

Department of
Infrastructure, Planning and Natural Resources

Armidale Dumaresq Rural Residential Study



Armidale Dumaresq Rural Residential Study

Prepared for Armidale Dumaresq Council and the Department of Infrastructure.
Planning and Natural Resources by



Rural and Environmental
Planning Consultants
PO Box 1858
Bowral, 2576
www.ruralplanning.com.au

November 2004

Table of Contents

Chapter 1: Introduction	1
1.1. Introduction	1
1.2. Background.....	1
1.3. Rural Residential Development	2
1.4. Methodology	6
Chapter 2: Conservation and Development Issues.....	8
2.1 Introduction	8
2.2 Environmental Opportunities and Constraints	9
2.2.1. Water Catchments	10
2.2.2. Topography	12
2.2.3. Biodiversity.....	13
2.2.4. Soil	14
2.2.5. Bushfire.....	15
2.2.6. Flooding	17
2.2.7. Weeds.....	17
2.3 Social and Economic Factors	17
2.3.1. Agriculture.....	17
2.3.2. Land Use and Fragmentation.....	18
2.3.3. Rural Land Use Conflict.....	18
2.3.4. Domestic Effluent Management	18
2.3.5. Infrastructure.....	19
2.3.6. Access and Roads	19
2.3.7. Economic Development	20
2.3.8. Heritage	20
2.3.9. Rural Landscape Character.....	21
2.3.10. Community Services and Facilities	21
Chapter 3: Stakeholder Consultation	22
3.1. Introduction	22
3.2. Consultation Workshops	22
3.3. Workshop Outcomes	22
Chapter 4: Development Pattern.....	24
4.1. Introduction	24
4.2. Armidale – Commissioners Waters - Newling	26
4.3. Ben Venue – Tillbuster	27
4.4. Bona Vista – Saumarez.....	28
4.5. Castledoyle	29
4.6. Dangarsleigh.....	30
4.7. Donald Creek	31
4.8. Dumaresq – West Armidale	32
4.9. Duval	33
4.10. Kellys Plains.....	34
4.11. Newling	35
Chapter 5: Strategic Environmental Assessment.....	36
5.1. Introduction	36
5.2. Physical Constraints	37
5.3. Existing Development Pattern.....	37
5.3.1. Land Use	37
5.3.2. Fragmentation of Ownership	39
5.3.3. Rural Residential Development	41
5.4. Infrastructure Provision	43
5.5. Supply and Demand	43

5.6. Vacant Existing Holdings.....	45
5.7. Criteria for Rural Residential Development	46
Chapter 6: Future Development Recommendations	48
6.1. Introduction	48
6.2. Rural Residential Development	48
6.2.1. Rural Fringe Development.....	49
6.2.2. Rural Living Development	51
6.3. Future Urban Area	54
6.4. Monitoring and Review	54
Chapter 6: Conclusion	55
Bibliography	56
Appendix 1 – Land Use Survey Methodology.....	58
Appendix 2 – Consultation Outcomes.....	62
Appendix 3 – Supply and Demand.....	68

List of Figures

Figure 2.1: Issues and Themes for the Rural Living Strategy	9
Figure 5.1 Land Use	38
Figure 5.2: Holding sizes analysis	40

List of Tables

Table 5.1: Number of Primary Land Uses	39
Table 5.2: Variety of Rural land uses.	39
Table 5.3: Existing Rural Residential Estates	41
Table 5.4: Supply of Rural Residential Land.....	44
Table 5.5: Projected Demand for Rural Residential Dwellings.....	45

List of Maps

Map 1.1: Study Area	2
Map 2.1: Water Catchments and Topography	10
Map 4.1: Locality Boundaries.....	25
Map 5.1: Land Use	38
Map 5.2: Holdings Analysis	40
Map 5.3: Existing Rural Residential Estates	42
Map 5.3: Vacant Land	44
Map 6.1: Recommended Zonings	49

List of Photos

Photo 1.1: Rural Fringe Housing	3
Photo 1.2: Rural Living Housing	4
Photo 1.3: Rural residential impacts	6
Photo 2.1: Saumarez Creek.	11
Photo 2.2: Aerial Photo of Commissioners Waters Creek	12
Photo 2.3: Diverse topography in the north.....	13
Photo 2.4: Diverse topography in the south.	13
Photo 2.5: The extent of Native Vegetation in the north east.....	14
Photo 2.6: The devastating impact of Bushfires in Glenorie	17
Photo 2.7: Rural Bed and Breakfast Establishment	20

Chapter 1: Introduction

1.1. Introduction

Armidale Dumaresq Council is preparing a draft Local Environmental Plan (LEP) for the entire Local Government Area. It has a large area of land zoned for rural residential development surrounding the urban area of Armidale which is considered to be in excess of the demand at the current time. Council is also preparing a strategy that will underpin the draft LEP and this study will provide the basis for the future rural residential areas within the Local Government Area (LGA).

The outcomes of the Study will be consistent with providing sustainable growth in the right locations; effective management of natural, environmental and cultural resources and values; choice in residential lifestyles that meets changing needs and demands; and an integrated delivery of infrastructure and public services which may be required.

This study has been funded by a grant from the Department of Infrastructure, Planning and Natural Resources.

The study area is the land currently zoned rural residential 1 (c) under the provisions of the Dumaresq LEP and this is shown on map 1.1. It should be noted that within this land there are also Environmental Protection 7(a), Special Uses 5(a), Industrial, 4(a), Rural 1(a) and Rural 1(f) zones.

1.2. Background

Rural residential use is the use of rural land for residential purposes where the main source of income for the household does not come from use of the land for agricultural uses, or other uses which utilise natural resources. The use of the land for rural residential development has occurred for some time, but it is becoming more of a lifestyle choice for people. The size of rural residential allotment varies from one hectare to 40 hectares to 100 hectares.

The former Dumaresq Council created a rural residential zone in 1992 for a large amount of land surrounding the City of Armidale. This zone equates to much of the current study area. The land is approximately 5 km surrounding the former Armidale City Council boundary. The provisions for subdivision within the zone were that there must be a minimum of 15 hectares and 5 or more allotments must be created with an average size of at least 2 hectares. Generally roads within the subdivisions should be sealed and the lots connected to a reticulated water supply.

The Armidale Dumaresq Planning Strategy published in 1995 recommended that rural residential development should be concentrated in areas with reasonable proximity to the City of Armidale. The strategy identified three rural residential corridors to the North, West and south of Armidale to replace the more widespread rural 1(c) zone which surrounded Armidale previously. On 22 February 1996, the former Dumaresq Council resolved to prepare a new Local Environmental Plan (LEP) to remove the subdivision provisions from the rural residential zone, thereby preventing any further subdivision to occur which was less than the minimum of 40 hectares.



Map 1.1: Study Area

1.3. Rural Residential Development

Rural residential development is the use of rural land for primarily residential purposes. The main source of income is not from a pursuit carried out on the land. On larger lots it is sometimes called 'hobby farming'. Most rural residential dwellers move there for lifestyle rather than for the land's productive potential. As a result of this and the lack of an agricultural pursuit, the household may not have any affinity with the productive potential of the land and therefore these people do not usually understand the issues associated with agriculture. This lack of understanding often leads to rural land use conflict with the adjoining or near agricultural uses.

The main thing that separates urban housing from rural residential housing is the size of the lots and distances between the dwellings, which create a sense of openness. Rural residential development, broadly speaking has two types:

Rural Fringe development is that style of development, which is within the servicing catchments and in close proximity (usually adjoining) to an urban centre. It usually has reticulated water and may have reticulated sewerage although most effluent disposal will be on site. It will also have a garbage service and sealed roads with kerb and guttering. The lot size is generally in the range of 4000 square metres to 2 hectares and it is in "estate" style of development. At the smaller lot size, it is more akin to residential than rural residential and therefore, lots of less than 1 ha are considered to be large lot urban.

Armidale Dumaresq Rural Residential Study

Rural Living development is a residential use of the land within a rural environment. It is not necessarily near an existing urban centre and does not have reticulated water or any other form of service, which would generally be provided in a rural fringe area or urban centre. The lot sizes are generally 2 hectare and larger.

Examples of Rural Fringe development are the Gungurru, Hawthorn and Lynland Park Estates. Photo 1.1 shows an aerial photo of the Gungurru Estate.



Photo 1.1: Rural Fringe Housing

Date of Photo: September 2004

Examples of Rural Living development can be found throughout the study area. It is typified by the photo 1.2 which shows a typical dwelling house in the Rockvale Road area.



Photo 1.2: Rural Living Housing

Date of Photo: September 2004

These lots are "... inhabited by an essentially urban population ... in these pleasant homesteads dotting the landscape ... the new country residents are commuters and weekenders rather than farmers." (Auster and Epps, 1993, pp 77-78)

Rural residential development has both positive and negative impacts. It has to be said that, on smaller lots, the negative impacts outweigh the positive ones. However, it provides a choice of housing and therefore should be provided but in appropriate areas which do not take away good quality and productive farmland as well as areas of high biodiversity value or be located on steep or scenically important land.

On the positive side it provides for a lifestyle choice for a number of people. It also provides for a place of business for residents who run home offices and for tradespeople who need land to store plant and equipment as well as supplies. It can also contribute to the local economy. Anecdotal evidence is also that the newer purchasers of rural residential lots have a higher income and more time to devote to the local schools and community groups.

The negative impacts can be broken into financial, community and environmental. These impacts become more problematical as the lots get smaller.

There have not been any recent studies into the costs of providing rural residential development in Australia. However, a study in the United Kingdom compared clustered and dispersed growth. This found that overall, the annual costs would be one third higher for the dispersed settlement pattern than a concentrated one. The study also found that, in terms of public costs, a scattered settlement pattern is 395% more expensive for capital and 236% for ongoing costs than a concentrated one.

Armidale Dumaresq Rural Residential Study

There are community costs associated with rural residential development. They include the provision of services and facilities to the areas that are normally located some distance from towns and villages.

The environmental costs associated with rural residential development are related to the initial development and ongoing use of the land. During construction of a rural residential area, especially rural urban fringe development, there can be clearing of native vegetation and soil erosion and land degradation.

The ongoing impacts of rural residential development stem from the onsite effluent disposal, soil and water management and domestic pets. Most rural residential development has onsite effluent disposal and this can be a concern if there is not a large enough area of land available for disposal. There is also a concern about the cumulative impact of having a large number of onsite systems in one area as can occur with rural fringe development. There can be impacts on adjoining bushland from the nutrients coming off the site as well as from weeds. Native wildlife can be eaten by domestic pets.

The building of houses in the rural area can have an impact on the landscape, especially when the land is hilly. The introduction of a number of new buildings can detract from the landscape quality of an area.

Rural residential development can also cause rural land use conflict if it is located in close proximity to intensive agricultural, mines and quarry uses. Siting the house too close to the adjoining uses can cause this.

In a majority of cases, the people who buy a rural residential lot are not aware of the issues associated with it as outlined above. Issues such as the need to service the on site effluent disposal system and the impact of pets on wildlife and weed eradication are common ones where the people don't fully understand.

Photo 1.3 of Orchard Hills in Sydney's west illustrates the issues. There is a rural urban fringe subdivision of 4000 m² lots which is separated from the urban area which can be seen in the foreground. You can also see the houses interspersed with the agricultural uses and the proximity of the rural residential development to the creeklines and native vegetation.

It can be seen therefore, that rural residential development creates a demand on the services provided by the Council and other Government agencies. To ensure that it occurs in an efficient manner, it should only be permitted if it is close to an urban area where the services and facilities are located.



Photo 1.3: Rural residential impacts

1.4. Methodology

The study has been carried out using a combination of primary and secondary data sources. Various reference sources provided by the Council have been reviewed and data collection in the form of a land use survey and holding analysis has been prepared using the Council's geographical information system and property records as a base for information gathering.

Consultation was carried out with government agencies, local environmental groups, community groups and the development and economic development industry representatives.

The land use survey entailed utilising aerial photography to gain an appreciation of the landuse, which was then field checked by a survey of all roads and properties in the study area. This information was then coded and entered into a property database, which enabled it to be mapped using a Geographical Information System (GIS). The survey was carried out in July 2004. It identified the land use for each lot within the study area. A detailed description of the methodology used for the landuse survey is contained in Appendix 1.

The landuses were categorised into the following landuse types which also have been defined in Appendix 1:

- Rural Residential
- Intensive Plants
- Intensive Animals
- Extensive Agriculture
- Vacant Cleared
- Native Vegetation
- Extractive Industries
- Public Use

Armidale Dumaresq Rural Residential Study

Within each of these categories there are a number of sub categories relating to the specific use of the land. These are also outlined in Appendix 1. It should be pointed out that the landuse survey categorised the primary use of the property and where a property had a number of uses, the dominant use was chosen. A distinction should be made between the term lot and the term holding. A lot is a single parcel of land and a holding is 1 or more lots that are held in common ownership (it includes adjoining and adjacent land, ie land that is separated by a road - either immediately opposite or diagonally opposite). Rural residential and vacant land are often referred to as lots because they are usually comprised on one lot and held in single ownership. Extensive Agriculture or what is generally called a farm is termed a holding because it comprises a number of lots.

A holding size analysis has been carried out to provide details on the amount of fragmentation in the study area. The holding size range has been categorised as follows:

- Less than 0.8 hectares
- 0.81 hectares to 3 hectares
- 3.01 hectares to 8 hectares
- 8.01 hectares to 18 hectares
- 18.01 hectares to 38 hectares
- 38.01 hectares to 42 hectares
- 42.01 hectares to 78 hectares
- 78.01 hectares to 100 hectares
- 100.01 hectares and above

These ranges were chosen to ensure that lots slightly above and slightly below the dominant lot size were covered. For example, the dominant lot size in the 0.81 to 3 hectare range is 2 hectares, but because of the application of State Environmental Planning Policy Number 1, which allowed for the varying of the minimum allotments size, it was necessary to go above and below the dominant lot size. This lot size has been used by the consultant in a number of Local Government Areas in rural NSW.

The details of the population projections, supply and demand analysis was provided from documentation prepared by the Council.

Chapter 2: Conservation and Development Issues

2.1 Introduction

There are a number of uses and issues which affect the future of rural residential development. The issues which have to be considered when we discuss the future can be grouped into two broad headings:

- Environmental Opportunities and Constraints
- Social and Economic Factors

Underlying all of the issues are the philosophies of Ecologically Sustainable Development (ESD) and Total Catchment Management (TCM). It is shown graphically in figure 2.1. The figure illustrates the interconnectedness of the issues and the fact they all must be considered in relation to each other and cannot be considered in isolation.

ESD embodies the three concepts of:

- Environmental conservation
- Social equity
- Economic prosperity

All three are interrelated and have to be considered as such. The environment in which we live has to be treated carefully so we can ensure it is left in a good state for the future generations. However, for there to be future generations, we must have settlements in which to live – be they urban areas or rural residential or in houses scattered throughout the countryside. If we are going to live in an area, there also must be a market economy. There is a need to find the balance between these three so we can have a sustainable future and can leave an intact environment to the future generations.

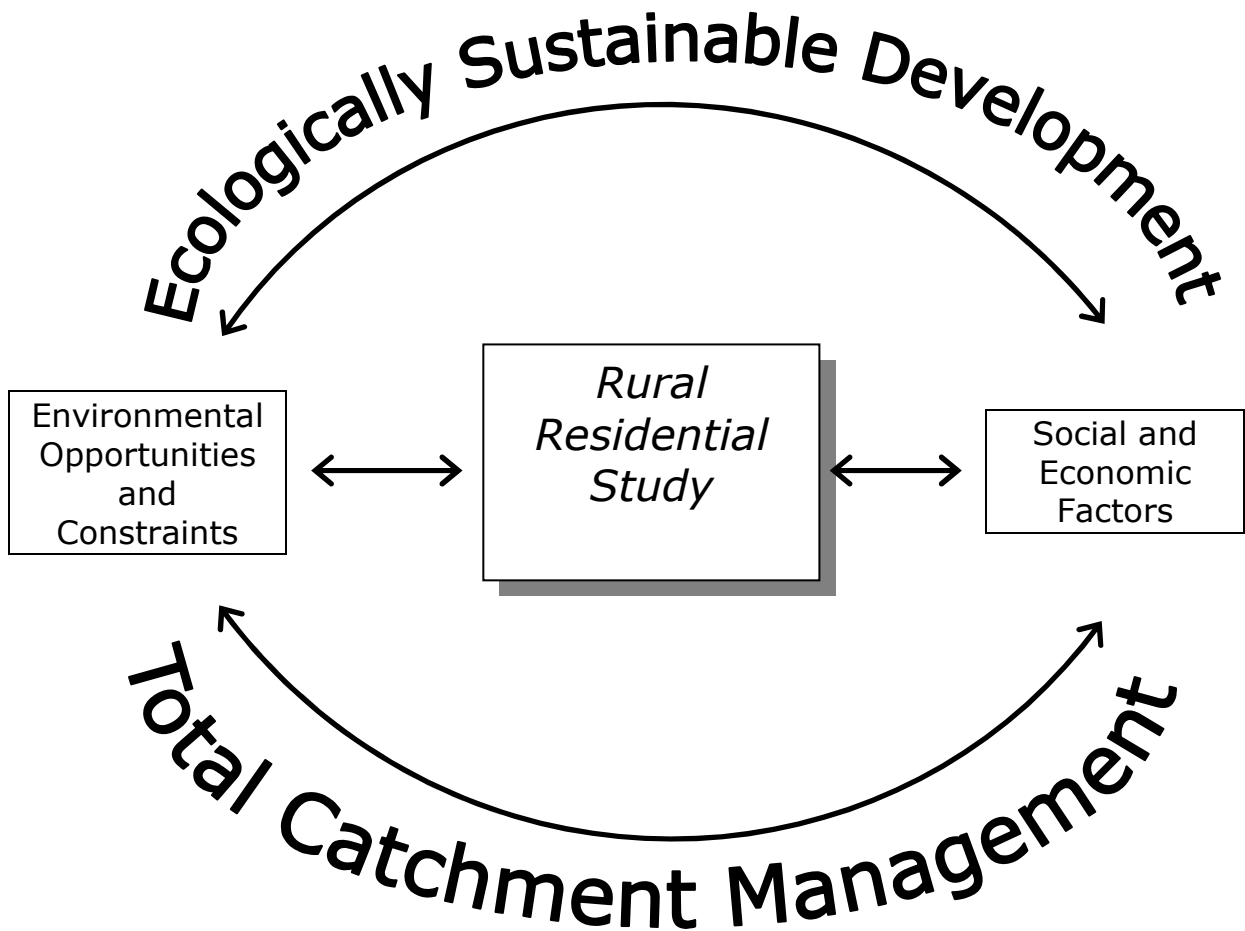


Figure 2.1: Issues and Themes for the Rural Living Strategy
Source: Sinclair 2002d

2.2 Environmental Opportunities and Constraints

The resources to enable the land to be used have to be conserved so that future generations can also enjoy and use the area. The principles of ESD and TCM are implicit to this section.

All land is within the various water catchments. Therefore, all development will have an impact on these catchments. Some uses have the potential to cause harm whilst others do not. Potentially harmful uses can be designed to minimise the impact of the use on the catchment.

The philosophy of Total Catchment Management (TCM) is one that should underlie all planning for the future uses. As such, it is an issue which is very important to the rural residential area.

