

PALERANG RURAL LANDS STUDY REPORT

Information, issues and options for the future land use of the Palerang rural areas.



Prepared by: **Garret Barry Planning Services Pty Ltd**

For: PALERANG COUNCIL

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Palerang Rural Lands Study Report

Prepared for: PALERANG COUNCIL

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GLOSSARY OF TERMS AND ABBREVIATIONS

Term	Definition
ABS	Australian Bureau of Statistics
Commercial agriculture	Farming activity likely to generate some part-time net income after deduction of operational costs
CP	A Contributions Plan prepared under the provisions of the <i>Environmental Planning and Assessment Act</i> to levy contributions on new development
DCP	A Development Control Plan prepared under the provisions of the <i>Environmental Planning and Assessment Act</i> which specifies certain planning controls to apply to new development
DPE	NSW Department of Planning and Environment
DPI	NSW Department of Primary Industries
EH	Existing Holding – a holding of land where a dwelling is permissible. See clause 4.2A(6) of the Palerang LEP
EPA Act	The <i>NSW Environmental Planning and Assessment Act 1979</i>
Hobby farm	A rural land holding where the level of agricultural use does not approach a net part-time income. Generally a smaller holding but may include larger ownerships with minimal productive agricultural land
LEP	A Local Environmental Plan prepared and gazetted under the provisions of the <i>EPA Act</i>
LGA	Local Government Area
LLS	NSW Local Lands Services
Lot	A single title parcel – normally classified as a lot in a Deposited Plan
OEH	NSW Office of Environment and Heritage
OSSM	On Site Sewerage Management System
Parcel	A non-specific grouping of land – can be either a lot or a holding of several lots
RDA	Regional Development Australia
Rural residential	Usually a small parcel of rural land where the primary use is rural living with no or minimal commercial agriculture
Rural retreat	Usually a large rural land parcel, often forested, where the dominant use is rural living and environmental protection, with minimal commercial agriculture
Rural small holding	This can be either a hobby farm or a rural residential parcel but usually a smaller size of 20 ha or less
SEPP	A NSW Government State Environmental Planning Policy prepared and gazetted under the provisions of the <i>EPA Act</i>

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EXECUTIVE SUMMARY

This report has been prepared by Garret Barry Planning Services, the planning consultant engaged to prepare the Palerang Rural Lands Strategy and is not an endorsed Council document.

The purpose of this report is to commence a dialogue with the community regarding the development of a 20 year Council strategy for the rural lands of the Palerang Local Government Area (LGA). The report has the primary task of stimulating community discussion on the issues relating to rural land which are in need of a Council response. The report does not attempt to offer final solutions to the identified issues and is not a formal strategy (that will come later). It aims to assist in considering the issues and possible solutions by stimulating community discussion and encouraging submissions to Council on people's views for the future of the rural area. Additionally, the report provides a summary of relevant available data on the rural lands of the Palerang LGA.

Data on rural land use, history and trends is complex and there are limitations on some available data without costly research beyond the scope of this project. It is felt that sufficient information has been assembled to draw out the issues but further research may be warranted in the Strategy development stage to add strength to some of the final recommendations.

The data in this report paints a picture of the current Palerang rural area and identifies over 36 issues. Some significant issues are:

- The real net income of commercial agricultural producers in the Palerang LGA has continued to decline over the past two decades – similar to most beef and sheep areas of NSW.
- The price of rural land in the Palerang LGA is high compared to more traditional agricultural areas away from population growth locations.
- The population of the Palerang LGA increased by 41% between 2001 and 2011.
- The very strong growth in rural residential and hobby farm living locations of 20 years ago has lessened from perhaps 60 or more new dwellings per year to around 30-40 today but is still strong.
- There is growing demand for urban style lands in Palerang and what should be the balance between rural and urban supply?
- Almost seven out of every ten people in the Palerang LGA that are in employment work in the ACT or Queanbeyan. Many of these people undertake their shopping and commercial activities outside the Palerang LGA.
- There is growing and diverse competition for the use of rural lands across much of Palerang LGA particularly in the western area. Land uses range from traditional beef and sheep farming to hobby farming, rural living to land conservation.

- Palerang land use planning provisions reflect some of those contained in the repealed planning documents of the five former Councils that existed over the LGA before amalgamation in 2004. Consideration needs to be given to whether this is a good approach or whether there should be a more uniform approach based on a single Palerang community and biophysical parameters.

The report will be exhibited for a period of five weeks and the exhibition will include community information sessions at eight venues. Submissions will then be considered by Council's Rural Land Use Study Committee and a draft strategy developed for public consultation.

This report has identified 36 significant issues so far and there are likely to be more as community consultation occurs. New issues will be added for assessment and the resolution of solutions.

The following list summarises the 36 issues identified by Garret Barry Planning Services so far.

Issue No.	Issue	Précis of Draft Issue Response	Report Page
1	Demand for rural residential style lots.	Is it prudent to plan for a similar uptake of rural residential lots to that which has occurred over the past decade?	139
2	Need for a Land Monitor.	There seems to be merit in all councils adjoining the ACT having detailed information on the supply and demand for rural land.	143
3	How much rural residential is required for the next 20 years.	There seems to be no shortage of rural residential land in the eastern part of the Palerang LGA but further rural residential areas may be needed in north western part of the LGA in the next five years.	143
4	Monitoring land supply statistics	As per issue no. 2 above, a general land monitor would refine supply statistics.	144
5	What are the land supply targets for the RU1 and E3 zones (the broadacre areas)?	The strategy issue is probably more one of control and guidance of rural living and small lot farming in areas of acceptable impact within the RU1 zone.	145
6	Water and catchment impacts.	New areas may need to be selected in catchments where the existing and proposed impacts are not excessive. Lower densities might also be trialled to lessen impacts?	145
7	The costs and benefits of continuing growth in commuter residents to the Palerang LGA.	An issue for community input but there are limits on what planning can govern.	146
8	Economic value/impacts of rural residential and hobby level farming.	Provided further rural residential development is channelled to lower quality agricultural lands, the impact of rural residential growth on the area's agricultural economy would not appear to be significant. It seems desirable for Council to constrain the 40 ha style of settlement where it affects productive agricultural lands and suggestions are made in Section 3.3.	148
9	Defining commercial agriculture and measures to protect it.	It seems inappropriate for Palerang to set lot size controls based on a 'full-time income' from a rural property approach. Many properties from 100 ha up make some agricultural contribution and even a few smaller than 100 ha in area. This is a complex issue and Section 3.3 explores this in detail.	150
10	What can Council do to control weeds?	Planning controls over new development and the enforcement of noxious weeds legislation have limitations. In some areas there is no simple and cost effective solution.	151

Issue No.	Issue	Précis of Draft Issue Response	Report Page
11	What is the role for land use planning in fostering emerging agricultural opportunities?	Current planning rules are quite supportive of agriculture. Is this issue better considered as being more of an economic development initiative?	152
12 to 15	What lot sizes should apply in the general rural areas?	A complex issue with several options. But probably the complexity is best served by a variety of lot size areas and careful application of lot ‘averaging’ subdivision provisions.	157
16	Is rezoning required to protect horticulture in the Palerang LGA?	Probably not.	161
17	Does Council have a role in facilitating succession planning in agriculture?	Council has limited powers but controlling fragmentation and speculation can help.	162
18	Agricultural viability and lot size.	No recommendations yet – see issues 12 to 15 above.	164
19	What strategic actions could Council consider regarding conserving water in the rural zones?	New residential development in drinking water catchments beyond that allowed in current plan provisions may need to be limited. Council’s powers to control dams and bores are limited and refined State measures may be warranted.	165
20	Protection of extractive resources (for instance, sand and gravel).	Proven extractive resources are of value to the community, however, buffers are required to ensure the extraction of the resources is viable and neighbour amenity protected.	166
21	How can Council protect and enhance the rural landscapes of Palerang?	Currently the management of the rural landscape is mostly limited to managing vegetation affected by new development and the rezoning of land. Beyond this, Council would need to convince State Government that more elaborate strategies are necessary. Legislation relating to native vegetation is in the process of a major review.	170
22	How to manage existing holdings and dwelling lots that are below the minimum lot size?	It is desirable to replace the complex searching provisions with a map but the development of a map is time consuming and resource hungry. Some new initiatives are emerging to streamline the possible development of a map.	172

