan Local Environmental Plan* and in the more detailed comprehensive development control plan. The Upper Lachlan comprehensive development control plan will provide practical on site solutions for the implementation of local environmental plan objectives.

The following development principles set the detailed development framework that will guide future development within Upper Lachlan and form the basis of the development control plan.

- Buffers are to be used to safeguard the integrity and quality of waterways and creeks. It is recommended that a minimum riparian buffer zone of 40 metres from the centre-line of waterways and creeks be maintained.
- Development buffers are to be used to safeguard prime agricultural land (where zoned *Primary Production*). Council should refer to buffer guidelines prepared by the Water Directorate prior to enabling sensitive land uses in proximity to hazardous and offensive development including agricultural operations.
- Residential land is to be developed with the creation of neighbourhoods comprising a range of densities.
- Residential areas should promote opportunities for walking and cycling as viable modes for local transport.
- Integrated open space and drainage networks should also provide the framework for an off-road pedestrian and cyclist network.
- Non-residential land uses shall not impact upon the amenity of the area or surrounding sensitive land uses. This would include, for example, local shops and commercial premises, schools, child care centres, places of worship, open space and recreation.
- Land uses that maintain a rural landscape should be encouraged on the edges of residential areas to provide a defined transition to rural areas and minimise potential for land use conflicts. This is particularly important where large lot residential development is near areas identified for agricultural purposes.
- Investigations will be required to determine the optimum sewage servicing approach for the residential areas. Construction of a sewage treatment facility at Taralga will attract development interest to the town given this infrastructural improvement however a buffer in accordance with the STP Buffer Zone Land use Planning Guidelines produced by the Water Directorate (2006) to the sewage treatment plant would be required to protect residential amenity.
- Best practice water quality controls (including water quality monitoring) should be implemented. Pre-development water quality should be maintained or enhanced in post-development run-off. The management of water should address cumulative environmental impacts and be carried out in accordance with the principals of integrated water cycle management and water sensitive urban design.

12.1.1 Agriculture

Protecting prime agricultural lands will be achieved through appropriate zoning of land and provisions that recognise and protect these lands for primary production purposes. The Standard Instrument identifies primary production, rural landscape and rural small holding zones that aim to protect agricultural production.

Appropriate zoning and enforcement of the zones will ensure consistency for future rural investment. Enforcing land use zones through a local environmental plan provides security to rural and agricultural businesses against poorly designed subdivisions or urban encroachment into traditionally productive agricultural areas.

Appropriate zoning also removes the pricing pressure for those involved in agricultural practices wishing to expand operations. The defined intent of the zones supports the ongoing function of the land for agricultural purposes. This in turn provides confidence to farmers that have already invested in agricultural pursuits in the area by providing consistency in future decision making associated with productive lands.

In achieving the above objectives, the Strategy has been prepared to ensure agricultural land objectives:

- Encourage continued growth in the area's rural economic base by protecting prime agricultural areas.
- Introduce rural small holdings near towns where prime agricultural lands exist.
- Recognise the significant contribution agriculture makes to Upper Lachlan and regional NSW.
- Prevent inappropriate fragmentation of agricultural lands.
- Protect and conserve prime agricultural lands and encourage sustainable agricultural operations.
- Promote appropriate access and efficient use of water resources.
- Permit compatible non-agricultural land uses within rural zones that would not adversely affect the future productivity of the site.
- Prevent development of inappropriate non-agriculture land uses including large lot residential that will adversely affect the productivity potential of agricultural areas and result in inappropriate fragmentation.

Residential development in rural areas will be managed through zoning provisions particularly in agricultural areas to ensure that agricultural land is protected and to minimise potential for land use conflicts and isolation of agricultural lands. The minimum allotment size standards are primarily prepared to regulate landowner dwelling entitlements. The minimum lot sizes proposed to enable dwelling entitlements across Upper Lachlan include:

- R2 Low Density Residential Zone: Minimum 800 m² (urban areas only)
- R5 Large Lot Residential Zone 2,000 square metres - 2 hectares
- RU2 Rural Landscape Zone 40, 80, 100 or 200 hectares
- RU4 Rural Small Holding Zone 2 – 10 hectares (Village fringes only)
- RU5 Village 1,000 - 4,000 m²

- RU1 Primary Production Zone 40, 80 or 100 hectares

To maximise certainty, farm amalgamation and boundary adjustment provisions have been addressed under the Upper Lachlan Local Environmental Plan that will restrict minimum lot size requirements as defined above.