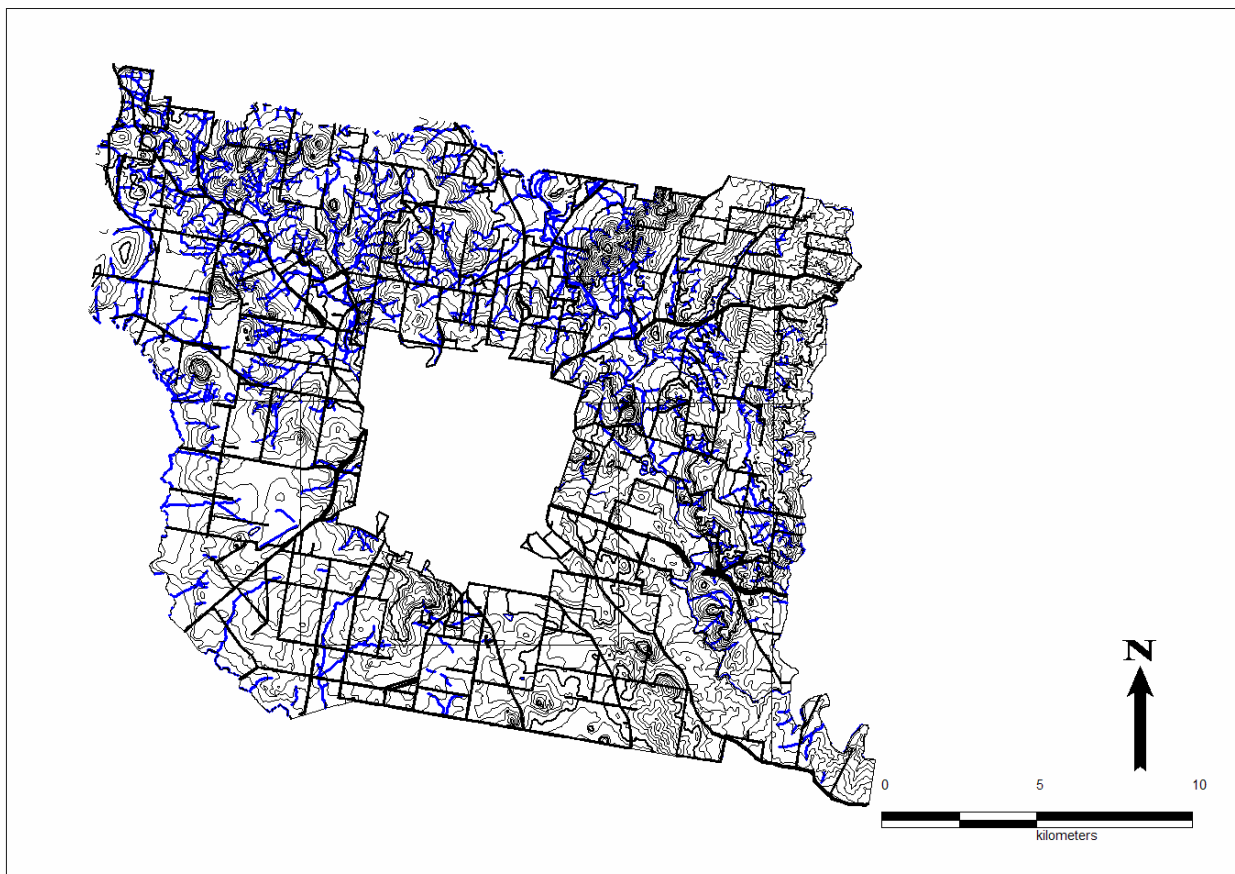
The following is a discussion of the constraints for development in the study area. It considers the things which have to be looked at before any decision is made as to the future use of the land. Some also have implications to the current management of the land.

2.2.1. Water Catchments

There are 2 major water catchments in the study area. They are as follows:

- the Saumarez Creed catchment; and
- Dumaresq, Tillbuster Ponds, Donald, Burying Ground and Commissioners Waters Creeks

Map 2.1 shows the water courses and topography of the study area.



Map 2.1: Water Catchments and Topography

The catchments are made up of number of creeks and drainage depressions which only flow when it rains. This is not to infer that the drainage depression is not as important as the larger creeks. A key objective of TCM is to ensure that landuses do not have a detrimental impact on the quality of the water in streams. It is also important to strive to improve the quality of water by ensuring that the surrounding land uses are sustainable and conform to the principles of ESD.

There are many things that can cause the waterways to become stressed. Some are as follows:

- Nutrient from rural residential, waste disposal and intensive agriculture;
- Dams and water diversions;
- Extraction from rivers and streams – both licensed and unlicensed;
- Turbidity caused by soil erosion;
- Filling of land;

Armidale Dumaresq Rural Residential Study

- Inappropriate development controls on existing uses.
- Loss of indigenous riparian vegetation.

The issue of preserving the natural flows of rivers is one that is impacted upon by a number of issues, including the number of rural dams which have the effect of holding back and trapping a large amount of water, especially during and after a long period of dry weather.

The protection and preservation of riparian land and its management is a major issue that has to be considered.

The groundwater resources of the area are an issue that needs to be considered in a regional context, but one that the use of land in the can have an impact on. Groundwater is also part of the wider ecosystem and any changes to it will impact upon other aspects of the environment.

Photos 2.1 and 2.2 show aspects of the water catchments.



Photo 2.1: Saumarez Creek.

Date of Photo: July 2004



Photo 2.2: Aerial Photo of Commissioners Waters Creek

Date of Photo: September 2004

2.2.2. Topography

The study area has varying topography. In the north and east the land is steeper and has a plateau and in the south it is flat to undulating with some steep land adjoining the urban area. This can be seen on Map 2.1.

This is particularly important for rural residential development. It is not just the slope of the land that the dwelling is proposed to be built on, but also the access to that land. As the land becomes steeper, there is more potential for land degradation to occur from unsealed accessways. As a general rule, 20% or more slope creates land degradation and should be avoided.

Effluent disposal on sloping land can cause it to become damp which can lead to erosion and slippage.

Bushfire hazard is also higher on steep land that is heavily vegetated.

Photos 2.3 and 2.4 show the topography in the southern and northern parts of the study area.



Photo 2.3: Diverse topography in the north.

Date of Photo: September 2004



Photo 2.4: Diverse topography in the south.

Date of Photo: September 2004

2.2.3. Biodiversity

Biodiversity includes native vegetation including the canopy and ground cover. It provides a habitat for birds and insects. It also is an important component of the natural heritage values of the area and provides for recreation and other issues associated with the urban and rural environment.

It is noted that there is not a lot of large tracts of native vegetation in the study area and that a major proportion of the land has been cleared over the years for grazing purposes. However there is some scattered areas of native vegetation particularly in the north and east which is associated with some of the more steep land. There are also some rural residential lots that have been cleared for the dwelling house and which have some areas of native vegetation located on them.

Photo 2.5 shows the extent of native vegetation in the north east study area.



Photo 2.5: The extent of Native Vegetation in the north east.

Date of Photo: September 2004

2.2.4. Soil

The maintenance of soil is a major consideration and there is a need to consider the impacts of land degradation, especially soil erosion. It is both a management issue as well as being associated with the future development of the land.

Soil erosion and sedimentation is an issue which becomes worse, as the uses become more intensive. It is also an issue for the more steeply sloping land and the construction of dwellings, particularly rural residential uses.

Soil erosion becomes more of a problem with the dispersive clay soils. The clays stay in suspension in the water for longer periods and cannot be trapped by conventional sediment controls.

This is an issue for the environmental as well as the human impact of development.

2.2.5. Bushfire

The main source of bushfire threat in the study area is from grass fires as well as some of the areas of native vegetation in the north and east of the study area. The Rural Fire Service have prepared a Bushfire Prone map for the LGA and the coverage for the study area is shown on map 2.1. It should be pointed out however, that although there is not a large amount of land identified as being bushfire prone, this does not mean that bushfires will not occur in the area. As stated above, grass fires are a potential threat in the more cleared areas.

The protection of the identified community assets is a key issue as is the preservation of biodiversity within the rural lands.

Managing the bushfire risk is noted as the key factor in dealing with the bushfire hazard. One of the management options is risk avoidance and therefore, land that is prone to bushfires should not be rezoned and subdivided where an adequate fire protection zone cannot be established.

Bushfire Risk Management includes the identification of the level of risk posed by bushfires to the assets and establishing strategies to protect those assets from the adverse effects of the fires. The purpose of bushfire risk management is to protect the community and its values from the adverse effects of wildfire. One key element of bushfire management is to achieve better integration of community preparedness and prevention strategies.

The NSW Rural Fire Service and Planning NSW have recently released an updated set of guidelines called *Planning for Bushfire Protection*. These guidelines should be used to develop planning policies as part of the strategy. There has also been a change to the legislation concerning bushfires to provide a stronger and more efficient mechanism for planning for bushfire protection. The changes cover hazard reduction activities as well as planning and development control matters on land that is identified as being prone to bushfire. Key features include:

- Identification of bushfire-prone areas;
- Planning principles to be considered when councils are rezoning;
- Latest hazard assessment method to work out appropriate setbacks;
- Location of developments in areas of bushfire hazard based on latest CSIRO research on bushfire behaviour;
- Appropriate level of building construction relevant to setback distances; and
- Special setback distances for special use developments (such as aged care facilities).

The major items that affect the future of the bushfire prone land are:

- the requirement to produce bushfire prone lands maps; and
- the revised Ministerial Direction that requires that the Council must consider the following matters in preparing any changes to the zoning (preparing a LEP):
 - 1) Consult with the Commissioner of the NSW Rural Fire Service under section 62 of the Act, and take into account any comments so made;
 - 2) Have regard to *Planning for Bushfire Protection 2001*; and

Armidale Dumaresq Rural Residential Study

- 3) Where development is proposed, comply with the following provisions, as appropriate:
- (a) provide an Asset Protection Zone (APZ) incorporating at a minimum:
 - (i) An Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property; and
 - (ii) An Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road;
 - (b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the draft local environmental plan permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with;
 - (c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks;
 - (d) contain provisions for adequate water supply for fire fighting purposes;
 - (e) minimise the perimeter of the area of land interfacing the hazard which may be developed;
 - (f) introduce controls which avoid placing inappropriate developments in hazardous areas;
 - (g) introduce controls on the placement of combustible materials in the Inner Protection Area; and
 - (h) ensure that bushfire hazard reduction is not prohibited within the APZ.

The direction makes the following statement in regards to the rezoning of land:

If the draft local plan does not comply with the provisions listed in paragraph 3, the Council must obtain written advice from the Commissioner of the NSW Rural Fire Service, to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the draft local environmental plan.

Photo 2.6 shows a house that was burnt in the January 2003 bushfires in the Sydney Region. It points out the need for an adequate asset protection zone.



Photo 2.6: The devastating impact of Bushfires in Glenorie

Date of Photo: February 2003

2.2.6. Flooding

Flooding in the area is not considered to be a major issue. It is mostly localised flooding in times of heavy rain and there is not a significant flooding of major roads.

2.2.7. Weeds

Weeds are one of the most serious threats to Australia's natural environment and primary production. They can destroy the native species, contribute significantly to land degradation and reduce farm and forest productivity. The National Weeds Strategy has identified the problem and states that the cost of weeds to Australia is approximately \$3.3 billion per annum. The New South Wales weeds strategy estimates the value of control and lost production at \$600 million per annum. Both the National and State strategies identify funding, education and better coordination of control programs as being important.

There is a need therefore to consider the preparation of Weed Management Plans for developments that have the potential to cause the spread of weeds by clearing large tracts of land or that generate effluent in sufficient quantities that may kill native vegetation which then allows for the weeds to invade the bushland.

2.3 Social and Economic Factors

The interaction of humans with the environment is an important component of any strategy dealing with the future of rural land.

2.3.1. Agriculture

Agriculture within the study area is mostly grazing of cattle and some sheep. There is a vineyard located on Dangarsleigh road and a nursery on Long Swamp Road. There is a poultry operation associated with the University of New England research facility on Curlew Road.

The agricultural suitability classification of the study area is mostly class 3 with some pockets of class 2 land in the south. The land in the North has significant amounts of class four and five land within it. There is some potential for intensive agricultural uses within the study area. This is mainly focused around intensified plant use such as cool climate vineyards and some cut flowers that could be used in association with the irrigated effluent from the sewage treatment plant.

2.3.2. Land Use and Fragmentation

The land use within the study area is diverse. The details are provided in chapters 4 and 5. The fragmentation of the land is also discussed in chapters 4 and 5. This is an issue because the mixture of land uses and holding sizes will influence the future pattern of development and how it looks.

2.3.3. Rural Land Use Conflict

The presence of agriculture and non-rural land use in the one location can often generate conflict due to their potential incompatibility. Agriculture can affect adjoining small rural lots, which are used essentially for residential purposes. Similarly, the presence of small rural lots creates an adverse influence on the continued operation of the agricultural enterprise. The issue of rural-urban conflict can arise when there is no separation between incompatible uses, let alone the misunderstanding, which may exist about the purpose and character of a district. Land use conflicts may arise in such situations through noise, odour, farm chemicals, light, visual amenity, dogs, and stock damage and weed infestation, to name just a few.

This conflict adds to the conversion of an area from rural to rural residential as the agricultural uses are forced to move because of the conflict. It is a paradox that people will move into a rural area because of the open spaces and agricultural uses and then when the agriculture starts to smell or the noise of the tractor or pump is too loud, the rural residents complain and the agricultural use is forced to alter its operations. This causes the agriculture to become less economically sustainable and the use changes to a residential one as the farmer sells up and moves out. This is shown by anecdotal evidence and experience of the consultant working in fringe metropolitan and rural areas as well as discussions with planners and farmers in the USA.

One issue that has to be addressed is the basic planning principle of the new use blending in with the current one. This has not happened in the past with dwelling houses being permitted to locate next to boundaries with no consideration of the impact it may have on the agricultural use on the next door property. This leads to rural land use conflict and experience in other areas has led to the agricultural use having to move.

2.3.4. Domestic Effluent Management

This is perhaps the most important impact of human settlement on the water quality of the surrounding streams and the general environment.

Most of the rural residential areas are not served by reticulated sewerage.

Armidale Dumaresq Rural Residential Study

The NSW Government has released Environment and health Protection Guidelines for On-site Sewage Management for Single Households, which have to be complied with for all new on-site effluent disposal systems.

The Council have prepared an On-site Sewage Management Strategy which is to provide a framework to allow Council to regulate and manage the installation, operation and maintenance of all on-site sewage management systems with the objectives of:

- Protection of groundwater
- Protection of surface water
- Protection of land and vegetation
- Prevention of public health risk
- Maintaining and improving community amenity
- Ensuring maximum re-use of resources consistent with other objectives
- Ecologically sustainable development

This will be an important issue to be looked at when considering rural residential development.

2.3.5. Infrastructure

Infrastructure such as water, electricity, telephone is necessary for the provision of rural residential development. The study area is well served by electricity and telephone, although there are some reports of problems at times.

Water and Sewerage provision is the responsibility of the Council and is an issue that needs to be addressed. The limitations in water supply to the area are not in the capacity of the main water storage, but in the capacity of the pipeline from the storage to Armidale and the treatment plant at Armidale. These will have to be augmented for the future growth needs of the urban and rural residential areas.

Sewerage capacity is sufficient and can be extended to any rural fringe areas, however there would need to be specific investigations carried out for each area identified.

2.3.6. Access and Roads

The study area has a number of formed roads but also has a lot of unformed roads that are marked on maps but not formed. Council has a Development Contribution Plan for upgrading of roads within the Shire and also funds road upgrading through general revenue.

Council has a requirement for sealed roads for internal roads within any subdivision and also will require upgrading of any roads that lead to the subdivision.

2.3.7. Economic Development

The Council has an economic development strategy which seeks to maintain and expand existing businesses. It sees future growth for the future intellectual property and research related to the University and its rural research facilities as well as tourism based uses such as the wine and food sectors as well as boutique accommodation. The creative arts is another area the Council is focusing on.

In terms of the study area, is considered that small-scale boutique accommodation in the form of bed and breakfast and wineries are the sector of the tourism market that could be built upon. There are already a number of bed and breakfast establishments within the area such as that shown in photo 2.7 below.



Photo 2.7: Rural Bed and Breakfast Establishment

Date of Photo: July 2004

2.3.8. Heritage

Heritage of the area is an important component and includes both Aboriginal and European heritage.

The Council has details about the European Heritage resources in the area, which include the following:

- Woodpark Cottage on Old Inverell Road
- Moore Park on the New England Highway
- Saumarez on the New England Highway
- Palmerston Homestead on Dangarsleigh Road
- Dumaresq Railway Station
- Dumaresq Railway Stationmasters residence

Armidale Dumaresq Rural Residential Study

There is not much knowledge of Aboriginal Heritage of the area.

2.3.9. Rural Landscape Character

The rural landscape character of the study area is linked to that of the surrounding rural land as well as the built features of the Armidale Urban area.

The varying topography of the study area dominates the visual features of the landscape as it provides a framework for other elements such as vegetation, agriculture, lot sizes, viewpoints and the location of major transport and communication corridors.

Landscape character has been described as being determined by the physical and emotional response people have to their particular surroundings.

It is the rural landscape that attracts people to the area – both as tourists and to live. It is therefore important to ensure that this character is preserved by not allowing buildings to intrude into it. This can be done by managing the siting, design and materials of the buildings.

2.3.10. Community Services and Facilities

The provision of Community Services and Facilities is an important issue for people who live in the study area. These are provided in a centralised fashion in the urban area of Armidale and there is a need to ensure that any rural residential development has easy access to these services and facilities.

Chapter 3: Stakeholder Consultation

3.1. Introduction

Consultation with the stakeholders is an integral component of the Rural Residential Study. The stakeholders in this case are the residents who live in the area, the Government Agencies, Environmental Groups and the development industry. Consultation gives the Council an opportunity to listen to what the community desires for the future of the area as well as allowing the Council to explain to the community the development issues and wider context of policy development within the region and NSW. It is also important to recognise that the community is vitally interested in the future of the area and as such should have input into the development of policies for the future. The Council sees consultation as a major component of the Strategy.

The consultations were facilitated by the consultant.

3.2. Consultation Workshops

A series of workshops were held over 2 days in August 2005. Meetings were held as follows:

- Government Agencies 3 August
- Local Area Committees 3 August
- Development Industry 4 August
- Environmental Groups 4 August

The Government Agency, Development Industry And Environmental Group consultations were facilitated by writing the issues presented by the group on to butcher's paper which was then transcribed. During the community liaison committee's consultation, the participants were asked to identify the Liabilities, Assets, Needs and Dreams that they had for the area. These were then written down on butcher's paper by the facilitator, transcribed and distributed to the committees.

3.3. Workshop Outcomes

A summary of the outcomes of the workshops are presented below. There are a number of themes that run through the workshop responses, which are listed in no particular order below:

- Lifestyle
- Environment
- Rural Landscape and Impact of Dwellings
- Open Spaces
- Sense of Community
- Loss of Privacy
- Population Increases
- Infrastructure-Water, Sewerage, Communication, Electricity and Roads
- Further Subdivision
- Dwellings on vacant land
- Land Management
- Rural Land Use Conflict
- Lack of Recreational Facilities and Pathways
- Pollution-Noise, Water and Light
- Rubbish Dumping
- Flexibility of Policies
- Land Supply and Demand
- Strategic Approach to Future

Armidale Dumaresq Rural Residential Study

- Biodiversity and Wildlife
- Small Lots on the Edge of Town
- Variety of Lot Sizes
- Rural Amenity
- Recreational Opportunities for Youth and Young Children
- Control of Animals and Weeds
- Planning
- Effluent Disposal
- Bushfire Management
- Airport
- Agriculture and Use of Irrigated Effluent
- Road Width, Quality and Traffic
- Public Transport

A full list of the outcomes of the workshops as transcribed from the butchers paper is presented in Appendix 2.