Issue No.	Issue	Précis of Draft Issue Response	Report Page
23	Bushfire protection for the next 20 years.	Requirements for the rezoning of land and development applications for new rural housing and subdivision development should address at least the minimum Rural Fire Service requirements plus some additional precautionary measures to address increased fire risk likely to evolve from climate change.	174
24	Increased number of extreme weather events.	Council's disaster management plans need to factor in more extreme floods and fires. Land use planning controls need to require larger buffers around areas of high flood or fire risk.	176
25	Increased pressure/competition on water resources.	Climate extremes may mean less reliable rainfall. There is a need to plan for better conservation measures and decreasing the impacts on features of new estates such as dams.	177
26	Increased chance of bushfires.	Climate extremes could result in extreme fire events – larger buffers and more detailed egress and emergency planning may be required for new estates and the retrofitting of some existing areas.	177
27	Extreme hot day impacts.	More emergency response details – especially to protect the ageing and vulnerable population.	177
28	Change in flora and fauna location and type.	There is a need to plan for species retreat corridors and similar as habitats face accelerated modification from climate change.	177
29	The projected changes in climate could directly affect the productivity of Palerang agricultural industries.	Less reliable runoff may lower production. There are limits to the ability of Council to act on this but perhaps limiting new estates in professional agricultural catchments may assist.	178
30	Implications of further rural living on road and power infrastructure.	Use development cost requirements to constrain additional residential development in poorly serviced areas. Possibly review lot sizes and lot 'averaging' subdivision provisions. Possible development trade-offs?	180
31	Tapping the benefits of Canberra/Queanbeyan.	Facilitate a diversity of short visit tourism opportunities in the rural areas. Facilitate diversity in local food production – markets, road side sales, flexibility for small business start-ups. Don't duplicate what Canberra supplies – complement?	181
32	Limiting the adverse impacts of proximity to a large urban complex.	A significant community issue to resolve is how much more rural living land is required Coupled with this is the need for improved resource planning across ACT and surrounding NSW councils.	181

Issue No.	Issue	Précis of Draft Issue Response	Report Page
33	Urban growth options and impacts on rural land.	Is more planning needed at this time for future urban lands?	182
34	Is an agricultural viability clause needed?	Probably not.	184
35	There has been concern expressed by some landowners in the rural residential zones that the permissible uses in this zone are more restrictive.	The current State review of use of Environmental zones will continue to be monitored.	185
36	Changes in State legislation	Currently the State Government has the Planning and the Biodiversity legislation under major review and has yet to finalise a policy on the use of Environmental zones. The strategy development will need to be mindful of these evolving changes.	185

1 INTRODUCTION

1.1 PALERANG RURAL LANDS STUDY

This study will develop a 20 year strategic direction for rural, rural residential and environmental land in the Palerang Local Government Area (LGA).

The Rural Lands Strategy, which will be the principal output of the Study, will be accompanied by a report which will contain data relating to rural land and its attributes. Both the Rural Lands Study Report and Strategy will be exhibited.

The Rural Lands Strategy will link directly to the NSW Government regional strategies and will allow Palerang Council to prepare refinements to the Local Environmental Plan 2014, development control guidelines and contributions plans, following an agreed strategic hierarchy. It will also contribute to asset plans and Council initiatives relating to the economic and social advancement of the rural areas of Palerang.

1.1.1 Aims and Objectives of the Study

The Palerang Council has adopted the following as objectives for the Palerang Rural Lands Study:

- To identify and examine the strategic and legislative context, key trends and the social, economic (including agriculture), infrastructure and environmental issues affecting rural, rural residential and environmental land in the Palerang LGA.
- To work with the community in the development of the study in order to gain an understanding of the study findings.
- To prepare a strategy for rural and rural residential and environmental land in the Palerang LGA based on the analysis of data (including community consultation).
- To recommend an appropriate minimum lot size for dwellings on rural, rural residential and environmental land.
- To consider the benefits and disadvantages associated with rural lot size averaging.
- To recommend the location and amount (if any) of land that could be zoned from rural to rural residential. This will also address the individual rezoning requests deferred following the exhibition of the draft local environment plan.
- To consider whether individual requests for a dwelling to be permitted on certain land.

There is a diversity of views in any community and the Palerang community is particularly diverse. As such there will be a wide range of opinion on the best land use direction for the rural areas of Palerang and the options and strategies to achieve that direction.

A fundamental objective of this study process is to therefore ensure all groups have an opportunity to participate in the strategy development and that all views receive a considered assessment before final recommendations are made to Council.

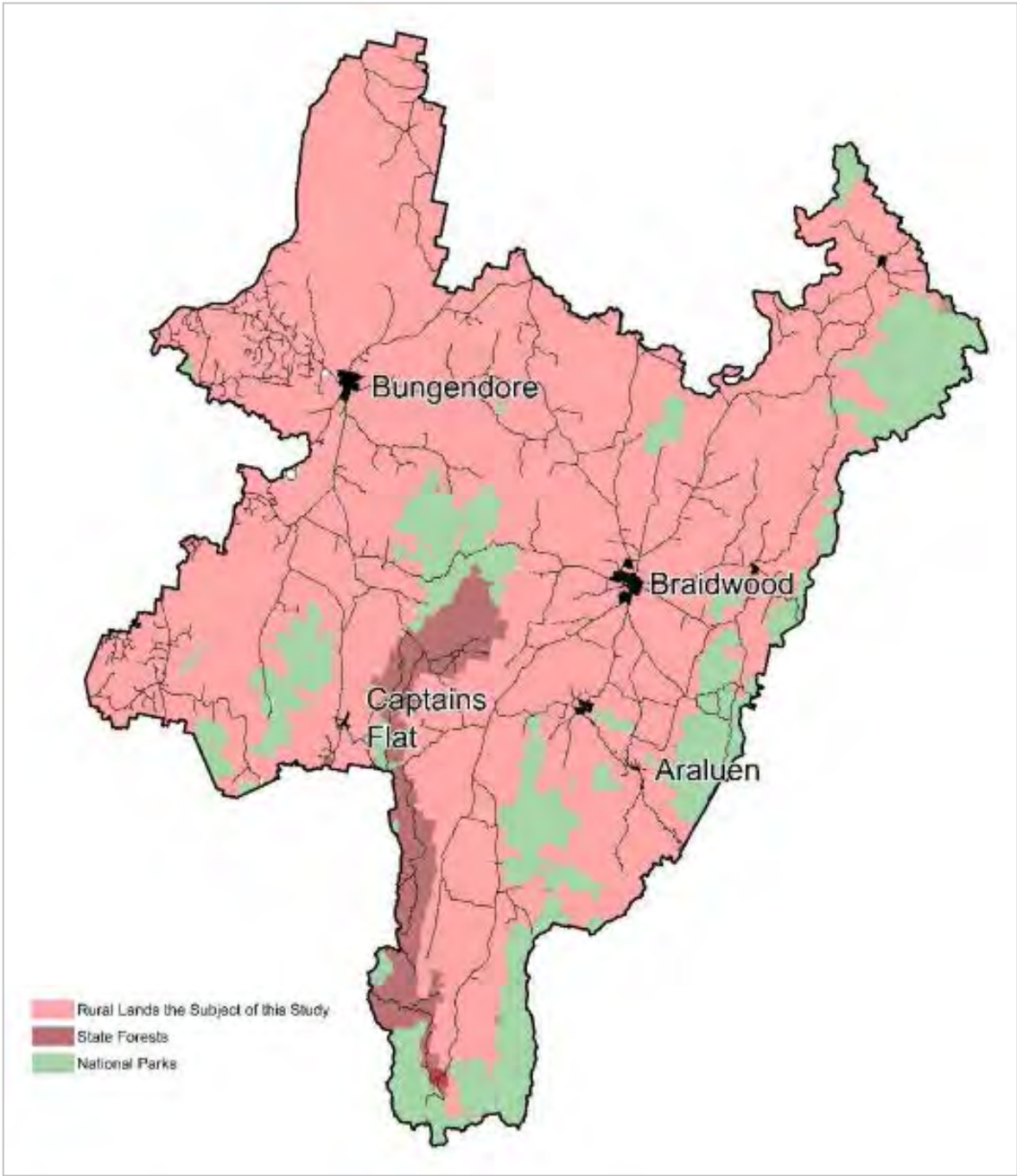
1.1.2 The Study Area

The Study will examine all privately owned rural and rural residential land in the Palerang LGA. This excludes public lands such as State Forests and National Parks, except for consideration of any impacts of these State managed lands on private rural land.