Although subdivision of sites for agricultural purposes only may be subdivided below the minimum allotment size, these sites would not be permitted to erect a dwelling. Also, where a dwelling currently exists, future subdivisions would not be permitted where this would result in an allotment size below the minimum requirement.

Creating an environment that enables further fragmentation of agricultural lands will create long term challenges for the agricultural sector. Economic development initiatives and other strategies such as property management planning, diversification, training and value adding are also necessary to ensure economic sustainability for this sector.

The following identifies the approach the Strategy has undertaken in ensuring agricultural lands and operations are not undermined by future growth:

- Residential areas are to retain a minimum 400 metre buffer (where no vegetation screening available) to agricultural areas. This buffer is to safeguard against noise, odour, dust, spray drift and other operations that may affect residential amenity.
- Remnant tree vegetation on the site should be retained to minimise the potential for siltation and erosion of downstream waterways.
- Watercourses are to retain a 40 metre buffer to restrict any development that would impact on watercourses.
- Buffer zone plantings should regard ecological corridors and fire considerations to both maximise screening and ecological benefits.

12.1.2 Large lot residential development

The following principles are designed to support appropriately located large lot residential development. Principles include:

- Large lot residential lots which adjoin towns and villages and provide prestigious large lots for local residents may be restricted to a maximum of two hectares when connected to town services.
- Large lot residential lots adjoining Crookwell that provide a rural lifestyle for town workers but without town services shall be a minimum two hectares to allow for onsite effluent disposal.
- The area bounded by Prell Street, Woodward Lane, the rail line and generally within the existing Crookwell Village zone provides a suitable large lot residential area that would reinforce existing densities east of Prell Street and provide an alternative land product for future populations. Lots within this area shall be a minimum of two hectares.
- Development along rivers or associated with conservation of natural resources and cultural assets would be responsible for restoration and management. Such allotments would need to give consideration to setback requirements (particularly where flood liable), pollution management and conservation requirements.
- Other key issues include:

- building form
- visual and acoustic privacy
- building separation and setback
- access
- site servicing and associated impacts
- energy efficiency and sustainability principles
- geotechnical (dictates ability to support on-site disposal)

Subdivision designs would be guided by principles and standards that would be identified within a development control plan that will make provisions for lot layout, orientation, access, serviceability and consistency with the Local Environmental Plan objectives. Large lot residential development therefore needs to be targeted and managed to minimise adverse impacts and is undertaken in a planned way that does not detract from the efficient use of agricultural land resources.

Detailed site analysis would be required to ensure the design of any future large lot residential subdivision and subsequent development appropriately responds to individual site characteristics surroundings.

12.1.3 Urban and Landscape Design

The future built form and development within Upper Lachlan should respond to the area's natural attributes and, particularly, its environmental constraints.

Within areas identified as capable of supporting development, development should set new standards for Upper Lachlan. The key urban and landscape design outcomes for future development include:

- Creating road and subdivision patterns that efficiently interconnect with existing road layouts and enable appropriate subdivision layouts. Proposed subdivision layouts particularly within Crookwell south of Goulburn Street and Brooklands Street should reinforce the existing grid layout and enable adequate setbacks and separation from waterways and potentially flood prone lands.
- Providing urban networks and systems (roads, drainage, etc) which satisfactorily integrate with natural systems where available.
- Providing opportunities for a diversity of housing forms and styles. Multi-dwelling housing forms should be integrated into the development in a manner which contributes to the creation of a safe and attractive community. Preferred locations for this form of development would be within Crookwell and within proximity to the town centre of Crookwell.

Open space and public space

- New residents and workers will require open spaces for recreational and sporting activities. Open spaces should be based on the existing natural landscape, and include protection of the dominant creek lines, significant areas of vegetation, and ridgelines where possible. The open space system should also integrate with the proposed distribution of land uses and be readily accessible from pedestrian and cyclist pathways.

- Encourage community focal points where appropriate (such as public art and gathering places), particularly within public space areas.
- Fencing to public spaces, open spaces and land to be used for large lot residential development should reflect the natural characteristics of the area, such as timber and post and rail fencing. Large expanses of solid barrier fencing using man-made compounds, such as steel, and aluminium, should be avoided.

Vegetation

- Promote the use of locally relevant native trees and shrubs. New plantings should seek to enhance the overall amenity of the area and its visual context.
- Significant vegetation across Upper Lachlan should be protected within the open space system. This will reinforce natural scenic qualities and provide habitat for native fauna and create a sense of place for the natural environment and community.
- Planting native tree species that naturally occur within Upper Lachlan would emphasise landscape character and increase community identity. Feature trees, including exotic species, could be used to highlight locations such as commercial areas (if required), important intersections and main roads. Structured tree plantings are currently a key feature within Taralga and add to the visual interest to the town. This form of planting may become a theme for future development within Taralga which would encourage community and place identity.