It can be seen that there are a diverse range of views. Whilst there are some who live in the area who want to subdivide their land, there are others who don't want subdivision and they cite the reason that it will introduce more people into the area which will erode the quality of life that they enjoy.

Chapter 4: Development Pattern

4.1. Introduction

This Chapter presents selected data and characteristics of the localities within the study area. The boundaries of the localities comes from the Geographic Names Board's list of localities and has been provided by the Council.

Details presented include the following:

- Population
- Number of dwellings
- Total number of rural lots
- Number of primary uses
- Land use and lot size graphs
- General comments

The population data is based on the dwellings that were counted in the land use survey and then multiplied by the 2001 Census average household size of 2.6 persons per dwelling.

The number of rural lots includes all of the rural residential, vacant and public use lots within the locality and the number of extensive agriculture holdings.

Rural residential uses, because they are a residential use of the rural land are on one lot, however, extensive agriculture, because it relies on land of 100 ha and more, are usually made up from a number of lots.

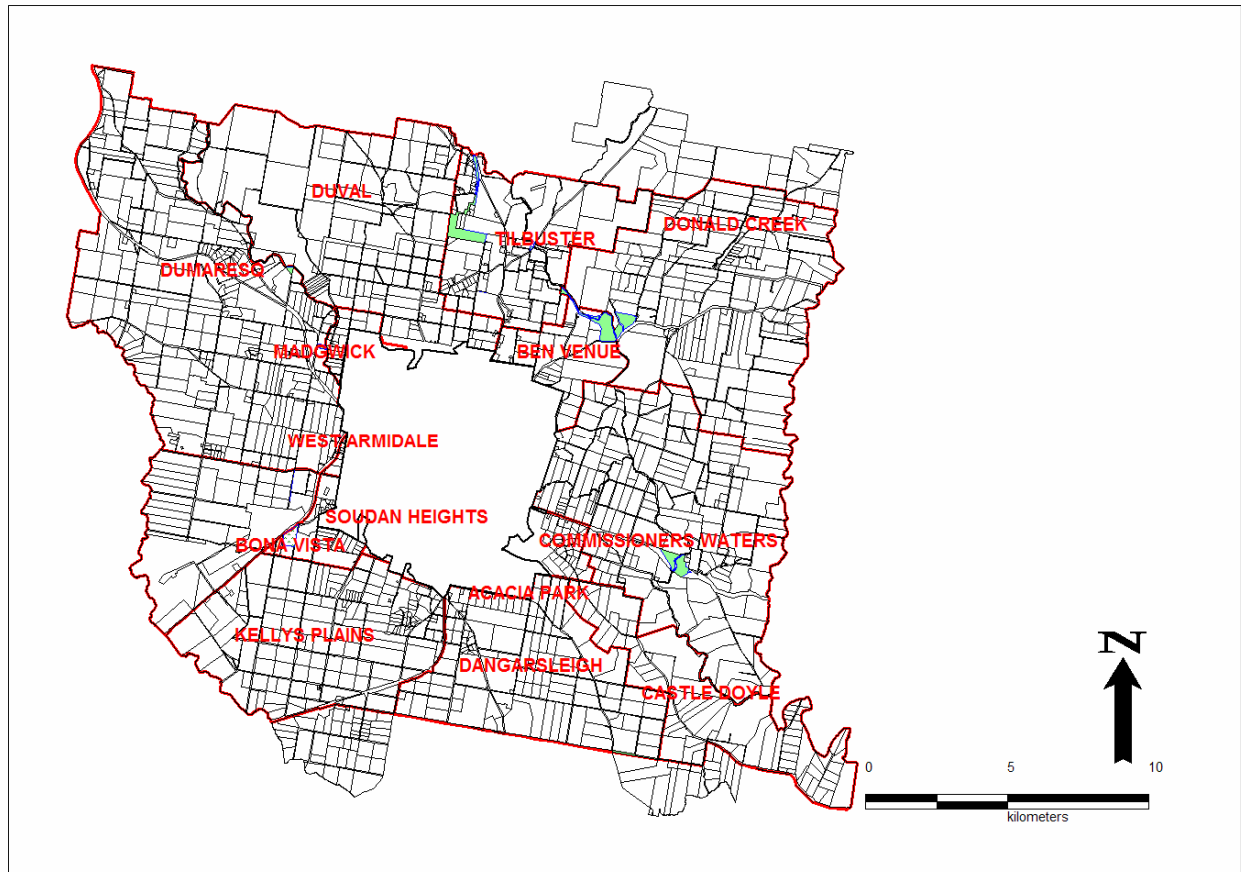
The land use details come from the land use survey carried out as part of this study and the lot size graph data is based on Council's property system. The definition of the land use categories is provided in appendix 1.

The number of primary uses in each locality are provided.

Land use and holding size graphs are provided to give an indication of the land uses in each locality as well as the lot size range.

Due to data base incompatibility, the land use counts the number of lots and the holding size counts the holdings. For this reason, the total number of lots in the land use survey differs from the totals for the holdings.

Map 4.1 shows the location of each of the localities within the study area.



Map 4.1: Locality Boundaries

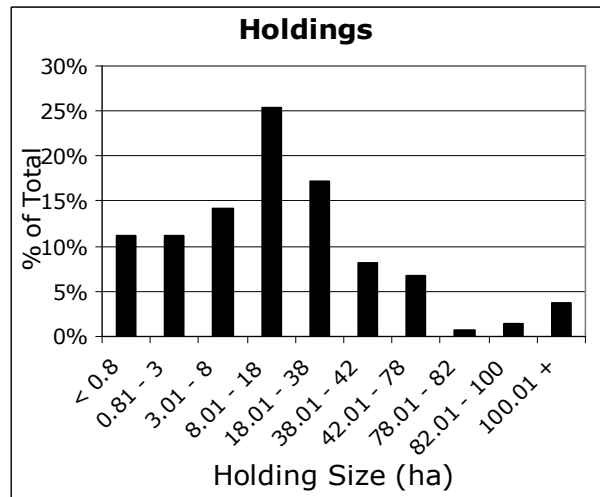
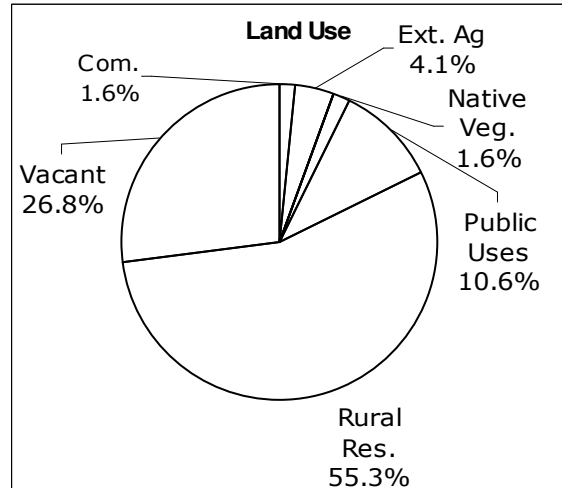
4.2. Armidale – Commissioners Waters - Newling

General Characteristics

Population (estimate)	187
Dwellings	72
Total Number of Rural Holdings	123
Number of Rural Residential uses	68

Number of Properties in Each Category

Land Use	Number
Rural Residential	68
Extensive Agriculture	5
Native Vegetation	2
Vacant	33
Public Use	13
Commercial	2
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in the eastern part of the study area.
- Mostly rural residential and vacant uses with public uses (Sewage Treatment Plant and Electricity substation)
- Highest proportion of holdings in 8 – 18 ha range then 18 – 38 and 3 – 8 ha ranges
- Steep to undulating land with Commissioners Waters Creek running through it
- Vegetation scattered with some pockets of denser vegetation.
- Waterfall Way is a main road and goes through the locality

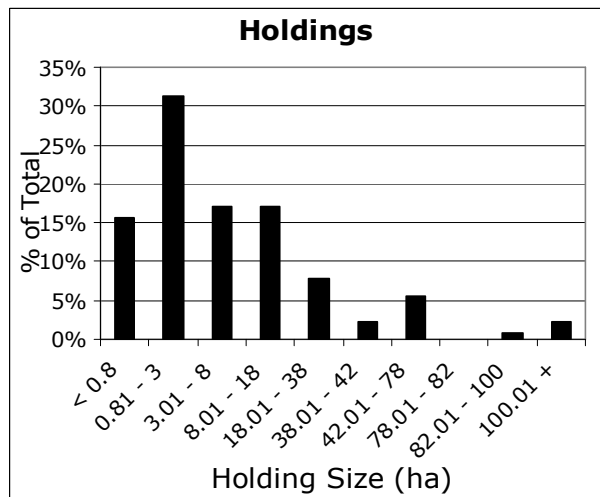
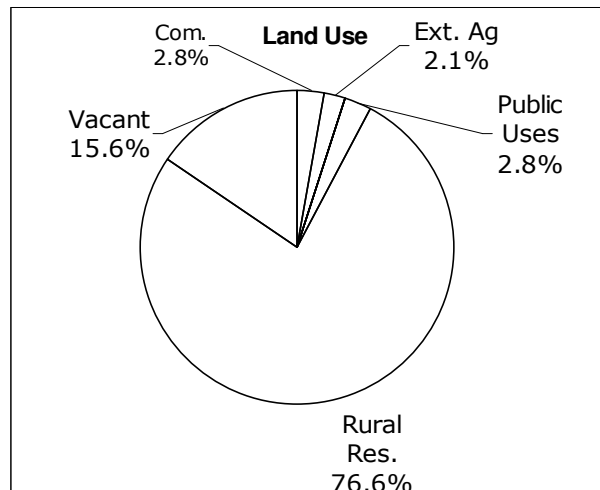
4.3. Ben Venue – Tillbuster

General Characteristics

Population (estimate)	283
Dwellings	109
Total Number of Rural Holdings	141
Number of Rural Residential uses	108

Number of Properties in Each Category

Land Use	Number
Rural Residential	108
Extensive Agriculture	3
Native Vegetation	
Vacant	22
Public Use	4
Commercial	4
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located on the north of the study area.
- High proportion of rural residential and vacant uses
- Holding mostly in 0.8 – 3 ha range followed by 3 – 8 and 8 – 18 ha range
- Steep to undulating land with Commissioners Waters Creek running through it
- Vegetation scattered with some pockets of denser vegetation.
- New England Highway runs through locality

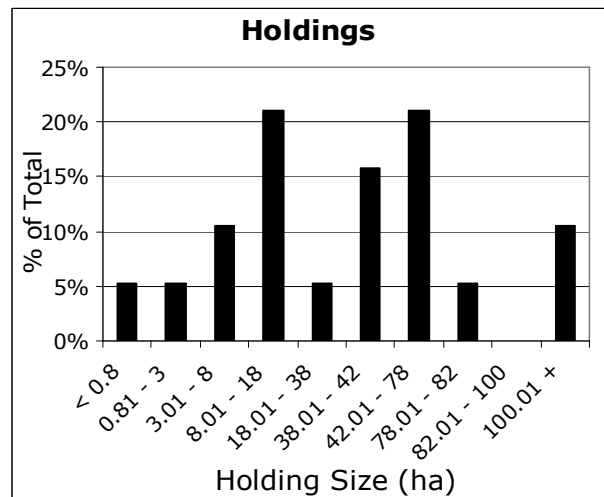
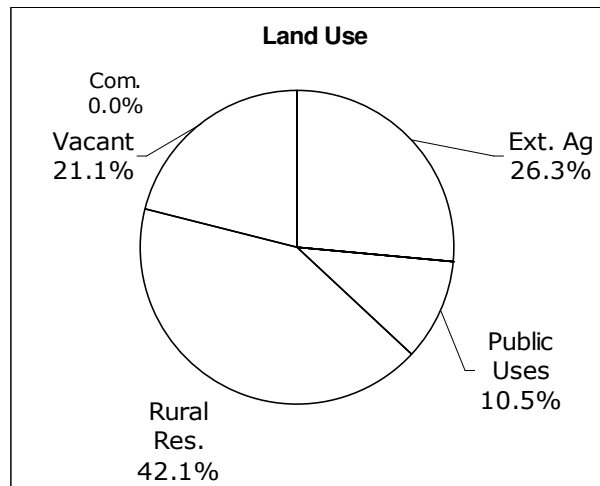
4.4. Bona Vista – Saumarez

General Characteristics

Population (estimate)	29
Dwellings	11
Total Number of Rural Holdings	19
Number of Rural Residential uses	8

Number of Properties in Each Category

Land Use	Number
Rural Residential	8
Extensive Agriculture	5
Native Vegetation	
Vacant	4
Public Use	2
Commercial	
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in the south west of the study area
- Mostly rural residential and vacant uses with extensive agriculture
- Highest proportion of holdings in 8 – 18 ha range then 42 – 78ha and 38 – 42 ha ranges
- Mostly flat land
- Very sparse amounts of vegetation.
- New England Highway goes through the locality

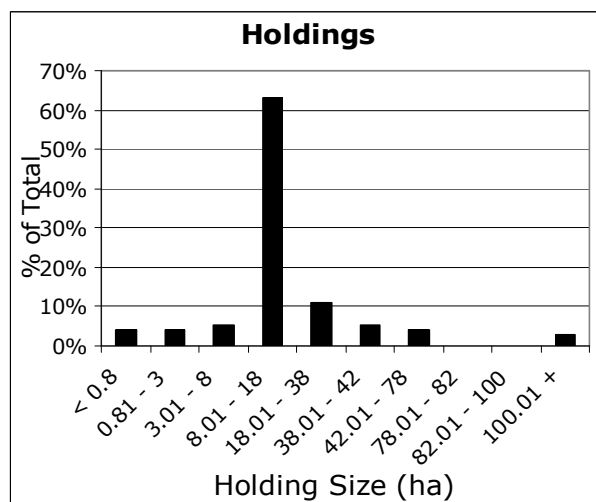
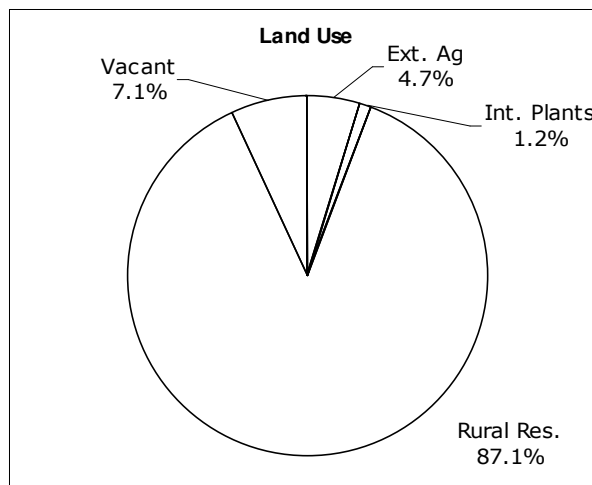
4.5. Castledoyle

General Characteristics

Population (estimate)	198
Dwellings	76
Total Number of Rural Holdings	85
Number of Rural Residential uses	74

Number of Properties in Each Category

Land Use	Number
Rural Residential	74
Extensive Agriculture	4
Native Vegetation	
Vacant	
Public Use	
Commercial	
Intensive Plants	1
Extractive Industry	
Intensive Animals	



General Comments

- Located in the south east of the study area
- Mostly rural residential land use with 2 intensive plant uses
- Most holdings are 8 – 18 ha
- Mostly flat with some low ridges south of Castledoyle Rd
- Scattered vegetation

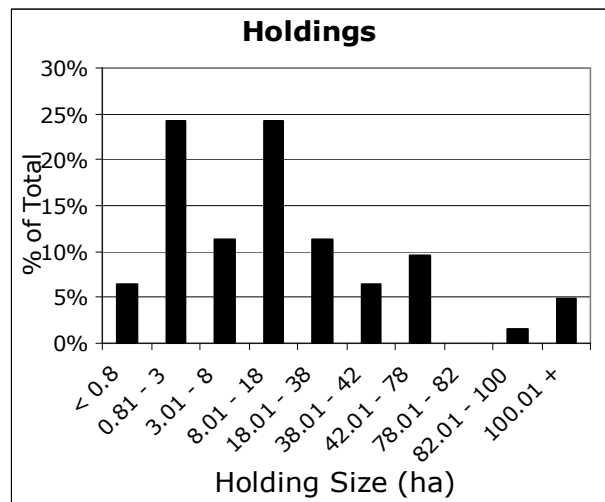
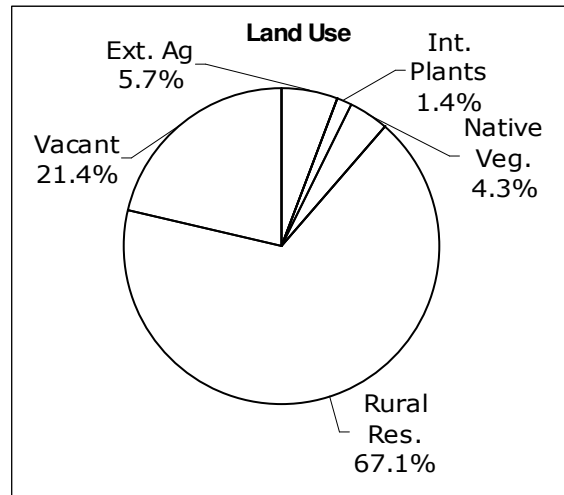
4.6. Dangarsleigh

General Characteristics

Population (estimate)	133
Dwellings	51
Total Number of Rural Holdings	70
Number of Rural Residential uses	47

Number of Properties in Each Category

Land Use	Number
Rural Residential	47
Extensive Agriculture	4
Native Vegetation	3
Vacant	15
Public Use	
Commercial	
Intensive Plants	1
Extractive Industry	
Intensive Animals	



General Comments

- Located in the south of the study area
- Mostly rural residential with significant number of vacant lots and a vineyard
- Range of holding sizes with most less than 18 ha
- Flat to undulating land with low ridge to the east
- Sparsely vegetated

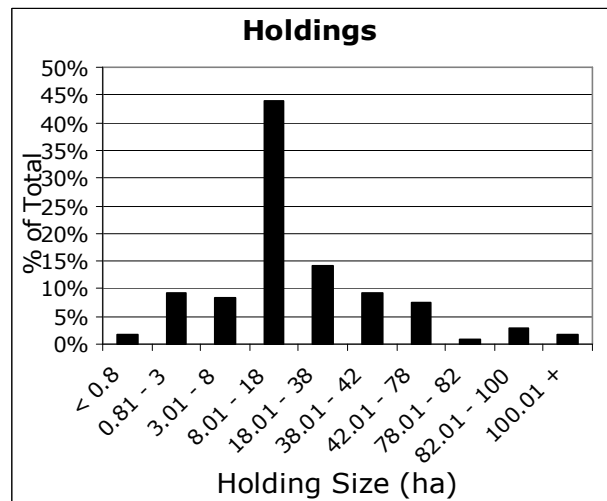
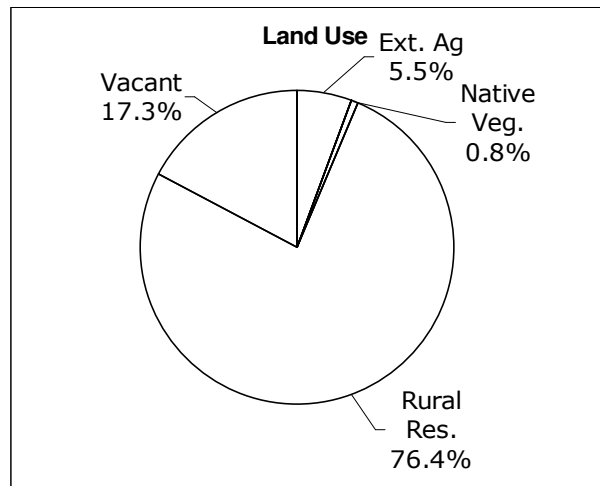
4.7. Donald Creek