The Study will also exclude urban zoned lands and villages beyond consideration of their rural land use needs and impacts.

Map 1 below defines the study lands and Map 2 following illustrates the gazetted locality names within Palerang LGA and these names will be referred to throughout this report.

MAP 1: THE STUDY AREA



1.1.3 Proposed Timelines

- Preliminary data collection – October 2014 to February 2015.
- Exhibition of this Report is proposed for June 2015 and will include community meetings.
- Consideration of public submissions and preparation of draft strategy – August/September 2015.
- Draft Palerang Rural Lands Study Strategy to be exhibited in October 2015.
- The Strategy will be finalised by early 2016.

1.1.4 The Palerang Rural Lands Study Committee

Council has formed a Committee to oversee the project. It comprises:

- All Councillors;
- A representative of NSW Department of Primary Industries;
- A representative of NSW Department of Planning and Environment;
- A representative of NSW Office of Environment and Heritage;
- Council's Director of Planning and Environmental Services (Project Director);
- Council's Strategic Planning Coordinator (Project Manager); and
- Planning consultant.

1.1.5 Study Method

The study method was developed after consideration of the adopted terms of reference from the Palerang Rural Lands Study Committee meeting of 21 August 2014.

The Study is being undertaken in two stages:

1. Data collection and analysis; and
2. Rural Land Strategy development.

The study methodology is summarised as follows:

Data Assembly

Two rounds of data assembly to be undertaken:

- Preliminary data collection from all known sources of rural land policies, plans, strategies and information as it relates to Palerang rural land. Identification of issues and possible options.

- Data refinement – once public consultation and specialist reports on vegetation, economic profile and cultural heritage are completed.

Where quantitative data allows an evidenced base approach will be used as the basis for problem solving and preferred strategies and actions.

Consultation Strategy

A collaborative stakeholder approach will be used.

A Palerang Rural Lands Study web page was established on Council's web site early in the project. The web page will provide an accessible source of information about the study, regular reports on project progress, copies of reports and comments. It also enables readers to make comments and provide input online.

Councillors, council staff, government agencies and the community will be consulted (by correspondence, in person by interview or at workshops) to ensure all social, economic, infrastructure, environmental and land use trends and issues relevant to the rural areas are identified. Meetings of the Committee will allow continuing participation throughout the project.

Local media will be extensively used to inform and to encourage participation.

Preparation and Exhibition of the Draft Palerang Rural Lands Study Report

This report contains a summary of qualitative and quantitative data which will provide the background to enable strategy options across the rural, rural residential and environmental lands of Palerang to be considered. The draft report will not attempt to resolve options and preferred strategies, its focus will be on gathering the data and listing all options of any practicality. Following exhibition and consideration of submissions, a final Palerang Rural Lands Study report will be produced to guide the development of the strategy. The final version will summarise the options and explain why some options are preferred and others are not feasible or not preferred.

Eight community consultation workshops will be held on this draft report so as to allow good access for all residents. Workshops will be held at:

1. Araluen;
2. Braidwood;
3. Bungendore;
4. Bywong;
5. Burra;
6. Nerriga;
7. Carwoola; and
8. Wamboin.

Rural Land Issues and Options Development

This exhibition draft data report will be expanded into the formal Palerang Rural Lands Study Report, following the community and government agency consultation to include selected options.

This exhibition draft has been produced by the consultant team for community discussion and does not represent any adopted position of the Council.

The Strategy (detailed below) will then be developed and reviewed, including wide community consultation resulting in preferred options and an implementation plan.

The Palerang Rural Lands Strategy

The strategy will provide a strategic direction for rural, rural residential and environmental land in the Palerang LGA for the next 20 years.

The strategy will also contain recommendations and implementation strategies in relation to:

- Alignment with State policies and regional strategies;
- Matters referred by Council to the Study process from consideration of public submissions on the Palerang LEP 2014. Lot size across all rural, rural residential and environmental zones;
- Possible rezoning of land;
- Allowing rural dwellings on lots or holdings below the current minimum lot size where a dwelling is permissible under the current local environmental plan;
- A land use strategy for each of the following economic initiatives:
 - emerging niche agricultural industries;
 - rural tourism;
 - expanding rural living options to attract new arrivals to the LGA and expand the population base;
 - possible amendments to the local environmental plan and development control plan to enhance the protection of the established and major rural industries;
 - visual landscape values and its value to tourism and new settlers; and
 - some preliminary comment on cultural heritage protection;
- Providing recommendations for future Planning Proposals to amend Palerang LEP 2014 to address the strategy land use recommendations;
- Provide draft development control plan provisions;
- Provide recommendations for a possible contributions plan under Section 94 or 94A or amendments to current contributions plans to update requirements for the rural zones.

A draft Strategy will be prepared from the finalised Palerang Rural Lands Study report and be exhibited, including wide notification in the media and a further round of community consultation meetings as proposed for this report.

Following consideration of the submissions, Council will adopt a final Strategy and then commence implementation of Strategy recommendations and action plans.

1.1.6 Discussion Paper on Commercial Agriculture in Palerang

As part of the input to the first round of the data assembly, a discussion paper *Commercial Agriculture in Palerang LGA* (GBPS and Breckwoldt 2015) has been prepared with input from an agricultural and water specialist. This is a qualitative report to lead some discussion on where agriculture might head in the coming 20 years and the implications for land use planning strategy.

This discussion paper will be exhibited with the exhibition draft of this report and extracts have been summarised in relevant sections below.

1.2 PURPOSE OF THIS REPORT

1.2.1 What is the Role of this Report?

This report forms the background from which the Palerang Rural Lands Strategy will be drawn. It is progressing through several stages:

- Initially it was developed by the consultant team as the collection house for the more readily available data on land use in the rural areas of Palerang and to summarise all the issues that have appeared of recent times relating to the use of land in the rural context.
- Then preliminary comment was sought from the Committee.
- Committee and staff comments have been reviewed by the consultant team and the draft revised to a stage where it can be placed on exhibition for public comment.
- The expanded report will now be the subject of wide public consultation. This first round of consultation will seek to gather further issues and options from the community relevant to rural land use planning and to receive some indication of community preferences for the 20 year vision for the rural areas and options to address issues of concern.
- The submissions from the consultation will be reviewed and a final draft prepared with refined options. This revised version of the report, and in particular the refined options for problem land use issues, will guide the preparation of the draft Palerang Rural Lands Strategy. This final draft will accompany the Draft Strategy, as background information, when the Strategy is publicly exhibited.

1.2.2 How to Read this Report

This is the exhibition draft, it does not purport to have gathered all the information nor identified all relevant options. It is a preliminary work from the consultant team with some guidance and input from the Committee and from consideration of initial selected interviews of people and organisations with some specific knowledge or role in rural land use.

The exhibition task is to draw out further data from the community that might influence rural land direction, to receive public comment on options people prefer or prioritise and to receive views on areas needing further research.

This draft exhibition version report is in two main sections:

- Section 2 presents the gathered data with some analysis.
- Section 3 then attempts to draw out the issues and range of possible options but without attempting to finalise preferred options apart from commenting on options shown to be marginal/unlikely to succeed.