Streets and access points

- Future development should provide for a substantial vegetated buffer of at least 30 metres along major roadways and incorporate gateway treatments including vegetation, fencing and signage. Gateway treatments should commence well in advance of any urban development in newly developing areas to allow planting to become established.
- In particular, future development at the interface with the major approach routes to towns and villages (such as Goulburn Street, Crookwell) should be appropriately treated with a landscaped setback.

Built form

- Ensure that the bulk, scale and form and external finishes of development are compatible with the colours and textures of the local area.
- Encourage architectural initiatives in design through modulation, building indents, varied window design, landscaping and external finishes.
- Provide for a maximum level of two storey housing in residential areas and three storey developments in business zoned Main street areas.
- Development within areas zoned B2 Local Centre and Main streets shall retain commercial at the street level to reinforce the commercial presence of these areas.
- Encourage energy-efficiency through appropriate design, use of materials and orientation of buildings (incorporate BASIX requirements as part of all new residential development).
- Encourage appropriate design standards, adequate levels of sunlight and privacy, efficient layout of rooms, provision of private open space, security and separation from neighbours.

- Encourage design which is compatible with the natural surrounding environment, rather than dominating it.
- Encourage the minimisation of site disturbance and use of soil conservation practices to protect existing site features and vegetation.
- Limit hard paved areas by providing the maximum landscaping area possible. This will also promote infiltration and lower the burden rate on drainage infrastructure.

12.1.4 Visual and Landscape Sensitivity

Rivers and creek lines

To achieve visual quality, a landscaped corridor of at least 40 metres either side of rivers and creek lines and corridors of up to 25 metres either side of the drainage lines feeding into creeks and rivers are recommended. These buffer areas may also be incorporated as key corridors within an open space system and natural drainage network. Additional planting of native species should occur in these areas.

All works would need to be cognisant of catchment management plans that may affect development together with Strategic Land and Water Capability Assessments. Developments will be required to demonstrate their response to capability criteria and identify potential constraints to ensure adequate information is provided and factored into the design process.

Existing vegetation

- A detailed survey of mature trees within any site is to be prepared prior to any approval of road layouts or site clearing, and protection given to these trees.
- Future subdivision patterns and development proposals should take account of the existing isolated mature trees. Every effort should be made to retain these trees in an urban context which enables them to survive and contribute to the landscape character of future residential and rural areas. Possible strategies would include larger lot configurations, no-build areas around trees and, where possible, locating parks in locations where mature trees exist.

Ridgelines and rural views

Ridgelines are visually important elements of the rural landscape. Recommendations for future development near ridgelines include:

- Avoid development on the ridgelines or in locations where structures would protrude or interrupt the skyline when viewed from a distance.
- Maintain ridgelines (and their buffer areas) and the view corridors to natural and cultural landscapes. In this regard, a no-build buffer for at least 40 metres either side of the ridgeline should be implemented. Development controls for the site should address building envelopes and provision of additional native tree planting to achieve this objective.
- Roads and urban structures in more visible areas should conform to the natural terrain as much as possible.
- Development should be sited in less prominent areas such as on the side slopes and in the natural depressions, rather than on ridgelines.

- Sensitive placement of major infrastructure. For example, electricity generating and servicing infrastructure and mobile phone towers should not be located near ridgelines where other practical locations are available.

12.1.5 Groundwater and Surface Water

Groundwater and salinity

- Although Upper Lachlan is generally free of salinity risk (Sticpewich 2000), this conclusion has been made on very limited data. Salinity investigations in accordance with the former Department of Infrastructure, Planning and Natural Resources guidelines (2002) should be completed prior to confirmation of any area being suitable for residential development outside of existing Village areas.
- Sufficient recharge to groundwater should be maintained in elevated areas. Vegetated corridors should be retained at the top of ridgelines. This will be catered for by the provision of no-build areas described in *Section 12.1.4*.
- Incompatible uses should be avoided within one kilometre of town supplying bores east of Crookwell and basalt areas surrounding Crookwell and Taralga (refer Figure 9-1). Testing for groundwater should be conducted in these areas to determine potential supply of groundwater from these sources.