General Characteristics

Population (estimate)	263
Dwellings	101
Total Number of Rural Lots	127
Number of Rural Residential uses	97

Number of Properties in Each Category

Land Use	Number
Rural Residential	97
Extensive Agriculture	7
Native Vegetation	1
Vacant	22
Public Use	
Commercial	
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in the north east of the study area
- Land use mostly rural residential with significant number of vacant lots
- Holdings mostly 8 – 18 ha
- Flat to undulating with some steep areas particularly in the north west
- Vegetation moderate with some heavily vegetated areas

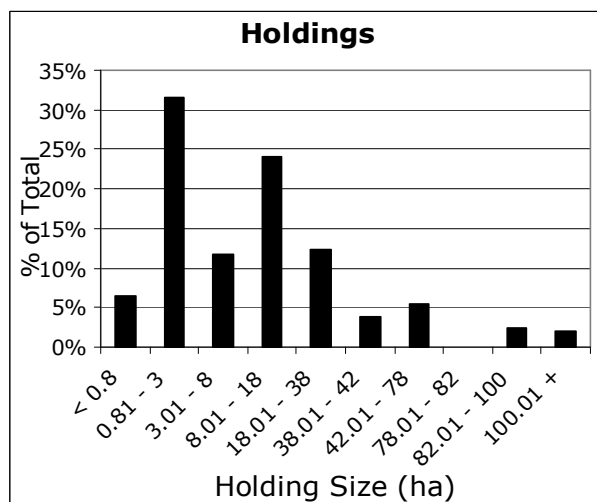
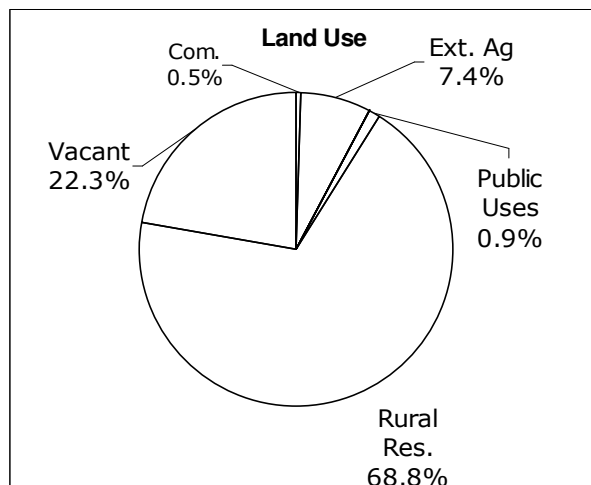
4.8. Dumaresq – West Armidale

General Characteristics

Population (estimate)	406
Dwellings	156
Total Number of Rural Lots	215
Number of Rural Residential uses	148

Number of Properties in Each Category

Land Use	Number
Rural Residential	148
Extensive Agriculture	16
Native Vegetation	2
Vacant	48
Public Use	2
Commercial	
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in the west and north west of the study area
- Land use mostly rural residential with significant number of vacant lots
- Varying range of holdings with significant number of 0.8 - 3 and 8 - 18 ha
- Flat to undulating with some significantly high points
- Moderately vegetated

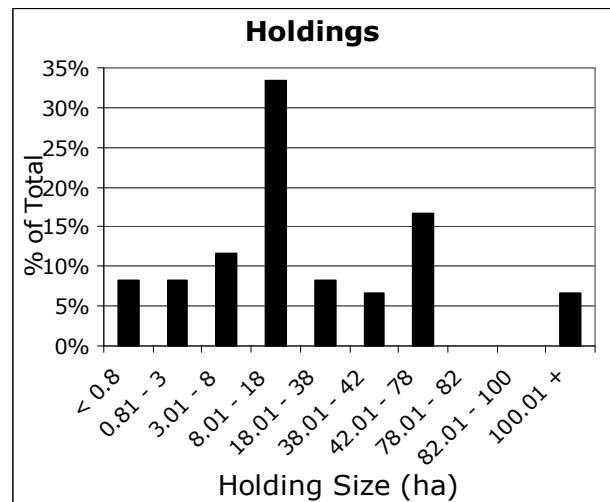
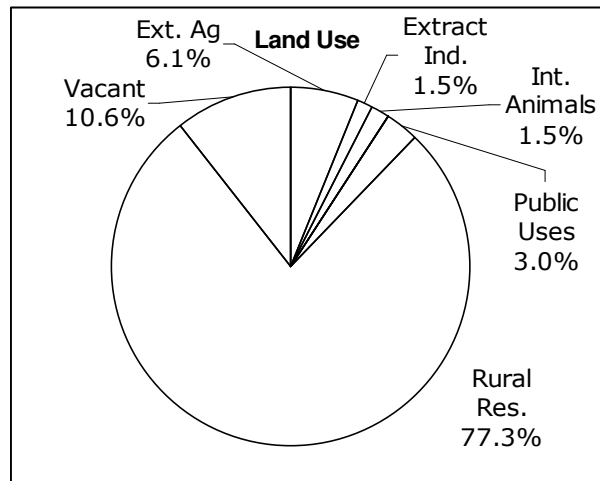
4.9. Duval

General Characteristics

Population (estimate)	138
Dwellings	53
Total Number of Rural Lots	66
Number of Rural Residential uses	51

Number of Properties in Each Category

Land Use	Number
Rural Residential	128
Extensive Agriculture	4
Native Vegetation	
Vacant	28
Public Use	5
Commercial	
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in north west of the study area adjoining University
- Mostly rural residential with scattering of other land uses
- Holdings mostly 8 - 18 ha
- Steep to undulating land with plateau
- Moderately to scattered vegetation

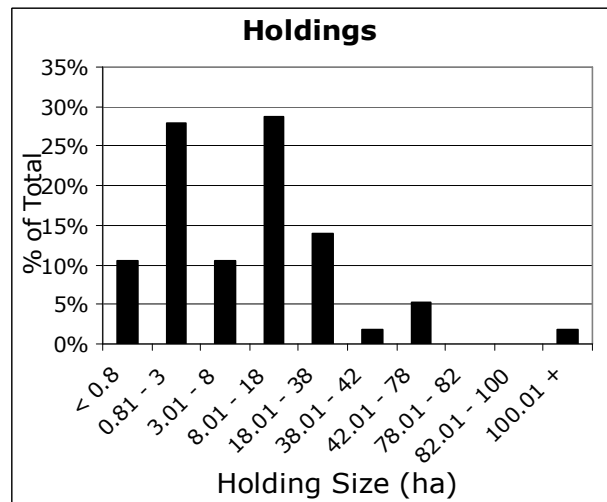
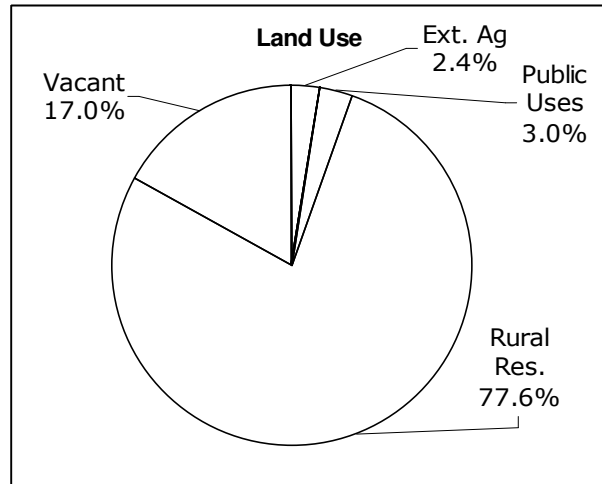
4.10. Kellys Plains

General Characteristics

Population (estimate)	341
Dwellings	131
Total Number of Rural Lots	165
Number of Rural Residential uses	128

Number of Properties in Each Category

Land Use	Number
Rural Residential	128
Extensive Agriculture	4
Native Vegetation	
Vacant	28
Public Use	5
Intensive Plants	
Extractive Industry	
Intensive Animals	



General Comments

- Located in the south and west of the study area
- Mostly rural residential with significant amount of vacant land
- Holdings mostly in .08 - 3 ha and 8 - 18 ha range
- Mostly flat with some steep land in the north east
- Scattered and sparse vegetation

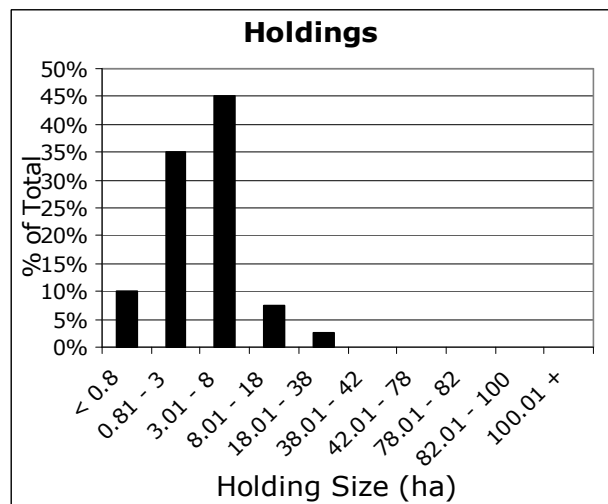
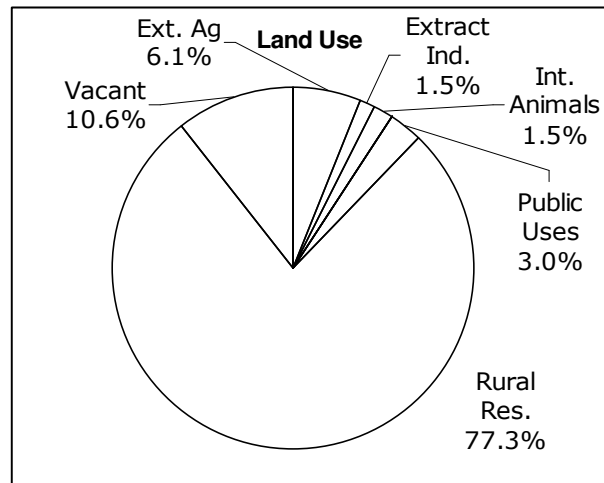
4.11. Newling

General Characteristics

Population (estimate)	99
Dwellings	38
Total Number of Rural Lots	41
Number of Rural Residential uses	38

Number of Properties in Each Category

Land Use	Number
Rural Residential	38
Extensive Agriculture	
Native Vegetation	
Village	
Vacant	1
Public Use	1
Intensive Plants	
Extractive Industry	1
Intensive Animals	



General Comments

- Located in eastern part of the study area adjoining urban area
- Has Gungurru estate located in it
- Mostly rural residential land use
- Most holdings are 0.8 – 3 and 3 – 8 ha range
- Mostly flat
- Scattered vegetation

Chapter 5: Strategic Environmental Assessment

5.1. Introduction

The previous chapters have described the issues for future development as well as the aspirations of the community towards the rural residential development of the area. The discussion of issues has showed that there are a number of matters that need to be considered for the future rural residential development of the area.

This chapter presents a strategic environmental analysis of the issues identified in the Growth Management Strategy and discusses options that can be pursued as part of the draft strategy.

A strategic environmental assessment is an assessment of a set of strategic options. It can be defined as the formalised, systematic and comprehensive process of evaluating the environmental impacts of an action and its alternatives. (Therivel et al)

"Strategic environmental assessment is the term used to describe the application of environmental assessment to various stages in the planning process that occur prior to the consideration of specific projects. It may be given another name, depending on the nature of the planning stage involved.

Regardless of the terminology used, strategic assessment primarily differs from project-specific assessment in terms of scale and timing. In regard to scale, strategic assessment:

- i) incorporates a number of potential developments as opposed to a single project;*
- ii) considers a broader range of alternatives;*
- iii) involves a wider geographic area; and,*
- iv) addresses environmental impacts at a more aggregated level.*

In terms of timing, the period between the conduct of a strategic assessment and the resulting environmental impacts will be longer than is the case with project-specific assessments." (OECD, 1999 p5)

This chapter will provide an analysis of the study area highlighting the matters that need to be considered for any future rural residential development within the area. These are as follows:

- Physical constraints
- Existing development pattern
- Infrastructure provision
- Supply and demand

Each will be discussed separately.

5.2. Physical Constraints

The physical constraints of the study area are defined by topography, creeks and drainage lines as well as vegetation. This has been described in chapter 2 and can be summarised as follows:

- Steeper land in the north west and north east of the study area
- Generally flatter in the south of the study area
- Small plateau in the north
- Pockets of steeper land in the south along Dangarsleigh Road and the northern part of Gostwick Road
- Major creek lines in the north and north east of the study area associated with the topography

The vegetation is sparsely scattered throughout the study area. There are some concentrations of areas of vegetation in association with the more steep land in the north and north east. There is also significant vegetation associated with the National Parks which are former State Forests within the study area. Most of the southern part of the study area is cleared of vegetation. Overall it could be said that the presence of vegetation is not considered a major constraint in the south but does present some constraints to further development in the north of the study area particularly in the north east and east sectors.

5.3. Existing Development Pattern

The existing development pattern of the study area is defined by the mixture of land use and the land ownership pattern.

5.3.1. Land Use

The land uses within the study area are diverse. They can be classified into 9 broad categories (which are defined in Appendix 1) as follows:

- Rural Residential
- Intensive Plants
- Intensive Animals
- Extensive Agriculture
- Vacant Cleared
- Native Vegetation
- Extractive Industries
- Public Use

The overall landuse for the area is shown in Figure 5.1 and Table 5.1 below. Map 5.1 shows the spatial distribution of the land use. It can be seen that the largest landuse (in terms of the number of holdings) is rural residential with 72.4 % of all rural holdings having a residential use as the major use of the property. Vacant land is the next most dominant with 18.2%. Extensive Agriculture (5.0%) the third highest. Then it is Public Uses, Native Vegetation, Commercial, Extractive Industries and Intensive Animal uses.

It should be noted that dwellings are located on all rural residential lots. It has been noted in chapter 2 that the extensive agricultural holdings are made up of a number of lots, one of these lots has a dwelling house located on it.

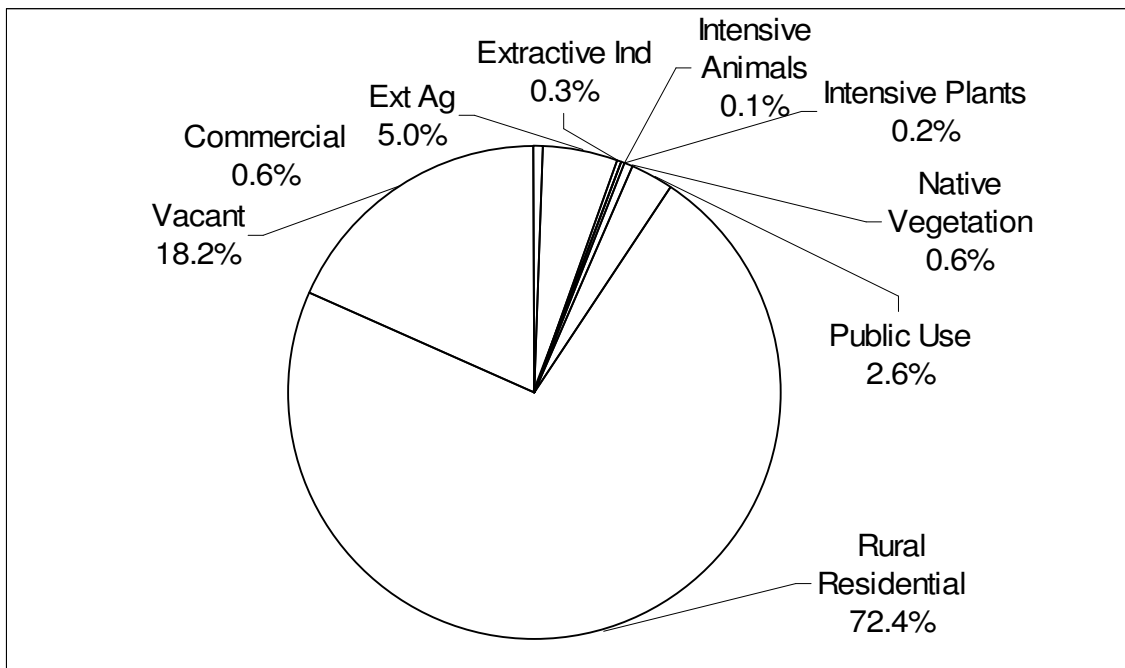
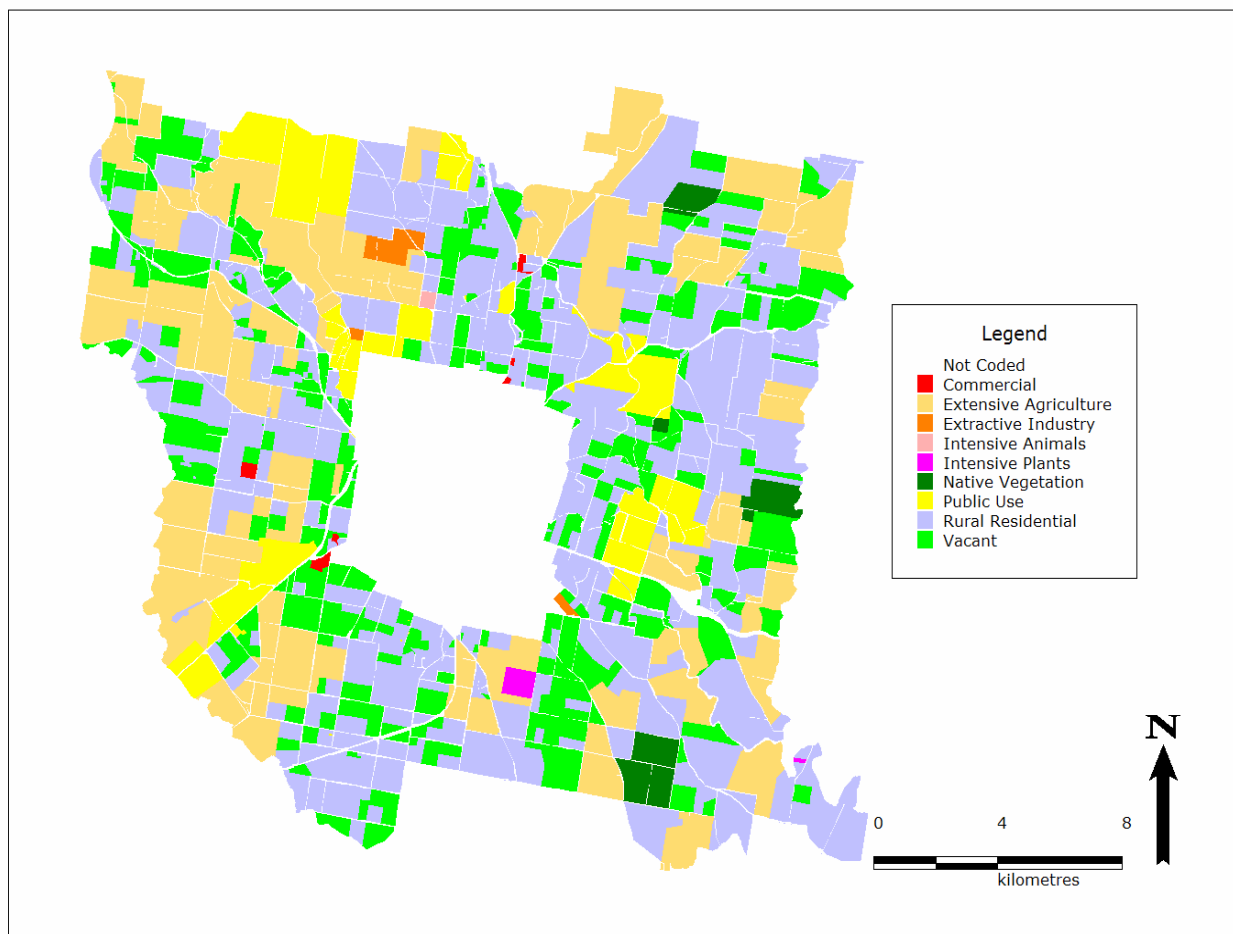


Figure 5.1 Land Use



Map 5.1: Land Use

Table 5.1: Number of Primary Land Uses

Land Use	Number of Uses	Percentage of Total
Rural Residential	797	68.4
Vacant	224	19.2
Extensive Agriculture	81	7.0
Public Uses	39	3.4
Native Vegetation	9	0.8
Commercial	7	0.6
Extractive Industry	3	0.3
Intensive Plants	2	0.2
Intensive Animals	1	0.1
TOTAL	1,163	100.0

The landuse survey has revealed the variety of uses in the rural area. They can be categorised in to agricultural uses, non-agricultural uses and rural residential uses. Table 5.2 lists the variety of uses observed.