1.3 FINALISING THIS REPORT

Following the exhibition and consideration of submissions, a revised draft will be adopted by Council to guide the preparation of the Strategy. This version will also be included in the exhibition of the draft Strategy as the background to the draft strategy direction.

2 DATA GATHERING AND ANALYSIS

Palerang Council was created in 2004. It was formed from an amalgamation that saw all the former Tallaganda Shire absorbed into Palerang along with most of former Yarrowlunla and the addition of small sections of the former shires of Gunning, Mulwaree and a small section from Cooma-Monaro. (See Map 3 for the location of the former shire boundaries relative to Palerang.)

A consequence of this amalgamation saw Palerang until 2014 with six different LEPs in force – a considerable administrative complication. The 2014 LEP has rolled over many of these different LEP provisions. The Rural Lands Strategy will be an opportunity to test if there are any changes or refinements needed to the 2014 LEP to address the 20 year community vision for its rural lands.

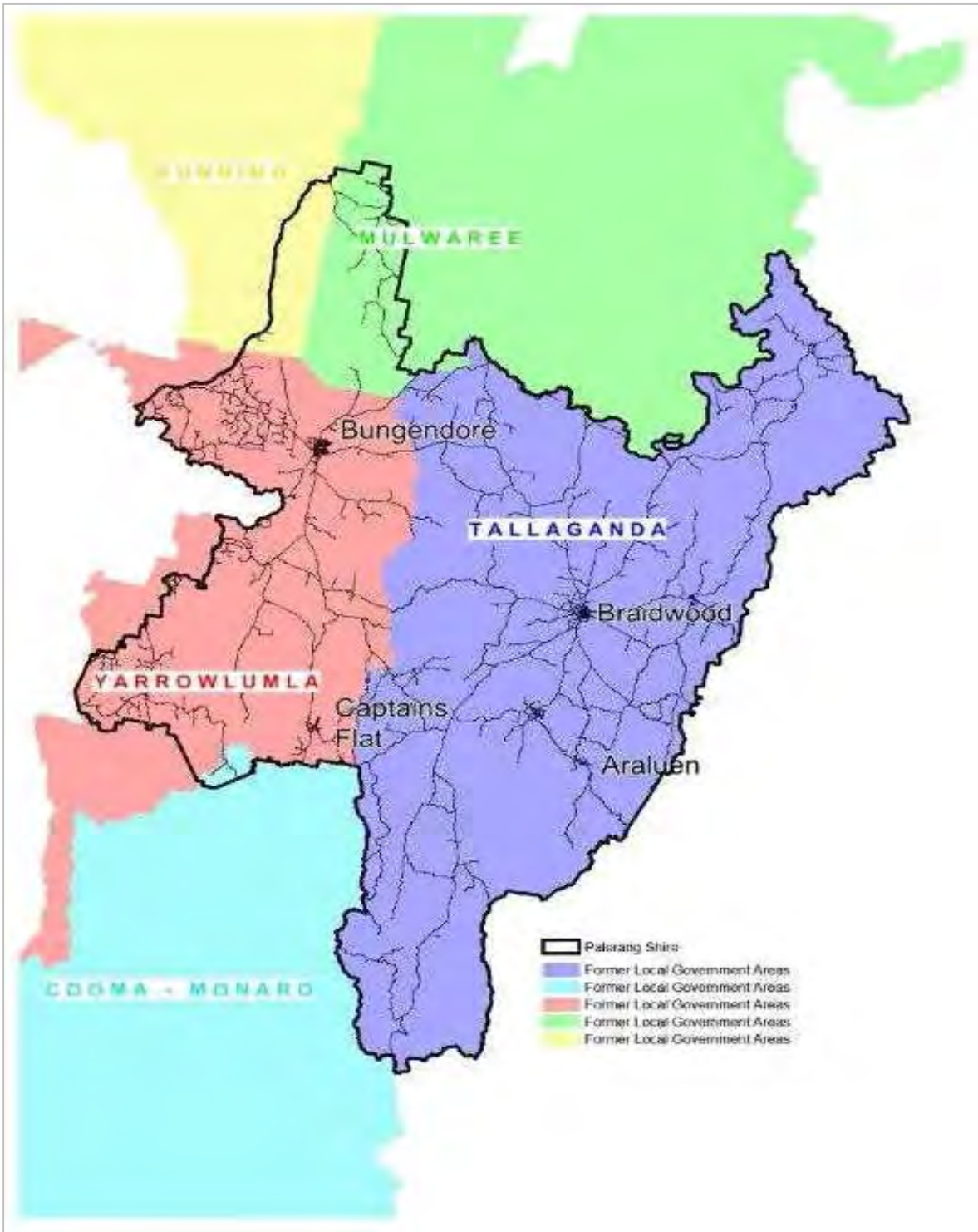
A further consequence of the amalgamation is the creation of an LGA with a range of communities of interest. Much of the former Yarrowlunla Shire area identifies strongly with Canberra and to some extent Bungendore. While much of the former Tallaganda Shire area identifies with Braidwood. Population growth is much greater in the west area and this is somewhat of an issue in the south and east in terms of perceived servicing.

The LGA of Palerang lies adjacent to and immediately to the east of the Australian Capital Territory (ACT). Consequently, Palerang settlement and land use patterns have been strongly influenced by the growth of Canberra. The Palerang LGA consists of two towns (Braidwood and Bungendore), formal villages (Araluen, Captains Flat, Majors Creek, Mongarlowe and Nerriga), rural areas in which agriculture is a principal industry and a number of rural lifestyle localities. There are 5265 rural or rural residential properties in the LGA of which 2183 are 10 ha or less.

The principal transport links for Palerang LGA are the King's Highway linking Queanbeyan to Batemans Bay on the coast and the Federal Highway linking Canberra to Sydney and on the northern boundary of Palerang. Canberra Airport is approximately 28 kilometres from Bungendore.

The Palerang Rural Lands Strategy, as required by the project brief, is focused on the rural areas of Palerang. These areas are identified throughout the report as Rural East Palerang, Rural West Palerang and the localities of Wamboin-Bywong and Carwoola-Burra. A full description of these localities can be found in Section 2.2.1 Rural Palerang in Overview.

MAP 3: FORMER LOCAL GOVERNMENT BOUNDARIES



2.1 NATURAL RESOURCES OF PALERANG RURAL AREA

2.1.1 Topography/Landform and Soils

Lake George is the predominant geological feature of the study area. It was formed some 30 million years ago when the climate was drier and cooler.

Lake George and its westerly ridge of hills demonstrate a rift valley landform. The Lake George landscape was created by landforms rising over 30 million years ago which interrupted the flow of three rivers – the Yass, Molonglo and Yandyguinuala. The hills are known as the Lake George Fault and run from Lake George south into the Jingera and Tinderry ranges. Lake George (68 km in its north-south axis and 19 km in its east-west axis) is considered to be one of the most important geological features in Australia. When Lake George is full it is the largest fresh water lake in Australia.

The Lake George landscape offers a continuous sequence of geological evidence and climatic history over the last 350,000 years. It also demonstrates a vegetation and fire history over that period which assists in determining the evolution of the Australian environment.

Western Palerang also contains a number of other distinct landscapes, the most notable being the Tallaganda and Tinderry forests and the Molonglo Plains.

Most of Palerang's better quality agricultural land is located in the Braidwood area. Soils of this area are largely granitic soils and receive more rainfall than the lands in the western segments of the Council area. Some good quality basalt soils exist as small outcroppings.

The Burra district lies south of Queanbeyan, its eastern boundary delineated by the Queanbeyan River and the Tinderry Mountains and its western boundary by the Murrumbidgee River. It is a hilly wooded area with cleared patches of farming land and includes the Burra Valley and the Urida Valley to the east. (Ploughman).

NSW Office of Environment and Heritage (OEH) has digital online data of soils covering Palerang LGA. See <http://www.environment.nsw.gov.au/eSpadeWebapp/>.

Soil analysis may be effected at the next phase of the strategy if further areas are to be investigated for further development such as rural small holdings.