Surface water management

- The study area falls within the Lachlan, Hawkesbury-Nepean and Murrumbidgee Catchment Management Areas. Management plans prepared for these catchment areas must be observed prior to new development. A minimum buffer zone of 40 metres (on either side of rivers and creeks) applies under the *Rivers and Foreshores Improvement Act (1948)* to protect riparian zones.
- Detailed evaluation of surface water and groundwater attributes at the individual site level to identify possible management constraints will be needed. A site investigation would therefore be required and would include the following:
 - geological mapping
 - inspection and recording of any spring areas
 - obtaining water quality data to ensure post development flows do not result in a degradation of water quality.
- Where stormwater infrastructure is proposed, surface water and stormwater network designs should adopt a 'water sensitive' approach, with the following key performance outcomes:
 - mimic the natural hydrological regime by ensuring environmental flows are maintained during dry periods, and that the total annual volumes of water released approximate the natural catchment, and that peak flows for minor and major storms are not increased. This can typically be achieved by combined use of water tanks, infiltration devices, grassed swales to convey runoff in preference to kerb and gutter, and retention basins.
 - demonstrate that there will be no net increase in pollutant export above the baseline levels for the existing catchment. Typical water quality management practices used to achieve this objective include infiltration devices, grassed swales, bio-retention storages, water quality control ponds and gross pollutant traps.

- As part of any new residential subdivision, it is expected that detailed hydrologic, hydraulic and water quality models would be established to determine existing and proposed conditions. Suitable control measures should be identified to ensure that the conditions at full development will not be worse than existing conditions.

12.1.6 Traffic and Access

Gradual development across Upper Lachlan will result in increased demands on roads and transport infrastructure. In accordance with the Strategy, future growth is likely to require the implementation of the following measures/actions:

- Limit access to either the Hume Highway and major roadways. The Roads and Traffic Authority would be consulted for any development along the Hume Highway and other Roads and Traffic Authority controlled roads to ensure proposals for ingress and egress are appropriate.
- An assessment of the traffic impact of new development being undertaken should be assessed at the development assessment stage. Any assessment should canvass the impact on traffic flows on the particular town/village.
- An assessment of bicycle and pedestrian needs to be undertaken at the development assessment phase.
- Discussions should be held with the providers of the local bus service to promote new bus routes so that existing bus services would be expanded to accommodate the needs of new development as demand warrants. Suitable provisions such as bus stops and shelters should be provided as part of the development at the proponent's expense.
- At least one pedestrian/cycle link should be provided in Crookwell linking new and existing development areas. This should preferably be an off-road path and be consistent with Council's Pedestrian Access and Bike Plan.

12.1.7 Environmental Protection

Flora and fauna

- Development should be generally excluded from existing vegetated and riparian areas together with a minimum 40 metre development buffer surrounding heavily vegetated areas.
- A species impact statement may be required to be carried out for any development on any land identified as being of high ecological significance. A species impact statement may also be required for development on land adjacent to areas of high ecological significance.
- Woodland and riparian areas are proposed to be zoned for environmental conservation under Upper Lachlan Local Environmental Plan. This will ensure a management approach that considers the area in its entirety.
- Management actions of the woodland and riparian areas should include:
 - no further clearing of vegetation
 - no firewood removal
 - direct rehabilitation and management of the understorey vegetation by groups such as Land Care

- the replacement of exotic species with native vegetation.
- Management for the remaining vegetation areas in private land holdings may remain in private control with appropriate restrictions being entered on the land title requiring ongoing management as an ecological asset.
- Property vegetation plans would be required for non-urban clearing where:
 - applying for natural resource incentive funding;
 - seeking approval to clear any remnant native vegetation or protected regrowth that is not exempt under the *Native Vegetation Act 2003*
 - seeking to secure offsets associated with clearing proposals.
 - Property vegetation plans will be required where clearing is proposed across non-urban areas including areas zoned large lot residential, rural small holdings, and primary production.

Heritage and archaeology

- A collection permit under the *National Parks and Wildlife Act 1974* should be sought in relation to any identified artefact scatter. Once issued, the artefacts should be collected, recorded and handed over to the relevant Local Aboriginal Land Council for safekeeping.
- Archaeological test excavation by a qualified archaeologist should be carried out in the area identified as a potential archaeological deposit to identify its extent and integrity. All archaeological testing must be conducted prior to any bulk earth works taking place in the potential archaeological deposit area.
- Archaeological test excavation by a qualified archaeologist should be carried out in the shaded areas identified on *Figure 7.14* as demonstrating Aboriginal archaeological potential.
- Excavation procedures associated with the testing programs to be determined in consultation with NSW Department of Environment and Conservation and the Local Aboriginal Land Council, whose members should be invited to participate in the testing program.
- In the event that Indigenous cultural fabric or deposits, or that historic cultural fabric or deposits are encountered, works must cease immediately to allow an archaeologist to make an assessment of the find. The archaeologist may need to consult with the NSW Department of Environment and Conservation or Department of Planning (as the case may be), regarding Indigenous relics or the historic cultural material unearthed.