Table 5.2: Variety of Rural land uses.

Agricultural Uses	Non-agricultural uses	Rural Residential Uses
Orchards	Service Stations	Dwellings
Poultry	Manufacturing	Dog kennels
Nurseries	Churches and Schools	Truck activities
Cattle	Cemeteries	Horses
Horse studs	Light industrial uses	Home based businesses
	Shop	

5.3.2. Fragmentation of Ownership

An analysis of the holding sizes has been carried out. This was done to provide an indication of the fragmentation of the land and to provide a picture of areas where there was a dominance of small lots.

The total holding size analysis for the study area is provided below in figure 5.2. Map 5.2 shows the distribution of the holding sizes throughout study area. It should be noted that the map shows the ownership pattern with contiguous lots making up a holding shown as one shading.

From figure 5.2, it can be seen that there is a dominance of lots in the 8 to 18 hectare range being mostly around the 10 hectare size. There is also a large number of holdings in the 0.8 to 3 ha range, most of which are in the 2 ha category. The total percentage of holdings less than 18 ha is 69%. There are 17 % of the holdings between 18 and 42 ha and 14% greater than 42 ha. This shows that the area is heavily fragmented.

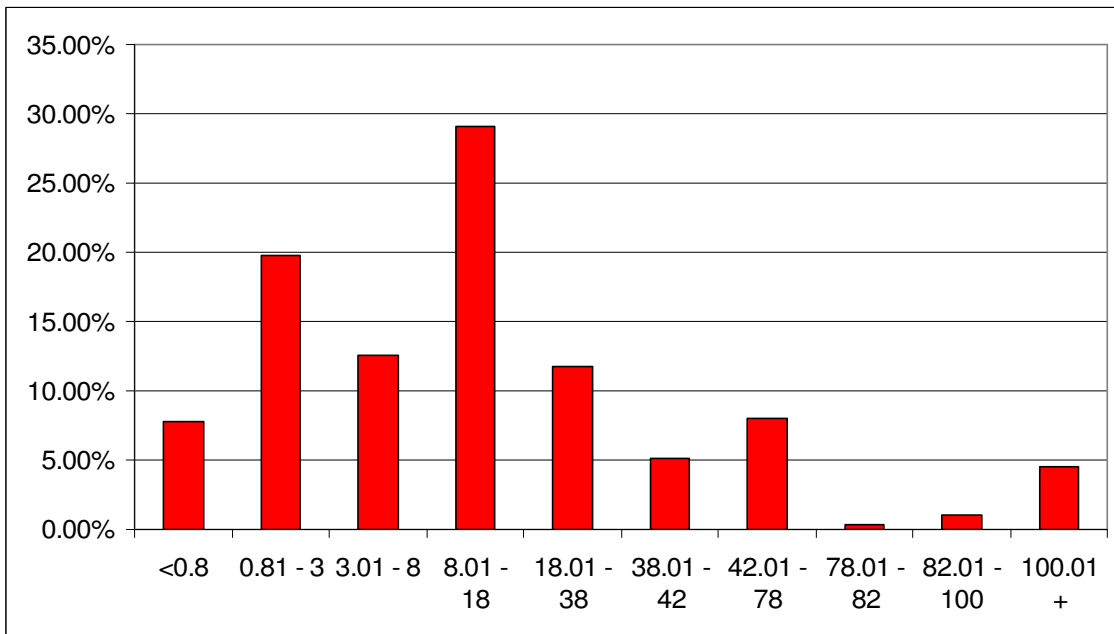
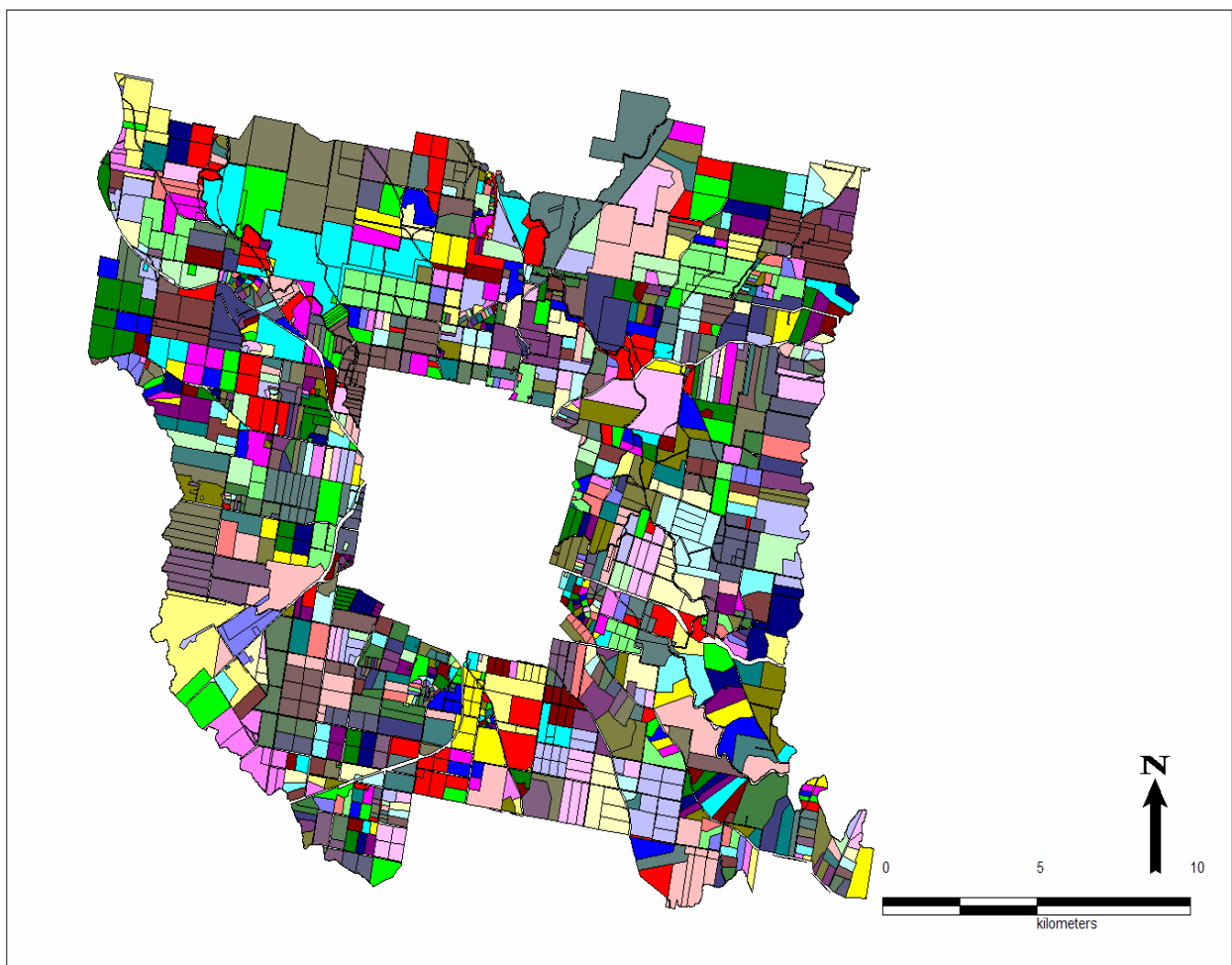


Figure 5.2: Holding sizes analysis



Map 5.2: Holdings Analysis

Armidale Dumaresq Rural Residential Study

5.3.3. Rural Residential Development

As noted above, the majority of land use is rural residential which is provided in rural fringe and rural living development patterns. There is also a considerable amount of vacant land within the study area as well as land that is currently used for extensive agriculture but which does not have a dwelling house on it. The most amount of vacant land is in the Dangarsleigh and Kellys Plains localities which are in the south of the study area. The Dumaresq and Duval localities also have considerable amounts of vacant and extensive agriculture land.

The fragmentation of ownership within the study area has also been noted above. It can be seen from the map and graph that the area is highly fragmented with the majority of holdings being less than 18 ha in size.

There are 10 rural residential estates that have been consented to by the former Dumaresq Shire Council. The details of each subdivision are presented in Table 5.3 and the location of each is shown on Map 5.1.

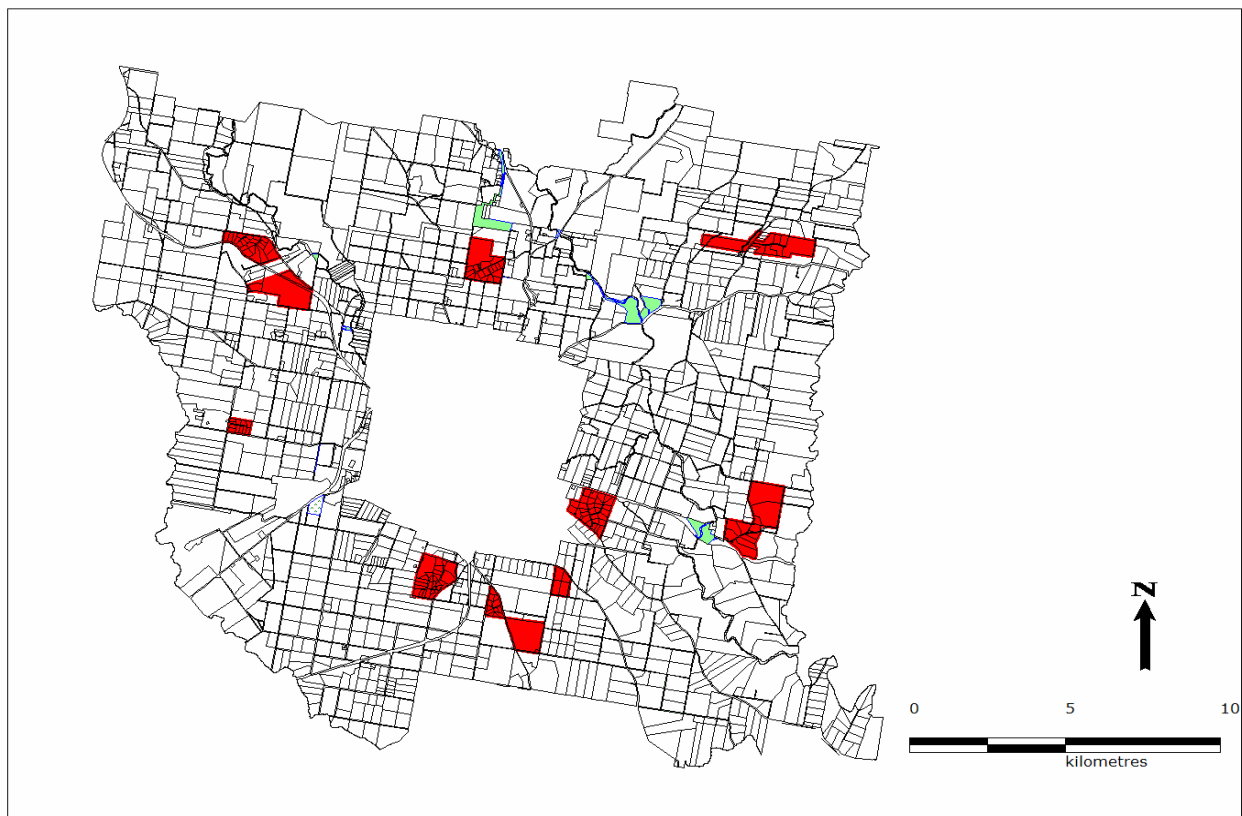
Table 5.3: Existing Rural Residential Estates

Subdivision Name / Location	Date of Development consent	Year of linen release	No. of lots released	Number of vacant lots as at July	Number of lots not created	Size of lots (average area in ha)	Services
Toadalla	1988 1991 1993	1990 1992 1994	21	4	0	2.28	Sealed road, Reticulated water
Tilbuster	1988	1990	11	1	11	2.83	Sealed road, Reticulated water, Dedicated public reserve, Dedicated bushfire shed site
Gungurru	1988	1991 1993	29	0	0	2.99	Sealed road, Reticulated water
Lynland Park	1992 1993 1994 1995	1993 1994 1996 2000	29	3	6	2.66	Sealed road, Reticulated water, Dedicated public reserve
Tanglewood Road	1988	1989 1994	10	0	0	1.62	Sealed road, Individual bore water
Middlefarm Road	1993	1994	8	5	0	8.40	Sealed road
Farrell	1994	1998	6	2	6	6.21	Sealed road, Lots of sufficient size for dams
Long Swamp Road	1994	N/A	2	0	9	6.49	Sealed road, Reticulated water
Hawthorn	1994	1995	12	1	0	2.02	Sealed road, Reticulated water
Hamilton	1994	1997	2	18		8.60	Sealed road
Castledoyle Rd	1996				5	3.01	Reticulated water, Sealed road
Stoney Ridge	1997				16	2.08	Sealed road

Armidale Dumaresq Rural Residential Study

Subdivision Name / Location	Date of Development consent	Year of linen release	No. of lots released	Number of vacant lots as at July	Number of lots not created	Size of lots (average area in ha)	Services
Road							Reticulated water Some lots seweraged
Hawthorn South	2001	2003	8	0	0	7.21	Sealed road Reticulated water
TOTAL			138	34	53	4.19	

It can be seen from the figures presented in the table that there 138 existing estate lots that have a dwelling constructed on them, 34 vacant lots and 53 lots that have been consented to but not yet created. These figures show that there is some capacity within the existing subdivision pattern that has not yet been taken up, but which can as the consents have been physically commenced.



Map 5.3: Existing Rural Residential Estates

Using the 2 definitions of rural residential development and the discussion outlined in Chapter 1, it can be said that these estates resemble rural fringe development in the size of the lots but that they are not all located in close proximity to the Armidale urban area.

There can be observed that there is a correlation between the number of vacant lots in the subdivision and its location and distance to town. Generally those estates that

Armidale Dumaresq Rural Residential Study

have more vacant lots in them are the ones that are further away from the urban area of Armidale. Whilst there may be other reasons for this, a trend can be discerned.

5.4. Infrastructure Provision

Infrastructure within the study area includes roads, reticulated water and sewerage, electricity and telephone services. The Council is responsible for the provision of roads, water and sewerage whilst Country Energy provides electricity and Telstra provides the telephone services. Electricity and telephone provision within the study area is considered to be satisfactory.

The roads within the study area can be categorised into major access routes into Armidale and minor roads which link to these major access roads. The major access roads are as follows:

- New England highway
- Waterfall way
- Castledoyle road
- Dangarsleigh road
- Long swamp road
- Kellys plains road
- Bundarra Road
- Old Inverell Road
- Boorolong Road
- Puddledock Road
- Rockvale Road

All these roads are sealed and provide good access into the urban area of Armidale. The other linking roads have a mixture of sealed and unsealed surfaces.

Water infrastructure is provided to the airport and to the Lynland Park, Hawthorn, and Gungurru subdivisions as well as to a reservoir located at Link Road which is located off the New England Highway in the North of the study area. There is a water main which follows the general alignment of Boorolong Road which comes from Dumaresq Dam. This pipeline provides water to some allotments close to the urban area of Armidale.

There are no sewerage mains which are located within the study area. However the sewage treatment plant is located within the study area and there is potential to provide reticulated sewage to some of the land within the study area providing the area is adequate capacity within the relevant mains. This land is in the north and north east of the study area.

5.5. Supply and Demand

The supply and demand of rural residential development must be factored into the assessment of land for rural residential development. This will ensure that the land is released in an efficient and effective manner. The calculations on which this section is based have been provided by the Council and the detailed information is provided in Appendix 3.

When considering the supply of rural residential land, 2 factors must be taken into consideration. These are the existing rural residential estates and the vacant rural land within the study area. Table 5.1 has shown that there are 34 vacant lots within the existing estates as well as 53 lots that have been consented to but not yet constructed giving a total of 87. The details of the land use survey in Chapter 2 have revealed that there are 224 vacant rural lots. There are also 81 lots currently being

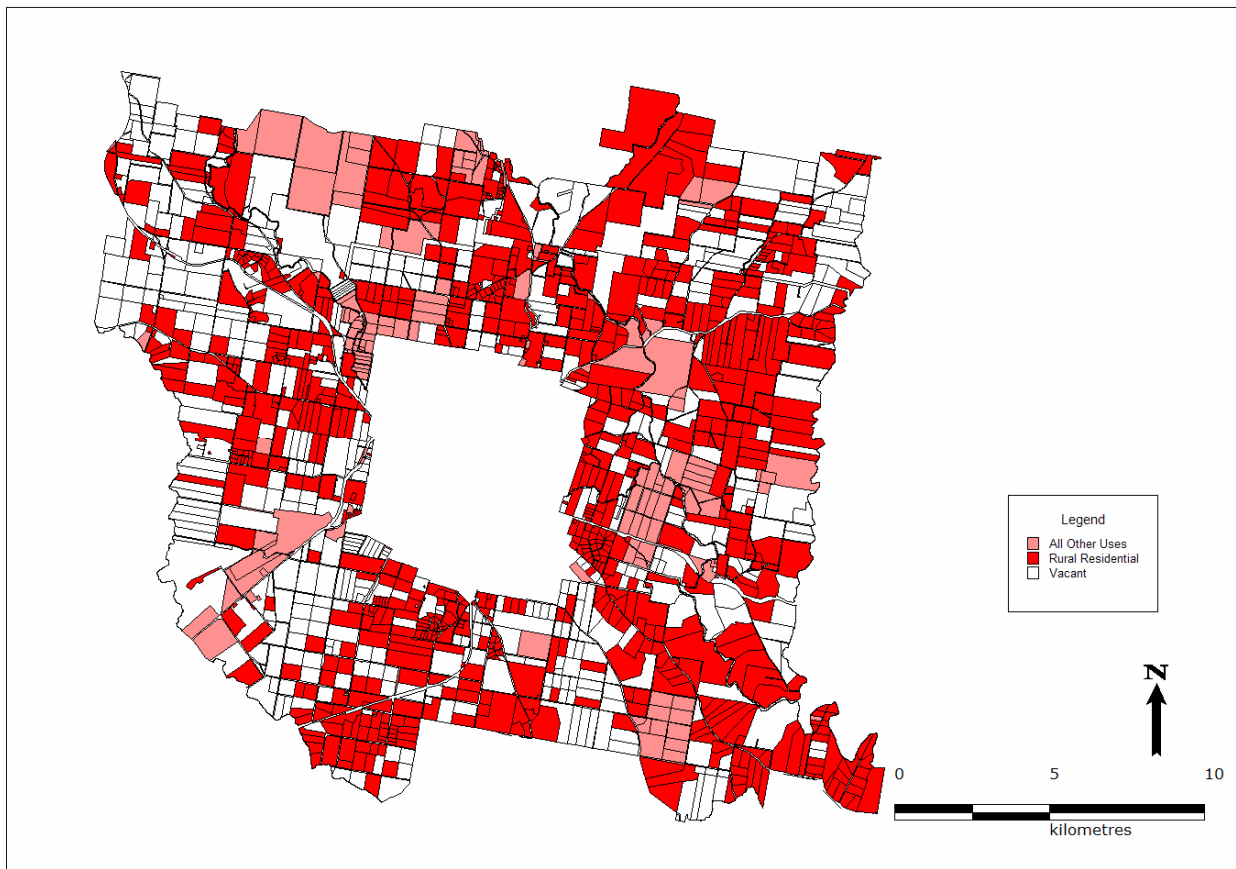
Armidale Dumaresq Rural Residential Study

used for extensive agricultural purposes, and 33 of these lots have dwelling houses on them reducing the amount to 48. These lots could be classed as vacant land if the dwelling house minimums were lowered to allow a dwelling on each of them. It can be seen from table 5.4 that there are 272 vacant existing allotments within the study area plus the 83 from the existing estates giving a total of 359 total vacant allotments within the study area.