Only part of the LGA has detailed soils data. From a general overview of the OEH mapping, the following summary is made:

- There are numerous sites where OEH has mapped slight to moderate soil erosion – often associated with lower drainage lines and creek banks.
- There are in excess of 100 recorded sites of high erosion – mostly specific gullies and drainage lines within rural properties but some old mining areas and forestry operation sites are also recorded.
- There are approximately 10 sites in the LGA mapped as extreme erosion – again extensive gulley erosion sites on rural properties.

The data is both based on surveys mostly 20 plus years old and does not detail the current state of activity of erosion. Soil conservation works programs have been in action for many years. But it seems a strategy for containment and further rehabilitation of eroded lands is worthy of further investigation as part of the Rural Strategy. The role of Council in combating erosion is limited to Council public works and conditioning development works. But Council and the community may also consider various land care and other approaches if the concerns in any particular area warrant such action.

2.1.2 Native Vegetation and Fauna

Current data of Council on the general vegetation associations is being reviewed and more detailed mapping is expected as part of the development of the Rural Lands Strategy. This may help with the refinement of the LEP Terrestrial Biodiversity Map and related environmental protection zones.

Palerang has approximately 250 sq km of State Forests and approximately 635 sq km of National Parks and Nature Reserves. These two public land management systems cover about 17% of the LGA and contain an important core of the LGA biodiversity. But some ecosystems are now well represented and protected in the public reserves.

The Palerang LEP 2014 maps lands of interest for biodiversity outside of National Parks and State Forests (see LEP terrestrial biodiversity map series –

<http://www.legislation.nsw.gov.au/mapindex?type=epi&year=2014&no=623>.

The LEP lands mapped with biodiversity value cover a significant proportion of private lands. There are specific considerations in Clause 6.3 of the LEP that apply to development in these areas and seek to conserve important aspects of the biodiversity.

Controls on the clearing of native vegetation over most private rural lands in Palerang is governed by the *Native Vegetation Act 2003* and its regulation. The Act requires consent for clearing to be obtained from the Local Lands Service (LLS).

The *Threatened Species Conservation Act 1995*, its regulation aims to protect any threatened species, populations or ecological communities. A register is maintained by the Office of Environment and Heritage of species recorded as threatened and associated areas mapped as endangered ecological communities and populations.

Given there is extensive remnant habitat in Palerang there are many recorded areas and individual sites relating to threatened species and any development application or Planning Proposal for such affected lands needs to address this legislation. Some specific controls and guidelines are included in the Palerang DCP 2015.

The NSW Government currently has all biodiversity legislation under review. See section 2.6.12.3 for detail.

The web site of the Office of Environment and Heritage NSW has significant data on vegetation and fauna. Its atlas (<http://www.bionet.nsw.gov.au/>) records 14 major native vegetation communities as occurring in Palerang and has some data on

recorded threatened species and their habitats. A summary of those is included in Appendix 1. However, the threatened species listing is far from conclusive and only relates to known sites.

An important issue is to plan to ensure sufficient retention of vegetation corridors to enable species movement across the landscape. Such movement is vital for the genetic health of populations that might otherwise become trapped and inbred on small “islands” of vegetation. Bird movement can reduce pest build up in vegetation – both with agricultural benefits and to limit vegetation dieback.

Council has developed guidelines for habitat and wildlife corridor protection and enhancement as part of the Draft Palerang Development Control Program (DCP) 2015. This DCP also explains the process for development assessment where native vegetation may be affected.

Noxious and Environmental Weeds

The *Noxious Weeds Act 1993* and its regulations define the provisions for control or eradication of weed species. Weeds of considerable economic harm can be declared noxious. In Palerang, plants such as serrated tussock and broom bush are so declared and landholders have obligations to control these. Large sections of Palerang are heavily infested with serrated tussock and as it is a species that is largely unpalatable to stock and crowds out useful pasture, it can have significant impacts on agricultural production.

The legislation allows for the declaration and control of environmental weeds which are usually exotic plants that are invading native vegetation or causing environmental problems on farmland, parks, gardens, etc. Outside of State owned lands, Council is the weeds authority.

Pest Animals

The LLS is responsible for enforcement of the *Local Lands Services Act 2013* and its regulation. This empowers the LLS to enforce provisions for landholders to control pest animals.

One of the more significant pest animals in Palerang and indeed much of rural Australia is the feral rabbit.

Currently no pest animals are of major economic significance in Palerang as to be a focus issue for the Rural Strategy. But issues relevant to Council’s management of its own lands are topical in the rural community.

2.1.2.1 Kosciusko to the Coast Program

The Kosciusko to Coast (K2C) region is an east-west band between Queanbeyan and Cooma, linking the edge of Kosciusko National Park with the western edge of the forests running along the coastal escarpment. Stretching from Kosciusko National Park to the south coast of New South Wales, the region occupies the greatest altitudinal sequence on the Australian continent, supporting a variety of

woodland and forest ecosystems and ecological communities ranging from alpine snowfields to coastal heath and dunes.

Most of Palerang LGA is included in this important corridor and improvements to habitat connectivity are an important goal for long term regional biodiversity.

A partnership group in this region was instigated in 2006 and has been supported by funding from the Great Eastern Ranges Initiative (GER) since 2008. The K2C partnership focuses effort on private and public lands where landholders are interested in voluntary cooperative conservation incentives and protection options.

The lead partners to the GER are Greening Australia, National Parks Association of NSW, Nature Conservation Trust of NSW, Office of Environment Heritage and OzGREEN.

Other partners include Molonglo Catchment Group, Murrumbidgee Catchment Management Authority, Upper Murrumbidgee Landcare Committee, Upper Murrumbidgee Catchment Coordinating Committee and Southern Rivers Catchment Management Authority and the ACT Government.

2.1.3 Water Resources

Data on groundwater resources in Palerang is not extensive. Numerous bores have been sunk on rural properties and the Bungendore town water supply is dependent on bore water. Protection of groundwater recharge areas is an important planning consideration but data on aquifers is limited.

Palerang's location as part of the upper catchment of several major NSW river systems brings added planning considerations relating to sharing water with downstream uses and playing a role in the water quality to those users, in addition to Palerang's internal needs.

Palerang LGA extends over three principal water catchments. (See Map 4).

The first major catchment system is the catchments of the Yass, Molonglo and Queanbeyan Rivers which are headwaters of the Murrumbidgee River and are therefore components of the Murray Darling Basin. This catchment is the subject of Water Sharing Plans produced by Water NSW but there is little firm policy direction as to control of land use at this stage.