Bushfire hazard

Although areas within towns, villages are generally free of bushfire prone land, the landscaped corridors and reserves envisaged by this Strategy may generate the need to consider bush fire protection measures at some stage in the future. Development planning in areas surrounding these reserves and corridors should be carried out in accordance with *Planning for Bushfire Protection* (NSW Rural Fire Service and PlanningNSW 2001) and should also respond to the current bush fire prone land map endorsed (and which may be updated from time to time) by the NSW Rural Fire Commissioner.

Also, development in bushfire prone areas within rural areas and surrounding villages (eg. Grabben Gullen) need to provide appropriate mitigation and management measures to safeguard against fire risk.

Consultation with the NSW Rural Fire Service is recommended for all development proposed in identified bushfire prone areas to appropriately determine risk and appropriate mitigation and management measures that would need to be incorporated.

Contamination

Additional environmental assessment would be required prior to development occurring, to identify potential contaminants of concern, including pesticides and heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), and to identify the following:

- parts of any site that may have been used historically for market gardening or orchards
- sheep dips that are, or may have been, associated with grazing activities
- industrial activities that may have been undertaken on the site
- any other activity or land use that may present potential to contaminate lands (fuel storage sheds, asbestos, pesticide storage etc).

Effluent disposal

If rural or large lot residential development is proposed, the optimum method of effluent disposal, in accordance with relevant Australian standards as discussed at *Section 7.4*, will need to be investigated with fieldwork investigations.

12.1.8 Infrastructure and Services

Water

- All development within towns must be provided with reticulated water and sewer facilities unless an alternative solution is identified to Council's satisfaction
- As part of individual site investigations, a detailed site analysis should determine whether the existing water supply network (where available) is adequate to cater for the additional demand or whether new supply mains and service reservoirs are required to provide water to new development areas. This analysis should determine any requirements including the number, size, location and elevation of any new service reservoirs, water treatment plants and mains including easements that may be required.
- BASIX requirements shall be observed for all new residential development to ensure demands on potable water are reduced and reuse is encouraged.

Electricity

Prior to any new development areas being established, negotiations with Country Energy should be undertaken to ensure that adequate energy supplies are available.

As part of any development, the proponent may be required to provide certain connection works required by Country Energy.

Waste Management

It is expected that the existing and proposed waste management facilities will be suitable for providing for future growth demands. Future development should be cognisant of Council's

Integrated Waste Management Strategy and ensure waste management plans are consistent with and support the aims and objectives of this Plan.

Telecommunications

Discussions with Telstra should be undertaken to ensure that their network can be expanded in the required timeframe and that the required developer provided infrastructure is installed correctly.

Local services and amenities

Future growth within Upper Lachlan is likely to require a range of local facilities at a scale commensurate with the demand generated by incoming local population, including:

- open space and parks of sufficient size to accommodate sporting and recreation activities. In this regard, usable open space (as distinct from drainage or ecological reserves) should be provided in accordance with the standards that would be contained in Council's revised Section 94 Plan with particular regard to:
 - additional land for local parks for each additional resident.
 - additional land for sports fields for each additional resident.
- neighbourhood and community services, reflecting the standards of provision existing across Upper Lachlan's residential areas. This would be based on a rate that would be adopted within Council's revised Section 94 Plan.

12.2 Staging

The timing and staging of the residential development within Upper Lachlan will be determined by Council. It involves balancing the objectives of the *Environmental Planning and Assessment Act 1979*, the Strategy and the desires of individual land developers

Council is required to implement the objectives of the Act, which include the promotion and co-ordination of the orderly and economic use and development of land. Clearly, land subdivided and serviced years in advance of new development is inefficient, and development encouraged on too many fronts defer Council's and public authorities' ability to recoup funds spent on up-front services.

Critical staging issues include:

- decision to enable lands to develop in accordance with the Strategy
- Development would be likely to proceed from Crookwell given the access to the town centre and services and utilities available and the Strategy intention to reinforce its position as the primary commercial and administrative centre for Upper Lachlan.
- Suitable road and infrastructure would therefore be provided to stimulate growth and investment and achieve growth targets.