Table 5.4: Supply of Rural Residential Land

Category	Number of Lots
<i>Rural Residential Estates</i>	
Existing Vacant lots	34
Lots consented but not created	53
Sub-Total	87
<i>Existing Rural Lots</i>	
Existing Vacant Lots	224
Vacant Extensive Agriculture lots	48
Sub-Total	272
Total	359

Map 5.3 shows the amount of vacant land within the study area as well as the land that has a dwelling house and other development constructed on it.



Map 5.3: Vacant Land

Armidale Dumaresq Rural Residential Study

The Council have calculated the demand for rural residential development based on the population projections for the study area. It has been calculated that the projected population will increase by 757 persons by the year 2021. There is an average household size of 2.6 persons per dwelling within the study area. This equates to 290 dwellings by the year 2021. An assessment of the type of dwelling stock has revealed that it is estimated to be made up of 96% single dwellings and 4% dual occupancies.

To estimate the actual projected demand for rural residential development, it is necessary to factor in 2 additional matters. These are a supplementary land supply to meet the potential deficiency in the future supply of land that can result from land which has been zoned rural residential but not developed to its projected potential and the potential supply within the existing rural residential estates. The supplementary land supply is estimated by the Council to be 30 percent of the existing housing stock based on a higher projected growth rate for rural residential development surrounding Armidale. These equate to 129 dwellings. The potential development within the existing estates includes the number of vacant lots and the number of lots that have been consented to but that have not yet been constructed. It can be seen from table 5.3 that there are 30 vacant lots within the existing estates and 53 lots that have been consented to but have not yet been constructed, giving a total of 83 potential existing dwellings. It can be seen from table 5.5 that the projected demand for new rural residential land is 336 dwellings. This equates to 20 dwellings per year over the next 17 years.

Table 5.5: Projected Demand for Rural Residential Dwellings

Category	Single Dwelling	Dual Occupancy	Total
Projected demand from Population Projections	278	12	290
Supplementary Supply	124	17	129
Sub-Total	402	17	419
Potential Dwellings from existing estates	79	4	87
Total	323	13	336

5.6. Vacant Existing Holdings

There are a number of holdings that are vacant and comprise more than 2 lots – in some cases it is 4 or 5, and they are less than the minimum size required for a dwelling house. These are termed vacant 'existing holdings' which is a term that is defined in the Dumaresq LEP 1985. The plain English meaning of the legal wording is that an existing holding is defined as a single lot or 2 or more lots that they are adjoining and or adjacent (land separated by a road and can be directly or diagonally opposite) lots or portions and are in the same ownership as they were in 1985. Generally a holding is one property on a single rate notice. However, not all vacant holdings currently have a dwelling entitlement under the provisions of the LEP (an example is that if the holding is not the same configuration as it was in 1985, there is no entitlement for a dwelling). Analysis of the holdings map and the vacant land map has revealed that there is a total of 112 vacant existing holdings. It should be noted that this is a preliminary assessment and the procedure is to research the holding status as it was in 1985 when a development application is lodged. This included

Armidale Dumaresq Rural Residential Study

searches at the Department of Lands office in Coffs Harbour as well as Council rate records and can become an involved and time consuming process. It is possible that some of these are not in fact vacant existing holdings, however it can only be identified once a development application is lodged and the research is done. The opportunity exists to abolish the current provisions and replace it with new provisions that create a new date being 1 July 2004. This date has been chosen because that is when the holding map (shown as map 5.2 in this report) was generated. The reasons as to why this proposal is considered satisfactory are as follows:

- Existing Holdings without dwelling entitlements under the provisions of Dumaresq LEP No.1 are unlikely to be disposed of by transfer to adjoining properties because most are too small to be considered to be sustainable for an agricultural use.
- There will be better environmental outcomes as vacant land that is too small to support an agricultural use is more likely to be 'abandoned' and therefore experience environmental degradation.
- The size of the vacant existing holdings is considered to be an appropriate size for rural living usage.
- Allowing dwellings to be constructed on vacant existing holdings will satisfy some of the demand for dwellings in the proposed rural living zone. It will provide a greater choice of lifestyles whilst not limiting new dwellings in other areas that have been so designated.

5.7. Criteria for Rural Residential Development

In order to ensure that rural residential development is developed to minimise any of the constraints listed in this chapter and the previous chapters, a set of criteria can be developed to ensure that any future rural residential development is as sustainable as possible. This criteria applies to rural fringe development as this is the type that has the smallest lots.

The criteria can be categorised into exclusionary and management criteria. Exclusionary criteria covers those issues considered to be of such magnitude that it should be used to exclude land from future rural residential development. Management criteria, however, covers issues that can be dealt with on a site by site basis.

Exclusionary criteria and the reasons for it being listed as such are as follows:

- *Slope of land – greater than 20%*. Land with steep slopes is not considered appropriate for rural residential development because of erosion potential and scenic impact on the landscape. This includes land that has to access over 20 % slope.
- *Drainage*. Land that is poorly drained or close to a drainage line or creek is not considered appropriate because of potential flooding. Land that has its access over a stream that is susceptible to flooding should also be excluded.
- *Native Vegetation*. Native vegetation provides a biodiversity and habitat resource and areas that are heavily vegetated should not be developed because of the potential impact on the biodiversity and habitat from the clearing of that land.

Armidale Dumaresq Rural Residential Study

- *Proximity to Armidale.* The proximity to services is a key consideration for rural residential development. Land should be adjoining the urban area and have good road access to the town, particularly the commercial centre.
- *Utility servicing.* This includes water, sewer, electricity and telephone. Water is a key consideration. Sewerage is necessary for smaller lots.
- *Road surface.* All roads to be accessed by rural fringe development should be sealed. This includes all roads between the subdivision and the urban area of Armidale.

Management Criteria and the matters that have to be addressed are as follows:

- *Domestic Effluent Disposal.* The method of domestic effluent disposal has a major bearing on the size of the lot to be subdivided. A soil and water test will be necessary to ascertain the minimum area for effluent disposal which in turn will impact on the size of the lot. For lots less than 1 ha, reticulated sewerage will be required.
- *Road Alignment and access.* The road alignment and access should have adequate sight lines so that any potential impact with other vehicles travelling on the road are minimised.

Chapter 6: Future Development Recommendations

6.1. Introduction

The preceding chapters have provided a discussion of the issues that need to be considered for future development within the study area as well as the constraints and existing land uses and ownership fragmentation within the study area. Details of the supply and future demand for rural residential development have also been discussed. The criteria for the provision of rural residential development has been discussed in Chapter 1.

This Chapter provides recommendations for the future development of the land within the study area for rural residential development as well as other types of development.

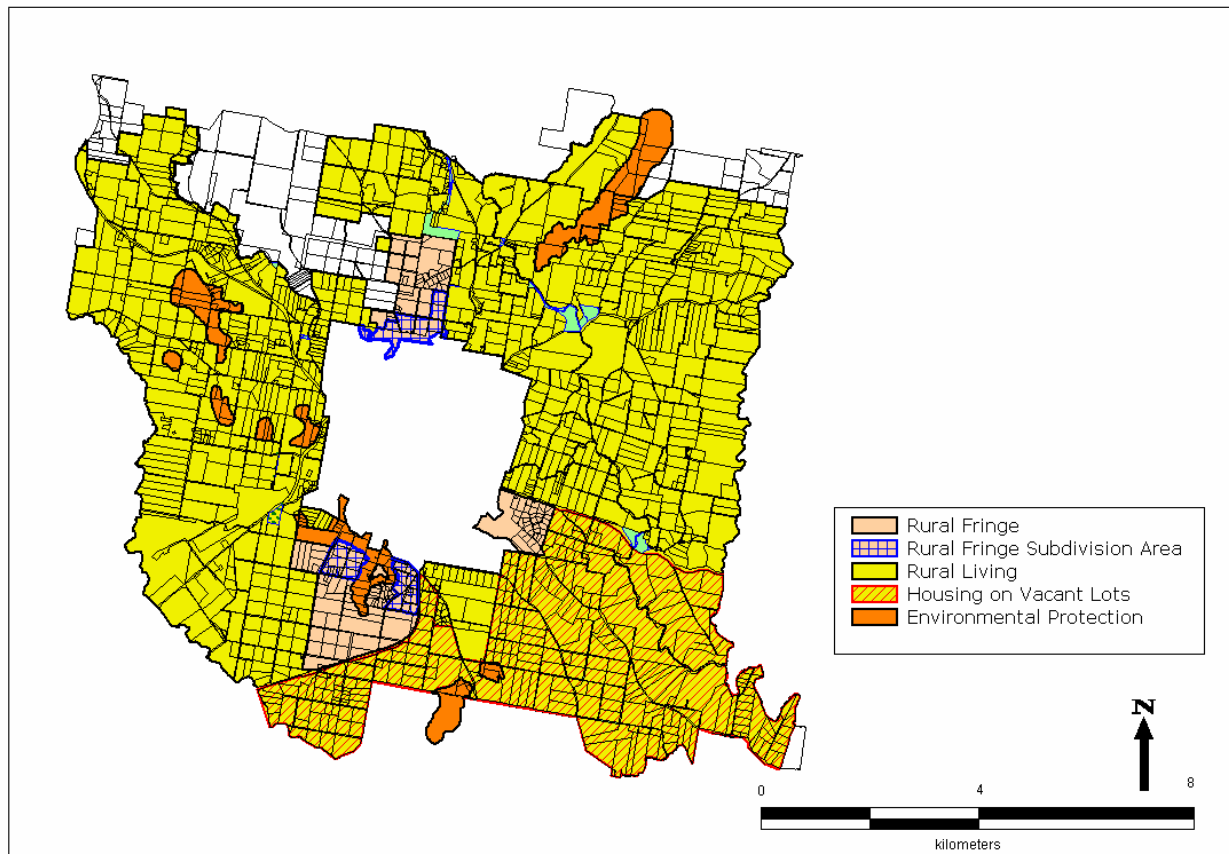
6.2. Rural Residential Development

It is now appropriate to consider the future pattern of rural residential development surrounding Armidale. From the discussion in chapter 1 and the information provided in Council's Armidale Dumaresq Planning Strategy 1995, it is apparent that the current dispersed pattern of rural residential estates is not appropriate for a sustainable future supply of rural residential development within the Armidale area. The discussion on rural residential development in chapter 1 has noted that there are two distinct types of rural residential development – rural fringe and rural living. The location of rural fringe development is dependent upon the provision of infrastructure, particularly water and sewage as well as the proximity to the existing area of Armidale.

Considering the community views as well as the discussions with the development industry, it is apparent that there is a demand for both rural fringe development and rural living development. The demand over the next 17 years is 336 allotments. Having regard to the potential mix as well as the desire to locate rural fringe development in the north of Armidale and the south as well as providing for some rural living development, it is recommended that the rural fringe component of the demand be 200 dwellings and the rural living component be 136. This equates to a proportionality of 60% rural fringe and 40% rural living. The details of the two components of rural residential development will now be discussed.

The recommended zoning changes for the land are outlined on map 6.1. It should be noted that the existing environmental protection, special use, open space and forestry zones are to remain.

It is important to recognise the need for continual review of the subdivision and dwelling take up that has been recommended as part of this Study. It is standard practice that the LEP that will eventuate out of the recommendations of this Study be reviewed in 5 years after its gazettal. However, there will also be a need to monitor the release of subdivisions and the construction of dwelling houses on an annual basis to assess the take up. If the take up is faster than expected, then there will be a need to review the LEP in a shorter timeframe.



Map 6.1: Recommended Zonings

6.2.1. Rural Fringe Development

The Armidale Dumaresq Planning Strategy as well as Council's preliminary plan has identified three areas for rural fringe development as follows:

- To the south of Armidale along Kellys Plains Road
- to the North of Armidale West of the New England Highway
- to the West of Armidale along Bundarra Road

These areas are considered to be appropriate locations for future rural fringe development to occur. It is recommended that this be adopted as the strategic directions for future rural residential development around Armidale.

All of this land can be serviced by reticulated water (although the land to the west has some limitations) whilst the land to the North of Armidale has the best potential for reticulated sewage provision. The land to the south and north of Armidale has the best access into the urban area whilst the land to the West is further away and also is isolated by the New England Highway bypass.

The Gungurru rural fringe estate is located in good proximity to Armidale and also is completely subdivided. It meets the criteria for rural fringe development and should therefore be zoned as such. There is some land that is between the Gungurru subdivision and the existing urban area of Armidale that has some potential for future subdivision, however this should not be considered for release until the first review of the LEP which will occur 5 years after its gazettal.

Armidale Dumaresq Rural Residential Study

The land recommended for rezoning to rural fringe is shown on map 6.1.

It is noted that the land to the south and west of Armidale is not able to be connected to a reticulated sewage scheme, therefore it should have on-site effluent disposal. Bearing in mind the potential for cumulative impact of on-site effluent disposal, it is recommended that a conservative approach be taken to a minimum allotment size and that this be 2 hectares. The land to the north of Armidale is able to connect to the reticulated sewage scheme and it is recommended that a minimum lot size of 1 hectare be created for the land within this area. If a subdivision is not to be connected to a reticulated sewerage scheme in this area, it should have a minimum lot size of 2 ha.

The land to the south also has a hill in it and this should not be developed on and in fact this is recommended to be an environmental conservation zone in the preliminary Plan. This zoning has also been included in map 6.1.

Having regard to the accessibility and infrastructure provisions, it is recommended that the staging for the subdivision of the land be firstly for land to the north of Armidale and land to the south of Armidale and that the land to the West of Armidale be considered for rezoning once the supply in the north and south has been taken up.

There is a need to allow for long term flexibility in the way that the actual zoning of the land occurs. It should take place within the areas outlined above. By staging the release of the land it allows for future issues that may occur with land use in the area – it being acknowledged that things can (and often do) change over a long timeframe of 17 years. It is therefore considered that a 10 year supply should be zoned initially and that this be reviewed in 5 years time to assess the take up of the land. It is also noted that the Council is preparing a sub regional planning strategy and that the implications on rural residential development in the wider region should also be considered.

It is therefore recommended that a draft LEP be prepared to allow for 10 years supply of rural fringe land. This will cover the land to the north and south of Armidale. This equates to a total of 120 lots (using the 60% rural fringe break up outlined above). This should be split equally between the north and south areas (being 60 in the north and 60 in the south). The amount of land to be released in any one stage is dependent upon the rate of demand as well as the willingness of landowners to subdivide. In order to assess the supply and demand, it is recommended that the take-up be monitored to assess the future need for release of further land. In order to encourage landowners to subdivide the land and not to have large areas of unsubdivided land surrounded by rural fringe development, it is recommended that the provisions for subdivision be by way of a clause that stipulates the land to be released by way of a schedule in the LEP and that this schedule be added to when the need for more land to be subdivided is required.

To calculate the amount of land to be set aside, the area of each allotment required is totalled and 10 percent is added to allow for road construction and other facilities within the subdivision. This equates to 132 ha of land in both areas. It is noted that in the north of Armidale a 1 hectare lot size is recommended, however there is no way of ensuring that the lots will be 1 ha and also the requirement to connect to the sewerage system may make it too costly to do, so for the purpose of identifying the land required it should be assessed at a 2 ha potential. The land that should be

Armidale Dumaresq Rural Residential Study

developed first is that land which is closest to the urban area of Armidale. The area to be rezoned is shown on map 6.1.

The land that is not subdivided will retain the existing subdivision minimum of 40 ha, and the existing provisions for dwellings on vacant existing holdings will be replaced with new provisions. These new provisions will allow all land that is a single lot or 2 or more adjoining and adjacent lots and held in one ownership at 1 July 2004 and is currently vacant to be given a dwelling entitlement.

The land should be zoned in such a way that it reflects the existing uses and character of the area. A zoning name appropriate would be rural fringe.

A set of character statements (which will ultimately become the zone objectives) should be prepared and it should include the following matters:

- Development should be carried out in accordance with the capability of the land.
- Protection of the amenity of existing residents.
- Uses to be compatible with residential living areas.
- Buildings to blend into the landscape
- Protection and improvement of water quality;
- Preservation and enhancement of native vegetation, including habitat linkages.
- Consider the impact of new uses on those already existing on adjoining land and in the locality.
- Prohibit intensive agricultural pursuits.
- Screening from public places.
- Protection of the amenity of existing residents.

The uses that would be permitted without consent, require consent and which would be prohibited for this designation would be those that currently apply to the Residential zone in the former Armidale City area. This is because the land has a residential amenity and this should be reflected in the permissible uses.

6.2.2. Rural Living Development

The land use survey has shown that the majority of land uses within the study area are rural residential and having regard to the classification of rural residential development, these would be termed 'rural living'. For this reason, it is recommended that the part of the current Rural 1(c) zone not identified as rural fringe be renamed rural living to reflect the use of the land.

The land use survey has revealed that there is a considerable amount of vacant land within the study area that could be developed for rural living development. In fact if the supply and demand figures are considered, the supply of rural living allotments within the study area could fulfil the land requirements by allowing a dwelling house on all vacant lots within the study area. However the constraints of the land must be considered as well as the ease of access into Armidale and the capacity of the road system to cope with the future traffic generation. The slope and vegetation in the north and east of the study area limit the potential for this area to have further rural living development within it. The road access into Armidale is also problematical particularly along Rockvale Road which does not have a good alignment. The area adjoining Rockvale Rd to the west is also to be the location of the future residential

Armidale Dumaresq Rural Residential Study

area of Armidale. The land to the West of Armidale similarly is cut off from the urban area as well as being relatively hilly. Land in the south west along the New England Highway, although having some potential is within the height limitation as well as operational buffer of the Armidale airport. The land to the south of the study area between Kellys Plains Road and The Waterfall Way presents the best capability for further rural living development because of its proximity to the urban area of Armidale as well as being relatively flat and cleared of native vegetation.