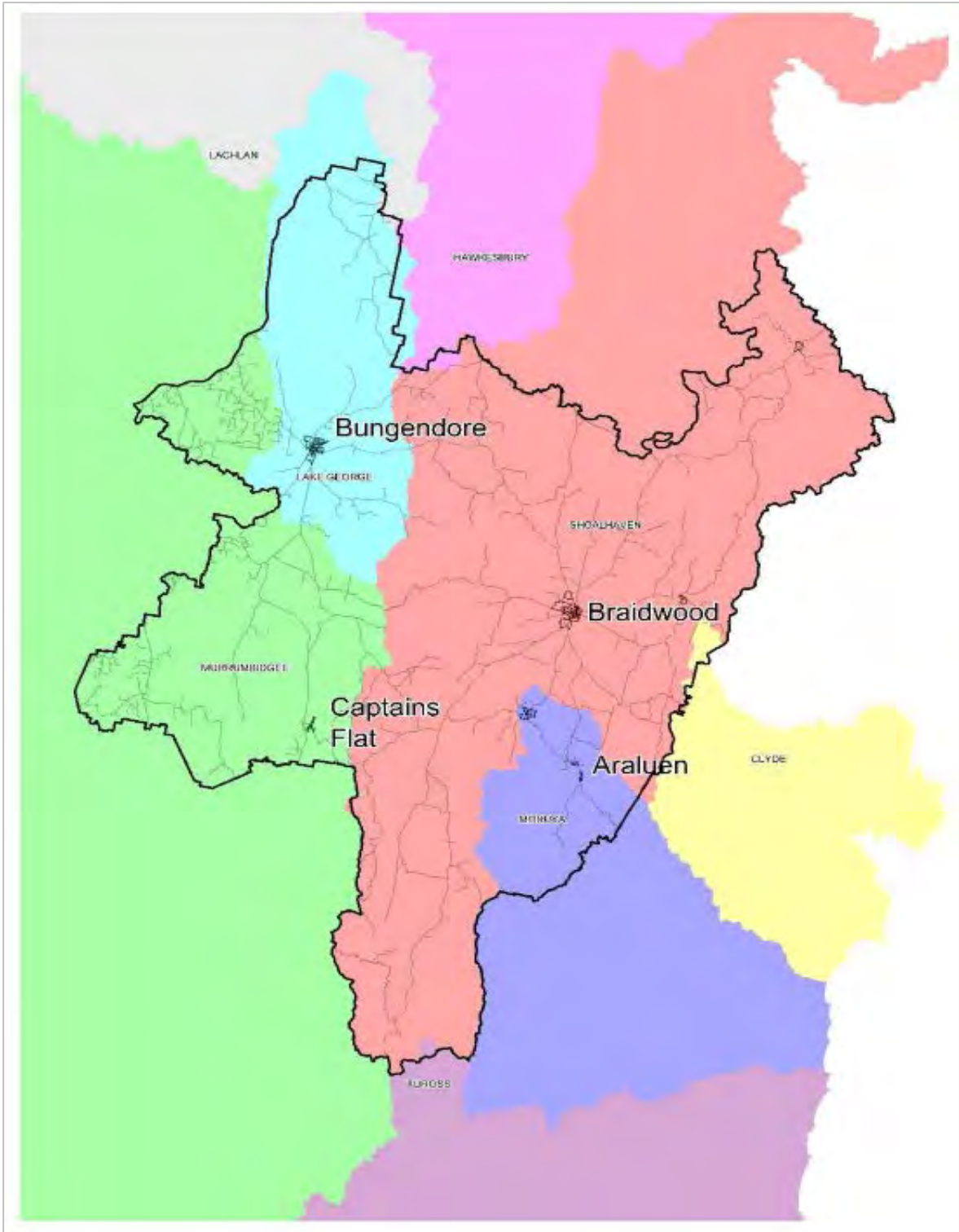
Googong Dam forms part of the water supply for Queanbeyan and Canberra. The dam and much of its lower catchment is in Palerang LGA. Parts of the Burra and Urila rural living areas drain to this dam. Whether there should be more development in this water supply catchment is a planning issue to be resolved.

The second catchment system, the Lake George catchment, is a terminal system which receives inflows from a number of streams (Collector, Allianoyonyiga, Taylor, Butmaroo and Turallo Creeks), but from which there are no outflows. Given this is a terminal system, water quality management assumes a higher priority in this catchment.

The third is the Shoalhaven catchment which occupies much of the eastern parts of Palerang and falls within the jurisdiction of the Sydney Catchment Authority. The Shoalhaven catchment is viewed as a potential long term water supply for Sydney and is subject to a regime of planning controls aimed at retaining current water quality and volumes as detailed in Section 2.6.6.

In addition to these three major catchment systems, the headwaters of the Moruya River comprise much of the Araluen district of Palerang.

MAP 4: CATCHMENTS OF PALERANG



2.1.3.1 Water Research by Palerang Environmental Services

In 2012 Palerang Council produced a series of West Palerang Water Futures reports funded under the Commonwealth Government's *Strengthening the Basin Communities* program. The aim of this project was to assess the impacts of water allocations, increased climate variability, and population growth on the yield of sub-catchments (water availability) within Western Palerang. Reports were produced on:

- Water resources;
- Climate variability;
- Population pressures;
- Water quality; and
- A summary/concluding report titled *Snapshot on Sustainability*.

Sections 2.1.3.2 and 2.1.3.3 rely heavily on the material contained in these reports and related research of Council's Environmental Services Section. While these reports cover only part of Palerang, they contain conclusions of relevance to the remaining area and assess most of the intensively developed rural living areas of Palerang.

2.1.3.2 Catchment Yields in West Palerang

Secure supply of water in Palerang has been identified as a major issue for some time and was listed as a major issue in Council's most recent (2011 and 2012) State of the Environment (SOE) reports.

The SOEs identified that the pressure on limited water supplies result from an increasing population which is a major long term issue that requires careful consideration through Council's planning policies. (SOE, Palerang Council 2011 p.1.)

The reports that make up the Water Futures Series of reports support this proposition. Su Wild-River in her Sustainability (June 2012) report states:

"...there is evidence that water in Western Palerang is already being used beyond sustainable yields. This rich, local analysis also shows significant spatial variability even within this small geographic area. The risk factors for sustainable water management are considerably higher for the north and west of the study area than for the southern and eastern areas. The trajectories for population, climate and land use all suggest that water management risks continue to increase, especially in those areas which are already stressed. This trend is counter to the objectives of all major institutions and initiatives for improving Australia's water management." Wild-River (June 2012, p.41).

The issue of catchment water availability is supported by Beavis (2012):

"...those streams draining densely populated areas within Palerang...are becoming increasingly drier over time. It is assumed that this response is due to water use, and/or interception reducing both surface runoff and groundwater discharge to streams." Beavis (2012, p.18).

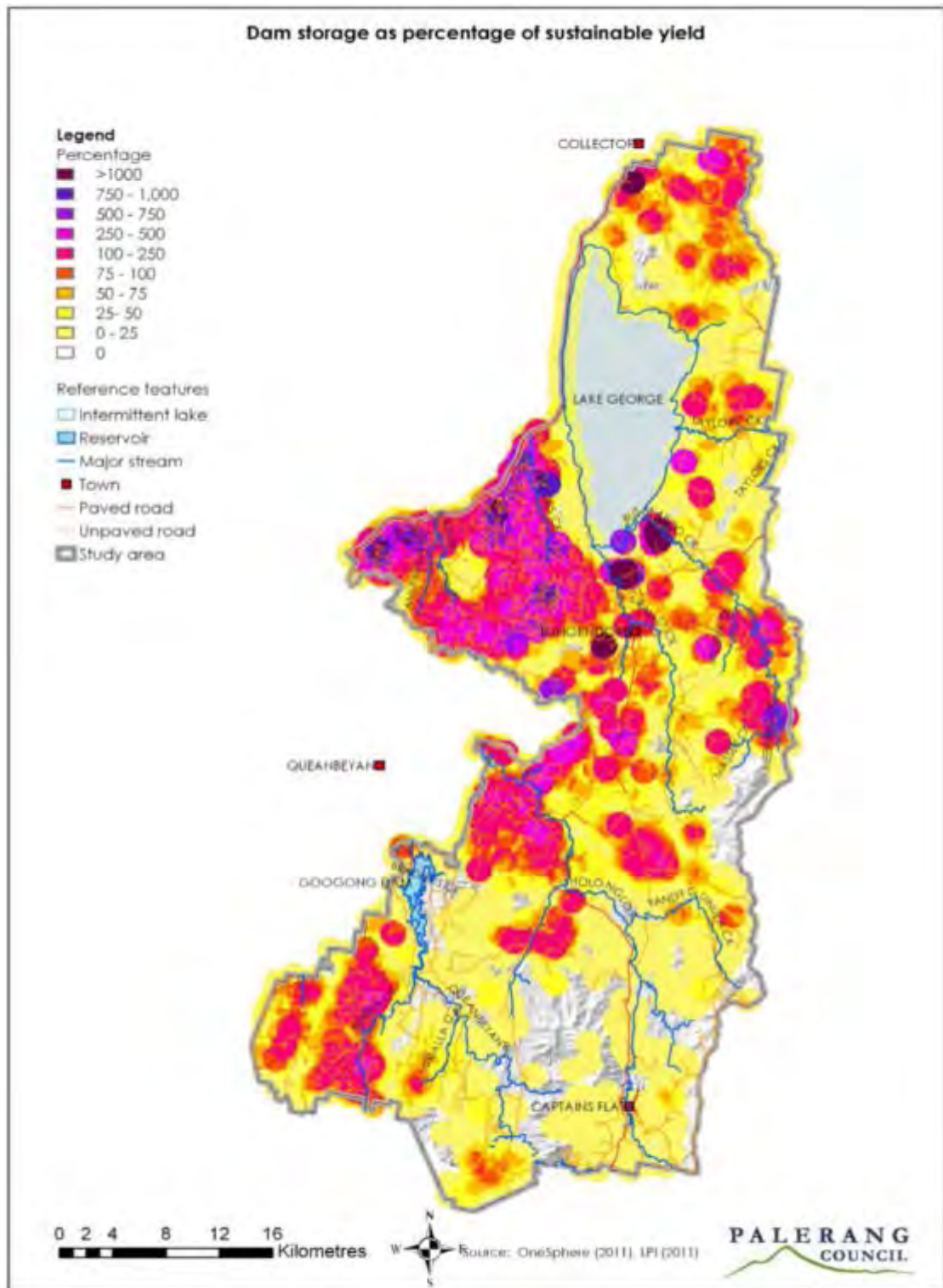
“In the last few decades, a number of subregions have been converted to rural residential developments (for example, Wamboin, parts of the Molonglo Valley, and Burra Creek) and the township of Bungendore has become increasingly urbanized. The spatial distribution of these developments has created ‘hotspots’ for water resources management...because of the higher demands for both surface and ground waters, and the diversion of water along different pathways compared with a less modified environment.” Beavis (2012 p.4).