One issue that has to be considered is the number of vacant existing holdings. This was identified in section 5.5. Regardless of the capability issues outlined above, the fact is that these vacant existing holdings currently have the ability under the provisions of the LEP to lodge a development application for a dwelling house. However, there is some land that is currently classed as a vacant holding but which does not meet the criteria for a holding because it is no longer in the same configuration as it was in 1985. This can only be determined once a development application is lodged. It is recommended that the existing provisions for dwellings on vacant existing holdings will be replaced with new provisions. These new provisions will allow all land that is a single lot or 2 or more adjoining and adjacent lots and held in one ownership at 1 July 2004 and is currently vacant to be given a dwelling entitlement.

The land capability issues must be considered and it is reasonable that at this review, that the Council consider abolishing the existing holding provisions entirely.

The location of the vacant allotments can be seen from map 5.3. A count of this reveals that between the Main Northern Railway Line and Dangarsleigh Road there are 22 vacant lots and between Dangarsleigh Road and Long Swamp Road there are 29 vacant allotments. Between Long Swamp Road and Castledoyle Road there are 20 vacant lots and between Castledoyle Road and The Waterfall Way there are 20 vacant allotments. This gives a total of 91 vacant allotments.

It is recommended that the planning instrument be amended to allow a dwelling house on each vacant allotment within the area bounded by the Main Northern Railway Line in the south west and The Waterfall Way in the east. In order to assess the likely take-up of dwellings, it is recommended that the land between Main Northern Railway Line and Long Swamp Road be released first, and then the land between Long Swamp Road and The Waterfall Way be released in the second stage once the supply has been taken up in the first stage. This land is shown on map 6.1. The land surrounding the Petersons Vineyard on Castledoyle Rd should not be permitted to have dwellings on it to minimise any potential impact on the operation of the vineyard. In addition, there is a landfill depot to the north of this area and the land surrounding that should also be excluded from the provision of dwelling houses because of potential land use conflict between the landfill and new dwellings.

The issue of the existing vacant holdings also has to be considered in the light of releasing land and its impact on the market. It is considered therefore, that the vacant existing holding provisions of the current LEP should be replaced with the provisions outlined above in the new LEP and that 2 years be given for this land to be taken up. After the LEP has been gazetted for 2 years, it is appropriate to institute the dwellings on the vacant land between the Main Northern Railway Line and Waterfall Way provision as outlined above and shown on map 6.1.

Armidale Dumaresq Rural Residential Study

This land should be zoned to reflect the rural living nature of the area and its character. As such a Rural Living name is recommended for this land.

A set of desired future character statements (which can ultimately become the zone objectives) should be prepared for the designation and it should include the following matters:

- Preservation of the open rural landscape and its cultural heritage and landscape values.
- Buildings to blend into the landscape by having 'earthy' colours and low scale buildings.
- Protection and improvement of water quality.
- Preservation and enhancement of native vegetation, including habitat linkages.
- Consider the impact of new uses on those already existing on adjoining land and in the locality.
- Protection of the amenity of existing residents.
- Screening from public places.
- Protection of the amenity of existing residents.

The land use table would be similar to the current rural 1(c) zone which prohibits the following uses

Boarding houses, landfill, landing areas, motor showrooms, residential flat buildings, shops (other than general stores), taverns.

It is recommended that the following be added:

Abattoirs, boarding houses, brothels, bulky goods retailing, car repair stations, commercial premises, hazardous industries, hazardous storage establishments, high technology industries, highway service centres, hotels, industries (other than home industries), integrated housing, landing areas, landfill, light industries (other than home industries or rural industries), motels, motor showrooms, multi-unit housing, offensive industries, offensive storage establishments, restricted premises, road transport terminals, shops (other than convenience shops), stock and saleyards, vehicle body repair workshops, vehicle repair stations, warehouse distribution centres, waste depots,.

The area is a residential style area but there is also large enough holdings to allow for more uses than for the rural fringe area outlined above.

Controls should also be placed on the height of dwellings as well as the impact they have on the landscape by way of location and appearance. For example, they should be located below ridgelines and be of colours that blend in with the surrounding environment.

The land that has not been identified for dwelling houses on vacant land should be kept in the current planning provisions with no ability for a dwelling house on allotments of less than 40 hectares. The potential for the area to be used for intensive forms of horticulture should be explored particularly for land that has the potential to be irrigated from the sewage treatment plant could be used for flower growing, irrigated lucerne or other types of cropping.

Armidale Dumaresq Rural Residential Study

It is possible that once the rural living opportunities in the south and south east have been taken up, that the land in the northwest of the study area could be released for other dwelling entitlements.

There is land within the study area that is currently zoned as rural 1(a) and this is mostly in large holdings which should remain. Therefore, the existing rural 1(a) land should remain as rural 1(a). The bulk of the land that is not included in the rural fringe or rural living zones should also be zoned as rural 1(a) to reflect the general rural nature of the land.

6.3. Future Urban Area

The Armidale Dumaresq Planning Strategy (1995) considered that the future urban release area in the former Shire, referred to as the "Tilbuster Corridor", has an advantage over other areas surrounding Armidale because of its potential environmental quality (including northerly aspect and views) for development and the relative ease of providing suitable infrastructure, particularly water and sewer. The Tilbuster Corridor is bounded by Stoney Ridge Road, Rockvale Road, Charleston Willows (Tilbuster Creek), Puddledock Road and the New England Highway.

It would be appropriate to identify this in a strategy for the area and then carry out some master planning to identify the broad areas for future residential development. It should be noted that although the land will not be required for 10 to 20 years, that in order to ensure that the adequate supply of residential land within the Armidale area, it is necessary to provide a five to ten year the time for the rezoning studies and other planning mechanisms to occur.

6.4. Monitoring and Review

In order to assess how the development outlined in this report is progressing, it will be necessary for the Council to institute a monitoring and review regime. This should consist of a 3 monthly count of the number of subdivision applications lodged and approved as well as linen plans released in the rural fringe zone. Dwelling house approvals and construction should also be counted. In the rural living zone, the number of dwelling houses approved on vacant existing holdings in the first instance and then on vacant land as outlined in section 6.3 should be counted every 3 months.

The information provided by the monitoring should be compared with the demand forecasts and if the construction exceeds the forecast, then the Council should consider the further amendments to the LEP as outlined on sections 6.1 and 6.2. If this review occurs in advance of the 5 yearly review anticipated, the vacant existing holding provisions should still be reviewed at the 5 yearly review of the LEP.

Chapter 6: Conclusion

Armidale Dumaresq Council is preparing a draft Local Environmental Plan (LEP) for the entire Local Government Area. It has a large area of land zoned for rural residential development surrounding the urban area of Armidale which is considered to be in excess of the demand at the current time. Council is also preparing a strategy that will underpin the draft LEP and this study will provide the basis for the future rural residential areas within the Local Government Area (LGA).

This study has investigated the issues surrounding rural residential development for the area and found that the majority of the land is used for rural residential purposes as well as being highly fragmented. It has also noted that most of the existing rural residential estate style of development is scattered throughout the area and not concentrated in close proximity to the urban area with good access to services and facilities. Analysis has been carried out of the demand and supply for rural residential land within the study area and it has been found that there is demand for 323 dwellings in the next 15 years.

In order to allow for a mixture of rural residential living opportunities in the study area, land has been recommended to be zoned for rural fringe development with a minimum of 1 ha for connection to reticulated sewerage and 2 ha for on-site disposal. This land is adjoining the urban area of Armidale to the north and south. Land has also been recommended to be rezoned to rural living zone to allow for dwelling houses to be constructed on existing vacant lots in the area between Waterfall Way and the Railway line.

Bibliography

Bossel, H. (1999), *Indicators for Sustainable Development: Theory, Methods and Applications*, International Institute for Sustainable Development, Canada.

Briggs, G, & Whitehead, R, March 2000, *Agricultural Buffers and Land Use Planning*, NSW Agriculture, Tocal, Paterson.

Calder, W. (1981) *Beyond the View – Our Changing Landscapes*, Inkata Press, Melbourne.

EDGE Land Planning, Hassall and Associates, Heather Nesbitt Planning, Jawin Associates and Strategic Business Development, (2001) *Penrith Rural Lands Study*, Penrith City Council, Penrith.

EDGE Land Planning, Andrews Neil, Heather Nesbitt Planning, Jawin Associates (2001) *Baulkham Hills Rural Lands Study – Background and Issues Report*, Baulkham Hills Shire Council, Castle Hill

EDGE Land Planning, Andrews Neil, Heather Nesbitt Planning, (2003) *Baulkham Hills Draft Rural Strategy*, Baulkham Hills Shire Council, Castle Hill

Faulding, M, Kelly, AHH, Bateson, P, Donovan, I, (2001) *Biodiversity Planning Guide for NSW Local Government, Edition 1*, NSW National Parks and Wildlife Service, Hurstville

McHarg, I.L. (1992) *Design With Nature*, John Wiley and Sons, New York.

NSW Department of Local Government, Environment Protection Authority, NSW Health, Department of Land and Water Conservation and NSW Department of Urban Affairs and Planning (1998) *Environment and Health Protection Guidelines – On-site Effluent Management for Single Households*, NSW Government, Sydney.

New South Wales Environment Protection Authority (2000) *New South Wales State of the Environment 2000* Environment Protection Authority Sydney.

NSW Rural Fire Service and Planning NSW (2001) *Planning for Bushfire Protection*, NSW Government, Sydney

Organisation on Economic Cooperation and Development (1999) *Coherence in Environmental Assessment*, OECD, Paris

Sinclair, I.W. (1999a), *What is Sustainable Agriculture*, in *New Planner*, Number 38. Royal Australian Planning Institute (NSW), Sydney

Sinclair, I.W. (1999b), *What is Rural Land*, in *New Planner*, Number 39. Royal Australian Planning Institute (NSW), Sydney

Armidale Dumaresq Rural Residential Study

Sinclair, I. W. (2000), *From Strategy to Plan – Planning for Rural Land in Australia*, Paper presented to the American Planners Association Conference, New York City April 2000.

Sinclair, I. W. (2001a) *Rural Residential Development*, in *New Planner*, Number 47, Royal Australian Planning Institute (NSW), Sydney

Sinclair, I. W. (2001b) *Rural Residential Development Impact*, in *New Planner*, Number 48, Royal Australian Planning Institute (NSW), Sydney

Sinclair, I. W. (2001c) *Lifestyle Living*, in *New Planner*, Number 49, Royal Australian Planning Institute (NSW), Sydney

Sinclair, I.W. (2002a) *Bushfire Risk* in *New Planner*, Number 50, Royal Australian Planning Institute (NSW), Sydney

Sinclair, I. W., (2002b), *Growth Management and Rural Land*, Paper presented to UNSW Planning Law and Practice Short Course, Kensington.

Therivel R., Wilson E., Thompson S., Heaney D &Pritchard D., (1992) *Strategic Environmental Assessment*, Earthscan Publications Ltd., London,

Appendix 1 – Land Use Survey Methodology

Armidale Dumaresq Rural Residential Study

A major component of this study has been a land use survey of all of the land within the study area. The purpose of the land use survey is to gain an indication of the land use trends.

The preparation of a land use survey is one of the most important components when zoning rural land. Each parcel of land within the rural lands has been inspected and given a land use designation. This has been entered into Council's Property Information database and mapped using a GIS.

The first step was to identify a set of spatial boundaries which would form the basic level of data representation. The geographical localities were used. This has two benefits, the first being that the area is generally mapped and can be identified easily and secondly it is easier for the public to understand the data once it has been collected and published.

The next step is to identify the categorisation of the land uses to be surveyed. The land use has been categorised into primary and secondary land use categories. The primary land use categories are as follows:

- Rural Residential
- Intensive Plants
- Intensive Animals
- Extensive Agriculture
- Vacant
- Commercial
- Extractive industry
- Public Use
- Native Vegetation

Definitions of each use which were used for the purpose of identifying the land uses are as follows:

- *Rural Residential* means a house on a lot that is greater than 1 ha generally, and is in a rural environment where the main source of income is from other sources than agriculture use of the land.
- *Intensive Plants* means the growing of vegetables and ornamental plants for commercial gain using the application of irrigated water and includes market gardening, protected cropping structures, orchards, vineyards, and other similar uses.
- *Intensive Animals* means the rearing of animals using a feeding method other than natural grazing and includes poultry and piggeries mainly.
- *Extensive Agriculture* means the growing of plants using natural rainfall or the rearing of animals using grazing as a feeding method. It also includes the growing of fodder crops and irrigated pasture.
- *Vacant* land is land that is mostly cleared of native vegetation and which does not have any dwellings or other structures on it.
- *Commercial* uses are uses that are used for a commercial or industrial type of use and which do not have any dwellings associated with them.
- *Extractive Industry* means a use that extracts material from the land and includes sand and clay mining and quarrying of sandstone and other stones.

Armidale Dumaresq Rural Residential Study

- *Public Uses* mean a use that is commonly used and or operated by a public authority or associated body. It includes community facilities, golf courses and Government owned uses of the land
- *Native Vegetation* means a lot that has no dwellings or structures on it and which has the majority of the land covered in native vegetation.

The detailed categorisation is presented in the following table:

LAND USE SURVEY CODES

PRIMARY Description	Code	SECONDARY Description	Code
Rural Residential	RR	Dwelling	DW
		Home Business	HB
Vacant	VA	Cleared Land	CL
Native Vegetation	NV	Native Vegetation	NV
		National Park	NP
Intensive Plants	IP	Nurseries	NU
		Vineyard	VN
Intensive Animals	IA	Poultry	PO
Commercial	CO	Accommodation	AC
		Manufacturing	MF
		Petrol Station	PS
Extractive Industry	EI		
Extensive Agriculture	EA	Grazing	gr
Urban	UR	Urban Area	UA
Public Use	PU	Airport	AP
		Bushfire Brigade	BF
		Cemetery	CY
		Church	CH
		Electricity Substation	ES
		Hall	HL
		National Park	NP
		Public Reserve	PR
		Water / Sewerage	WS

There are 3 components to the carrying out of the land use survey as follows:

- Preliminary identification of land use.
- Study area inspection.
- Data entry and mapping.

Armidale Dumaresq Rural Residential Study

Preliminary identification of land use occurred in the office prior to the field inspection. Aerial photography was used to identify the land use. The major things to be picked out are extensive Agriculture, intensive plants (particularly vineyards), Horse Studs, dwellings on small lots, vacant land, lots which are totally covered with native vegetation, and extractive industries. Only one major land use was identified. An assumption can be made that a dwelling house rural residential uses except where they are vacant. An assumption was also made that lots less than 20 ha which did not have an intensive agricultural or commercial, industry, public or government use were rural residential.

This information was entered into the database using the coding that has been identified for the primary and secondary land uses.

The study area inspection was carried out by windscreen survey of all of the roads within the study area. This was done to check the primary land use categories and also to enter secondary ones that could not be identified from the aerial photos. As each road is driven on the land use is clarified against the preliminary identification. Signage, which gives an indication that the property may be use for a secondary use such as a home business or a commercial use was also noted.

The data was entered into the Council property information database using the coding. However this was not always possible because of the lack of street numbering in the database and only those uses, which could be identified from the database, were entered. This did not affect the integrity of the data as the primary uses are the ones used in the identification of the land use designations.

Appendix 2 – Consultation Outcomes

Armidale Dumaresq Rural Residential Study

Development and economic development group

Issues

- Future residential area.
- Demand for small acreage on the edge of town.
- Two hectare lot sizes will allow more trees to be built. Examples are Stony Ridge Road and Invergowrie.
- Reduce rural living sized lots from the 40 hectare minimum at present.
- Water provision - onsite for larger lots and possibly reticulated for smaller estate type lots.
- Implications for Uralla rural residential areas especially Invergowrie.
- People use the land for small cropping.
- Demand is there for 40 hectare allotment sizes.
- Demand is there for 2 hectare lots with sealed roads, water and sewerage.
- Difficulty of disposal of effluent on lots.
- Give all existing lots a dwelling right.
- Allow subdivision of lots to a minimum of less than 40 hectares.
- Market decision to determine whether it is viable for subdivision / development.
- Balancing supply and demand.
- Effluent disposal on-site and potential for impact.

Environmental groups

Issues

- Rural fringe people don't see themselves as land managers as opposed to rural living people who generally do. Examples are weed, effluent and water management, etc.
- More people in the area equals increased car usage and impact on wildlife.
- Public transport.
- Education about land management and responsibilities.
- Noxious weeds such as Chilean Needle Grass. Horses are one method of spreading noxious weeds.
- Land management such as erosion, native vegetation, native grasses and remnant vegetation.
- Horses on lots cause problems with denudation of vegetation similar to feed lots.
- Potential bushfires.
- Response time for Fire fighters and property protection. People need to be educated to provide their own protection. Houses burn down in 8 minutes.
- Potential for use of covenants.
- Increased pollution of streams.
- Underlying geology and soils (basalt and clay) may not allow for adequate on-site effluent disposal.
- Need for appropriate effluent management systems.
- Impact on habitat linkages and corridors.
- Domestic pets impact on wildlife, especially cats.
- Property vegetation plans to be prepared in conjunction with subdivisions and development applications for rural fringe to encourage trees to be planted. Example is Gundaroo Estate.
- Property vegetation plans for rural living lots.

Armidale Dumaresq Rural Residential Study

- What is the Council's vision for the area?
- Rural land use conflict.
- People should be encouraged to understand that they live in a rural community and need to respect traditional usage of the area.
- Development should be close to the largest employer (University). If further away will cause more traffic coming through the town to get to University.
- Need for car pooling for the University.
- Council will need to maintain environment in the area so it does not become degraded. Examples are rural roads, environmental issues, provision of services, rubbish littering, etc.
- People living on rural lots should be encouraged to become involved in sub catchment planning. More Landcare groups encourage sense of community.
- More efficient with water management, solar design, low flow water tanks, etc

Government agencies

Issues

- Identifying the aspirations and ensuring that expectations are realistic and in a realistic timeframe.
- Long-term needs and land supply.
- Provide a variety of holding sizes by allowing dwellings on the land. Need to input this into the demand and supply projections.
- Identify land via a land release strategy and do LEPs each 5 years to release the land. Use it or lose it approach to ensure that the land is subdivided. Schedule in LEP to allow subdivision with map and then do any rezonings.
- Water and sewerage provision – question reticulated water without reticulated sewerage
- For 1 hectare lot sizes allow reticulated water with on-site effluent disposal. Have rain water tank and low flow water system. 20,000 litres dedicated water supply for fire fighting.
- Bushfire - grass fires and ember attacks are the most prevalent.
- Infrastructure and zoning for rural fringe style development.
- On-site effluent disposal. 1 hectare as the minimum. Need to require studies of the soil and climatic conditions.
- Move to rural lifestyle living. Need to factor this into the urban growth process.
- Rural uses. Intensified agriculture and others.
- Proposed business Park near the airport.
- Use sewerage treatment plant for irrigation of intensive plant uses.
- Potential for a new "Village" in the area is not realistic - growth, investment, other villages' need for growth which have capacity need the considered.
- Provide a "rural lifestyle Village" type with some community facilities such as tennis court and a small shop in a rural fringe subdivision pattern.
- Encourage forward planning for the Northeast urban release area. Identified in the Armidale Dumaresq planning strategy as the Tillbuster corridor. Identify it and do some master planning to provide some broad scale planning for it.
- Bushfire issue. Not a good response from volunteers on the ground because of people not being there and need to come from their workplace which is in town. This causes a 10 to 15 minute lag time.
- Identify a hierarchy of shopping facilities.