The proliferation of rural dams on small rural subdivisions is identified as one of the major reasons for the reduction in supply of water to streams in the area.

“A recent proliferation in farm dams is affecting the rainfall-runoff relationship, and reducing recharge of water courses. Farm dams have many impacts, including reducing stream flow, altering the size and timing of peak flows, and causing water losses through evaporation. ...Impacts are highest when there are many small dams, compared with fewer large dams. Only 2.4% of farm dams in Palerang are licensed, with many of the remainder fitting within classes not requiring licences, including harvestable rights and dams constructed before the WMA... The greatest density of farm dams occurs in the Upper Yass and Lake George sub-catchments, where dams are typically of small volumes. In some places, the maximum harvestable rights are exceeded by over 500%. This result was determined using aerial photographs to gain accurate estimates in the absence of dam licensing.” Wild-River (June 2012 p.32).

This view is also supported by Beavis: *“Farm dam development represents a significant interception of water across these catchments. This is not only due to the total volume of water impounded, but also because the structures are generally small (<2ML) and therefore characterised by high evaporative losses. Managing farm dam development is problematic. Licensing data indicates that only a very small proportion of dams are licensed, due to their small capacity and their use for stock and domestic purposes, and, in some cases, their role in erosion control. Those sub catchments with very high farm dam densities and/or capacities will be hydrologically stressed, and it is clear that the maximum harvestable right is being approached or exceeded. Further rural residential development in those subcatchments can be expected to increase hydrological stress, because farm dams that comply to legislative requirements can still be constructed.”* S Beavis (2012 p.33).

Figure 1: Dam storage as percentage of sustainable yield



Source: Holloway et al 2011

“There are 955 licensed bores within the study area, with domestic and stock licenses accounting for 95% of these. This number has more than doubled in the last decade, from a base of less than 400 in 2000. Four key drivers for this recent proliferation were:

- *increasing rural residential subdivisions,*
- *the drought in the early 2000s causing surface water shortages,*
- *the NSW Farm Dams policy restricting construction of farm dams to 10% of average regional runoff, and*
- *landholder responses to the Murray Darling Cap, which restricted diversions of surface water, but did not address groundwater.” Wild-River (p.34).*

“There is evidence of water table lowering within the study area. This could be a response to drought conditions, but may also be a result of groundwater abstractions.” Beavis (2012).

2.1.3.3 Water Quality

In 2012 Council’s Environmental Services Section carried out work to produce “A Water Quality Snapshot for West Palerang” (Holloway et al., Council report, 2011). Below is a summary from the report that flags some concerns regarding emerging water quality issues and their likely links to more intensive rural residential development.

The report raises the option of decreasing lot density to protect catchment values.

Fourteen pollution source types were defined and mapped by Holloway et al., (2012). The four most common sources were 2440 on-site systems of sewage management, 1853 road crossings of waterways, 1193 gully and stream bank erosion sites, and 962 km² of grazing land. The sites assessed as posing a very high individual risk were 57 extreme erosion gullies, 10 service stations/mechanics, and the Bungendore sewage treatment plant.

More than half of the total water pollution risk was from suspended solids, mostly due to sediment runoff from gully/stream bank erosion and road waterway crossings, plus agricultural activities. The other pollutant types in order of risk level were nitrogen, pathogens, other chemicals and phosphorus.

The potential water pollution risk posed by rural-residential development was found to be a dominant feature of the study area, which had a large number of these lifestyle blocks spread across a wide area close to the Canberra/Queanbeyan metropolis. Localities with smaller allotments, such as Wamboin and Royalla, tended to have a higher density of risk. Nearby localities with a slightly lower risk density, such Bywong and Burra, tended to have larger lot sizes but are also subject to regular subdivision development applications which will likely result in their water pollution risk density increasing over time.

Both the rural and rural-residential areas had water quality risks associated with grazing, gully and stream bank erosion, plus pockets of horticultural operations and forestry in the form of small but harvestable pine plantations. While the rural areas

had some additional potential impacts from cultivation of better land, the rural-residential areas had a much higher density of On Site Septic Sewerage Systems OSSMs (the most numerous point source of potential water pollution) plus a greater number of road-waterway crossings, intensive animal management sites (particularly horse arenas) and small horticultural operations. (Holloway et al., 2012 p.50).

Report recommendations:

Holloway et al., make the following water quality recommendations:

Recommendations

While this report has provided valuable baseline information for the assessment of water quality risks across the study area, the following recommendations would improve future assessments and water quality management:

- *Review options to improve the soil erosion dataset, including more precise and accurate digitising of the stream locations, inclusion of sites less than 100m in length (previously ignored) and updated assessment of the erosion extent and sediment controls at each site;*
- *Inspect, confirm, assess and approve all potential OSSMs identified from the desktop mapping of dwellings;*
- *Undertake a rapid site assessment of publicly accessible sites identified as relatively high risk from desktop analysis, particularly road-waterway crossings, to assess actual impacts on water quality and guide improved management of these sites;*
- *Review the grazing area map for spatial accuracy and options to improve the risk assessment with input from other spatial datasets such as soil parameters;*
- *Seek further peer review and expert feedback on the rapid risk assessment methodology developed for this project, including liaison with SCA as they improve their assessment formulae to allow better comparison between different pollution source categories;*
- *Encourage the establishment of a more comprehensive water quality monitoring program, even if limited resources were concentrated at high risk sites or periodically rotated between sites;*
- *Investigate opportunities for using past and future knowledge, such as aerial imagery and development application records, to produce similar snapshots at other points in time to monitor change;*
- *Review opportunities to decrease the water quality risks identified, particularly in areas with high density of cumulative risk, and implement risk abatement programs;*
- *Extend the site identification and assessment across the entire Palerang local government area, including collaborating with other agencies that contribute to water quality assessment, monitoring and reporting within the Sydney drinking water catchments, to improve local planning and environmental reporting.*

Extension across the broader region, including the ACT and other Councils, would also lead to improved catchment management outcomes.

2.1.3.4 Irrigated Agriculture in Palerang

Only limited capacity appears to exist in Palerang for irrigated agriculture. Most of the LGA is upper catchment, there are no major irrigation based storages, and stream/river flows are irregular.

Small areas of licenced irrigation appear to exist north-west of Captains Flat with fodder cropping the main use.

Some orchards and vineyards in Palerang have trickle irrigation fed from property dam storages or bores.