Armidale Dumaresq Rural Residential Study

- Provide a minimum allotment size of 4 hectares in the land between the urban area and the North East urban area and use environment protection land for buffers.
- Southeast area has new bushfire shed and tankers but also has problems with getting a turnaround time because people working town.
- Riparian rights and subdivision needs to be considered.
- Have a joint water system to pump to a tank in low flow / off peak times. Have a low flow pipe going to a rainwater tank and not a fully reticulated service.
- Potential for intensive agriculture.
- Economic development opportunities for major employment generating works - use existing industrial zones and remove the ones that are in the study area.
- Effluent reuse on intensive plants and plantation forestry.
- Number of irrigation licences in the area.
- Draft Regional Vegetation Plan needs to be considered.

Community groups

In this consultation the attendees were asked to provide the Liabilities, Assets, Needs and Dreams of living in the area. These were written on butchers paper by the consultant.

Liabilities

- Same regulations for rural areas and urban areas.
- On-site effluent disposal areas.
- Quality of rural roads-not graded as regularly as it was prior to amalgamation.
- Road width and line marking are not sufficient.
- Ability to cope with increased traffic.
- Dust.
- Further subdivision.
- No ability to have a dwelling on lots smaller than 40 hectares.
- No ability for detached dual occupancy.
- Lots severed by roads and creeks and no ability to put a dwelling on the part that has been severed.
- Lack of flexibility in council policies.
- Minimum subdivision is 40 hectares but previously was 10 hectares.
- Communications infrastructure.
- Electricity infrastructure.
- Development moving into areas and putting more people into the area.
- Town encroaches on privacy.
- No ability to control animals and weeds on land - dogs, foxes, rabbits, etc.
- Loss of good agricultural land with subdivision.
- Rural land use conflict.
- No recreation areas, bridal and bike paths in subdivision nor is there open space networks.
- Light pollution at night.
- Noise pollution.
- Increased vandalism.
- Dwelling houses being constructed on ridgelines.
- Lack of horse access to town. Used to use what is now the bike tracks but they are now unable to use the bike tracks.
- More dams being built in the catchment.

Armidale Dumaresq Rural Residential Study

- Bushfire management.
- Dumping of rubbish.
- Not able to apply fertiliser using aircraft.
- City dwellers take city values into the bush areas where they are not acceptable.
- Losing a sense of community.
- Public liability insurance litigation is depriving people of country halls

Assets

- Environment.
- Open spaces.
- Lifestyle.
- Not in and urban environment.
- Lack of lights at night.
- Dwellings are built into the landscape.
- Rural landscape.
- Walking tracks along Rockvale Road area. Using Crown roads and unformed roads.
- Diversity of people and community.
- Wildlife corridors and linkages.
- Low cost of Council charges on small lots.
- Lack of services.
- Water quality is good.
- Don't have to drink town water.
- Water - potential for self-sufficiency.
- Wildlife.
- Charleston Willows, Pine Forest and National Parks (Eastwood State Forest).
- Replanting of vegetation.
- Variety of lot sizes and not in massive areas of 5 acre blocks.
- Nicer neighbours.
- Greater sense of community than in town.
- More privacy.
- More security.
- Recreation activities in Pine Forest.

Needs

- Get people who move into the area to understand, comradery of the bush.
- Ensure of people cater for water to be sufficient dry times.
- Create a sense of community in the subdivisions.
- A new resident's kit to give people understanding of their responsibilities.
- Rain for water in dams.
- Flexibility in lot sizes and ability for detached dual occupancy.
- Recreational opportunities for youth and younger children.
- Recreation pathways and access to open areas.
- Bus shelters.
- Pine Forest to be returned to a Commons and funds set aside to manage it.
- More water reservoirs.

Dreams

- Get people to put names on their properties.

Armidale Dumaresq Rural Residential Study

- People to be involved in the area.
- Rate notices to itemise the different charges that apply to different areas.
- Integrated network of riding trails using Crown roads and national parks.
- Keep variety of lot sizes in the area.
- Provide common areas in subdivisions.
- Range of lot sizes and road surfaces allowing for cheaper land.
- Septic tank and other regulations developed for former City need to be reviewed and made more acceptable.
- Buffers between agricultural uses and high-density of development thereby lessening rural land use conflict.
- Community titles for subdivision.

Appendix 3 – Supply and Demand

Projected demand for new dwellings

The projected demand for rural residential land considers the characteristics of the area of the former Dumaresq Shire within approximately 10 minutes drive from Armidale (Dumaresq Inner Area) since this is where most rural residential development has occurred and is likely to occur in the future.

The likely future demand for rural residential land is based on estimates of the number of dwellings that will be required to house any increase in population and the density of future rural residential development. The number of dwellings that could be developed on existing rural residentially zoned land also needs to be taken into account. Some allowance also needs to be made for an additional or supplementary supply of land to compensate for land which is zoned rural residential that may not be developed to its full potential. This supplementary supply also ensures that there is still land available for rural residential development at the end of the timeframe for the new LEP.

Population

The calculations are based on projected land demands up to 2021. The projected population for the Dumaresq Inner Area for the 20 years from 2001 and 2021 is shown in *Table 1* The projected population increase for the period is 757 persons.

Table 1: Projected population, Dumaresq Inner Area, 2001 - 2021

Average population growth	2001	2006	2011	2015	2021	Change 2001-2021
1.8% p.a.	2,102	2,291	2,480	2,670	2,859	757

Household size

To estimate the number of new dwellings that will be required to accommodate the projected increase in population, household size needs to be considered. *Table 2* shows the average household size for Dumaresq between 1981 and 2001.

Table 2: Average household size, Dumaresq Inner Area, 1981 - 2001

Number of persons in occupied private dwellings

	1981	1986	1991	1996	2001
Dumaresq	2.9	2.8	3.0	2.9	2.8
Dumaresq Inner Area				2.9	3.0

Source: ABS Census

Figures for 1981 to 1991 based on number of households and population.

Figures for 1996 are average household size

Figures for 2001 are number of persons usually resident in occupied private dwellings.

In the rural areas, household sizes have remained relatively constant with only a slight decline from an average of 2.9 to 2.8 persons per household between 1981 and 2001. In the Dumaresq Inner Area household sizes are similar with a slight increase from an average of 2.9 to 3 persons per household between 1996 and 2001.

The relatively large household size for Dumaresq reflects the predominant type of household which is couples with children (51% of all households in 2001). The 2001 Census indicates that 64% of people aged over 15 years were married and 73% of homes were fully owned or being purchased.

If the trend in household sizes for Dumaresq over the past 20 years were to continue over the next 20 years then in 2021 the average household size would be 2.7. However, it is considered unlikely that the rates for Dumaresq will continue to defy the general trend of falling household occupancies

Armidale Dumaresq Rural Residential Study

experienced elsewhere, including Armidale and NSW. For the purposes of estimating future household sizes, it is assumed that there will be an overall modest decrease to 2021. On the basis of this assumption, this Report adopts an average household size of 2.6 for Dumaresq between 2001 and 2021.

Projected number of dwellings

The above projections for population and average household size in the Dumaresq Inner Area can be used to estimate the number of new dwellings that will be required up to 2021 to meet the demand for housing generated by the increase in population. Based on a population increase of 757 and an average household size of 2.6 persons per dwelling it is estimated that 290 new dwellings would need to be provided in the semi-rural areas surrounding Armidale by 2021.

Types of dwellings

Most existing dwellings within Dumaresq are single dwellings. The three Census periods from 1991 to 2001 (refer to *Table 3*) indicate that the predominant type of occupied dwelling (97%) is a separate house. Other types of dwellings such as semi detached, row or terrace houses and town houses, flat, units or apartments accounted for less than 1% of occupied dwellings.

Table 3 Types of occupied private dwellings, Dumaresq, 1991 – 2001
(number, proportion)

Dwelling type	1991		1996		2001	
Dumaresq						
Separate house	1,203	96%	1,301	97%	1,349	97%
Medium density *	11	0.8%	6	0.5%	11	0.9%
Other	33	2.6%	9	0.67%	12	0.87%
Total	1,372		1,316		1,247	

* Medium density includes semi detached, row or terrace houses and town houses, flat, units or apartments.
Source: ABS Census

A review of Council's development consent register indicates that 103 dwellings were granted development consent in Dumaresq over the five year period from January 1999 to December 2003. This represented 21% of dwellings approved in Armidale Dumaresq during this period. Of the dwellings approved in Dumaresq 99 (96%) were single dwellings and 4 (4%) were dual occupancies (refer to *Table 4*).

Table 4: Dwellings granted consent, Dumaresq, 1999 to 2003 inclusive

	Single dwellings ¹	Medium density housing ²	TOTAL
Dumaresq	99 (96%)	4 (4%)	103

¹ Single dwellings means a single dwelling on a separate parcel of land.

² Medium density development includes dual occupancies.

The high proportion of single dwellings in both the Census data and Council approvals reflects the semi-rural and rural nature of Dumaresq. Also, under Dumaresq LEP No. 1 medium density housing, other than dual occupancies, are not permitted in rural areas and future planning controls are likely to retain this approach. Therefore, the types of new dwellings in semi rural areas that will be required to accommodate an increase in population are likely to be similar to recent trends of predominantly (96%) detached dwellings with occasional (4%) dual occupancies.

Existing rural residential land stock

Existing rural residential land stock in the semi rural areas surrounding Armidale mainly comprises:

- Vacant allotments within existing rural residential estates

Armidale Dumaresq Rural Residential Study

- Allotments which have not been developed but are subject of an operative development consent for rural residential subdivision
- Land which can be subdivided for rural residential purposes under Dumaresq LEP No. 1.
- Allotments that have dwelling entitlements under Dumaresq LEP No. 1.

The assessment of existing rural residential land stock is based on the Rural 1(c) (Small Holdings) zone in Dumaresq LEP No. 1 which surrounds Armidale. It considers small to medium sized allotments with an area of 40 hectares or less that are currently permitted in the Rural 1(c) zone under Dumaresq LEP No.1.

Vacant lots within existing rural residential estates

Thirteen (13) rural residential estates were granted development consent in the former Dumaresq Shire between 1989 and 2001. Based on Council's development consent register and record of subdivision plan or certificate releases it is estimated that in September 2001 there were approximately 40 developed vacant allotments within these estates.

Allotments which have not been developed or released but are subject of an operative development consent

Of the thirteen rural residential estates in the area surrounding Armidale that had been granted development consent prior to September 2001, three have not released any allotments and another four have not completed all stages. In 2001 there were approximately 80 allotments which could have been developed and released.

Land which can be subdivided for rural residential purposes under Dumaresq LEP No. 1.

In March 1997, Amendment No. 14 to Dumaresq LEP No. 1 was gazetted which prevented rural residential subdivision of land within the Rural 1(c) zone. Since then there has been one further amendment, Amendment No. 17 in 2000, which permitted the development of a rural residential estate. The yield for the estate was 8 rural residential lots.

Allotments that have dwelling entitlements under Dumaresq LEP No. 1

There is some potential under the current LEP for dwelling entitlements on existing allotments subject to satisfying certain criteria. It is estimated that over the past 3 years an average of 10 dwelling entitlements per year were confirmed by Council for existing allotments within the Rural 1(c) zone. Therefore, it is assumed in September 2001, there were potentially 24 dwelling entitlements on existing allotments within the Rural 1(c) zone.

Existing rural residential land stock

Based on the above estimates the development potential of existing land in 2001 that can be used for rural residential development was 152 lots comprising:

- 40 vacant allotments in rural residential estates
- 80 allotments that can be developed but have not been released
- 8 allotments that can be developed for rural residential purposes under Dumaresq LEP No. 1.
- 24 allotments for which existing dwelling entitlements apply.

Assuming that 96% of these allotments would be for single dwellings and 4% for dual occupancies, the potential dwelling yield is 158 dwellings.

Projected demand for new rural residential land

The projected demand for new rural residential land comprises two components:

- The amount of land required to accommodate the projected number of new dwellings, taking into account existing supply of suitable land, and
- A supplementary supply of land to allow for factors, such as rural residentially zoned land not being developed to its full potential.

The above analysis has identified that between 2001 and 2021, 290 new dwellings will be required for the projected increase in population. The analysis has shown that in 2001, existing rural residential land stock could potentially yield 158 dwellings. Therefore, new rural residential areas will be required to provide for the projected demand for 132 new dwellings.

Supplementary supply of land

To ensure there is sufficient appropriately zoned land available to meet future demand an additional supply is required over and above the estimated amount based only on population growth and required number of new dwellings.

This additional or supplementary supply of land needs to be provided to meet the potential deficiency in the future supply of land that can result from land which has been zoned rural residential but is not developed to its projected potential. Supplementary land also ensures that at the end of the timeframe for the new LEP there will be a supply of land still available to allow development to continue until such time as a revised or new growth strategy is prepared.

The Armidale Dumaresq Planning Strategy (1995) referred to this supplementary land as “cushion stock” which was based on a proportion of existing housing stock. The following requirements for cushion stock based on the different growth strategies were:

Growth strategy	Cushion stock (% of existing housing stock)
Low (0.47% p.a)	15.0%
Medium (0.77% p.a.)	22.5%
High (1.77% p.a.)	30.0%

For the purposes of this Report a supplementary supply of 30.0% has been adopted on the basis of the high projected growth rate for new rural residential development surrounding Armidale. In terms of the existing housing stock, in 2004 there were 626 rateable properties on land within the Rural 1(c) zone under Dumaresq LEP No. 1. Of these 42 properties were rated as farmland. It is assumed that the remaining 584 properties would mainly comprise rural lifestyle properties, some businesses and some vacant land. It is estimated that in 2004 about 80% of non-farmland properties would be rural residential properties, that is about 467. Council’s consent register indicates that between September 2001 and April 2004 that consent had been granted for 36 dwellings on land within the Rural 1(c) zone. Therefore in 2001 there were an estimated 431 rural residential dwellings within the Rural 1(c) zone. Therefore the supplementary supply of 30% of existing housing stock is equivalent to 129 dwellings.

Future rural residential land will be required for 261 dwellings to satisfy projected demand and supplementary supply (refer *Table 5*). Assuming that 96% of these dwellings will be single and dwellings and 4% dual occupancies, the number of new lots required for rural residential development is 255 lots.

Armidale Dumaresq Rural Residential Study

Table 5: Number of dwellings on new rural residentially zoned land
Number of dwellings

	Single dwelling	Medium density housing	Total
Projected demand from population projections	278	12	290
Supplementary supply	124	5	129
Sub-total	402	17	419
Potential dwelling yield from existing rural residential land	152	6	158
Total	250	11	261

Size of allotments

The area of land required to satisfy the projected demand for rural residential development will depend on the area of the new rural residential allotments. Rural residential development applies to a range of rural lifestyle lots, from those with a relatively small area with full urban services to larger hobby farms with few services.

In the rural residential estates that were approved in Dumaresq Shire during the 1990's the more popular estates (those with fewer vacant allotments) tended to be those with smaller lot sizes (average 2.7 hectares) and a reticulated water supply. An exception to this trend is Tanglewood Road estate which has no vacant lots and water is supplied from bores on each lot. However, this estate was one of the first estates to be developed with 8 of its 10 lots being released nearly 14 years ago. Those estates with comparatively larger lot sizes (average 7.8 hectares) and no reticulated water supply tended to have higher vacancy rates and none of the estates have released all of the lots for which development consent has been granted. All fourteen estates have sealed roads and 10 provide a reticulated water supply (refer to *Table 6*).

Table 6: Characteristics of rural residential lots approved in former Shire, January 1989 – May 2003 (as at June 2003)

Estate	Rural residential lots released	Lots built	Lots vacant	Lots not Created from consent	Services	
					Reticulate d Water	Sealed road
Toadalla	22	16	6	0	√	√
Tilbuster	17	15	1	9	√	√
Gungurru	29	28	1	0	√	√
Lynland Park	27	22	5	6	√	√
Tanglewood Rd	10	10	0	0		√
Middlefarm Road	8	3	5	0		√
Farrell	6	3	3	6		√
Long Swamp Road	2	2	0	9	√	√
Hawthorn	12	8	4	0	√	√
Hamilton	5	3	2	16		√

Armidale Dumaresq Rural Residential Study

Hawthorn South	8	3	5	0	√	√
Stoney Ridge Road	0	N/A	N/A	16	√	√
260 Gostwyck Rd	0	N/A	N/A	6	√	√
162 Castledoyle Rd	0	N/A	N/A	7	√	√
TOTAL	146	114	32	75	10	14

A questionnaire was sent to ten local real estate agents asking them to describe current and likely trends for demand over the next 5 years in the local real estate market. Only two responses were received. However, these responses identified the following demand in relation to rural residential development:

- 8,000m² to 10 hectare lots on the outskirts of the City limits with reticulated water (where possible), sewer, sealed roads and local open space provided. There is an increasing demand for residential lots on the edge of town with town facilities on land with an area of 8,000m² to 2 hectares
- 2 to 4 hectare lots close to town in all directions with reticulated water, on-site effluent disposal and sealed roads.
- 10 to 40 hectare lots within 20 kilometres of Armidale with on-site water supply and effluent disposal and with reasonable access.
- Rural residential properties on the edge of town have shown the best appreciation rate.
- It should be made easier to obtain building permits on existing small holdings close to town or adjoining other subdivided blocks.

To meet the demand for rural residential development in the semi-rural areas surrounding Armidale it is recommended that two types of development be provided. The average figures below for small and medium sized rural residential lots allow for land that would be required for roads, open space and the like.

- Smaller rural residential allotments close to town with the potential for some urban services, particularly reticulated water supply. An appropriate lot size for this type of development is considered to be between 2 and 10 hectares (average 6 hectares). These types of development would provide a rural lifestyle for town workers. While a reticulated water supply could be provided in most circumstances, the disposal of effluent would need to be allowed for on-site. Consequently the minimum lot size would need to be about 2 hectares. While there is provision for lots to be larger than 2 hectares, it is expected that many will be 2 hectares or slightly greater so that they can be adequately managed by busy people.
- Medium rural or hobby/small farm allotments within 10 minutes of Armidale with few urban services, basically only sealed road access. An appropriate lot size for this type of development is considered to be between 10 and 40 hectares (average 25 hectares). This type of development would be located in a more rural setting than smaller rural residential estates but still be accessible to Armidale and its services. It would provide for some hobby farming activities. Where farm dams are needed lot sizes of greater than 10 hectares would be needed.

For the purposes of predicting the likely future proportion of smaller and medium rural residential allotments it is not possible to use previous trends as a guide since several amendments to the Dumaresq LEP No. 1 have varied the development standards for rural and rural residential subdivision over time. However, it appears that there has been greater demand in the past for smaller allotments with some urban services than the larger allotments with few or no urban services. Therefore, the following estimates are made – that 70% of new rural residential development will be for smaller allotments and 30% for medium or hobby/small farm allotments.

Armidale Dumaresq Rural Residential Study

Table 7 shows the estimated future land supply that will be needed for rural residential development.

Table 7: Projected demand for rural residential land

	No. of lots	Average area (ha)	Total area (ha)
Small holdings	179 (70%)	6	1,074
Medium holdings	76 (30%)	25	1,900
Total	255		2,974

The area of land currently zoned Rural Small Holdings 1(c) under Dumaresq LEP No. 1 is approximately 19,025 hectares. The projected area of land required for rural residential development is 2,974 hectares or about 16% of land that is currently zoned Rural 1(c) Small Holdings under Dumaresq LEP No. 1.