There is anecdotal evidence of some significant sinking of bores and tapping of ground water – particularly after the recent drought periods. Data on ground water reserves is currently limited and especially on the current or potential impact of increasing bore access to underground resources. This is an issue for further exploration and discussion as the Strategy develops.

2.1.3.5 Sydney Water Catchment

Significant parcels of land totalling an area of just over 20,000 ha have been acquired by Sydney Water for catchment protection and associated uses relating to possible backwaters of the potential Welcome Reef Dam proposal. However, there is no formal position currently from either Federal or State Government on this project and as such it would appear reasonable to assume for the 20 year life of this planning strategy, that the dam may not be built. It is understood Sydney Water have now leased back most of its holdings for periods of up to 20 years.

There is still sound logic in protecting the Shoalhaven catchment on general environmental grounds and to preserve water quality and water harvesting options.

The Sydney Catchment Authority (recently amalgamated with Water NSW) has made a submission to Council requesting zoning of its lands similar to that originally exhibited in the first Draft Palerang LEP be applied. This request will be analysed as part of the Strategy development.

2.1.4 Climate Change

There is wide scientific agreement that climate change is accelerating. A major shift in current climate patterns is not likely in the 20 year horizon of this strategy but seems to have a high risk of impact within a 50 year time scale.

Strategies to slow climate change are beyond the scope of this study but planning of land use certainly needs an awareness of the likely impacts of climate change over the longer term, as land use decisions over the coming 20 years can have impacts for centuries.

The Commonwealth Department of Environment has described the following potential impacts of climate change on the ACT. Because of the proximity of Palerang (particularly Western Palerang) to the ACT these potential impacts are

also considered relevant to Palerang west rural area and the localities of Wamboin-Bywong and Carwoola-Burra.

- The ACT (and given its proximity, Palerang) is likely to experience rising temperatures and a greater number of extreme hot days. For example, the annual average number of days over 35 degrees Celsius in Canberra could increase from 5 days currently to up to 26 days by 2070 without global action to reduce emissions.
- By 2020, the number of days with very high or extreme fire danger could increase from 23 days (in the ACT) currently to between 26 and 29 days. By 2050 days with very high or extreme fire danger may increase by up to as many as 38 days.
- Annual rainfall (in the Cotter and Googong catchments) could decline by up to 10 per cent by 2030 and 25 per cent by 2070.
- Annual runoff in the ACT region could fall by up to 20 per cent by 2030 and 50 per cent by 2070.

Implications:

- Increased number of extreme weather events.
- More pressure/competition on water resources.
- Increased chance of bushfires.
- As the number of very hot days (above 35 degrees Celsius) increase, the number of illnesses and heat-related deaths could more than double, with the elderly particularly vulnerable.
- Change in flora and fauna location and type. A need to plan for species retreat corridors and similar as habitats face accelerated modification.
- Changes in water availability, temperatures, bushfires and changes to the distribution of pest species will impact on natural environments.
- The projected changes could directly affect the productivity of Palerang agricultural industries.

(Source: Commonwealth Department of the Environment <http://www.environment.gov.au/climate-change/climate-science/impacts/act>).

Current climate change projections relevant to Palerang rural area include:

- Generally Palerang to experience increasing temperatures.
- Wilder fluctuations in weather and more severe storms, droughts, bushfires, etc.

2.1.5 Landscape and Rural Scenery

Most of the topography of the privately owned rural lands in Palerang ranges from undulating to rolling country. Most of the public lands are hilly with some steep scarps.

The landform ranges from tableland system to coastal escarpment and ranges.

There are large areas of well settled farming which have created a diverse and picturesque series of landscapes including:

- Rolling farm landscapes with scattered mostly senescent native trees, interspersed with remnant patches of native vegetation.
- Buildings and other human works of heritage value are frequently encountered in the landscape.
- Colours and variations created by long established exotic vegetation such as poplars, willows, cropping and the greener tones of improved pastures.
- Heavily forested ridgelines and in the east, and south larger areas of forest and National Park estate interspersed with patches of semi-cleared private holdings.
- Regenerating landscapes around the rural residential living areas where owners are mostly encouraging reestablishment of some native vegetation.
- “Reversion” landscapes in some of the more remote areas of the east and south where more marginal lands show re-establishment of primary scrub species – either intentionally as part of revegetation aspirations of some landowners or more economic as marginal properties struggle to retain cleared grazing areas.

Few vistas in Palerang are uninteresting. The diversity of landscape is likely a factor in new residents selecting Palerang to live in. Generally, the Palerang landscape is considered more diverse than other LGAs surrounding Canberra.

Canberra residents are attracted to the Palerang area on weekends because the landscape, country open space and social settings are different to that available in Canberra. (Personal communication with staff).

National Parks have big influence in rural areas – features include The Big Hole, Marble Arch, Nerriga/Pidgeon House. But so far there has been little commercial development of access to landscape features by the National Parks and Wildlife Service.

Landscape issues for rural land use planning centre on guiding new development such that the character of existing quality landscapes are conserved and where practical landscape enhancement is achieved. Council's new DCP proposes guidelines and these and possible other landscape measures will be explored in the Strategy.

2.1.6 Mineral and Extractive Resources

The Mineral Resources Branch – Land Use Assessment of the Department of Trade and Investment produced a mineral resource audit of the Palerang LGA in August 2014.

The audit identifies a range of mineral occurrences including gold, copper, lead, zinc, silver, molybdenum, arsenic, barium, limestone, silica and construction materials.

A number of significant base metal, gold and silver mineral resources are identified. These include:

- *The Dargues Reef-Majors Creek area south of Braidwood, which includes the recently approved Dargues Reef underground gold mine and the adjacent areas that are highly prospective for additional gold mineralisation.*
- *The Mayfield Resource area and adjacent Glenrossal Potential Resource area north of Braidwood, where exploration has identified a significant copper-zinc-gold-silver resource at Mayfield and exploration drilling at adjacent sites has identified additional mineralised zones, some of which may be economic in the future.*
- *The former Woodlawn copper-lead-zinc-silver-gold mine where exploration has outlined significant high-grade additional resources adjacent to the underground workings. In addition, it is proposed to retreat the mineral-rich mine tailings to recover additional lead, zinc, copper, silver and gold.*
- *The Captains Flat Potential Resource area which includes the Copper Creek Shear Lode resource. This area covers a northerly-trending zone of base metal-rich deposits surrounding the former Lake George base metal underground mine at Captains Flat in the southern-central part of the LGA. This area is considered to have high potential for the discovery of new base metal-rich resources.*
- *The Currawang Potential Resource area, west and north of Woodlawn, where exploration has identified additional mineralisation similar to that found at the former Currawang and Woodlawn gold–base metal mines.*

(Source: Mineral Resource Audit, Palerang LGA by Mineral Resources Branch-Land Use Assessment, Department of Trade and Investment p.7 & p.8).

Major deposits of high quality construction sand and decorative gravels are identified along the southern and eastern margins of Lake George and bordering the Shoalhaven River (fine silica sand of Aeolian origin). These deposits are utilised by local and regional markets including the south coast, Canberra and Queanbeyan.

Road-base is currently being extracted from a widely distributed array of pits throughout the LGA. A number of hard rock aggregate sources exist within the LGA, including Blacks, Canberra, Nerriga and Riverdale quarries.

The Audit notes that as minerals can only be mined where they occur and economic, environmental and other constraints further limit the areas available for mining it is essential that known resources should be protected from sterilisation by

inappropriate zoning or development, and that access to land for mineral exploration should be maintained over as much of the planning area as possible.

The Audit states that Council must, in accordance with *Section 117(2) Direction 1.3 – Mining, Petroleum Production and Extractive Industries* (19 July 2007) consult the NSW Department of Trade & Investment, Regional Infrastructure and Services, Resources and Energy Division when preparing Local Environmental Plans (LEPs) that may restrict or prohibit the potential development of mineral, coal, petroleum and extractive resources.

Furthermore, the *SEPP Mining, Petroleum Production and Extractive Industries (2007)* requires a compatibility test to be undertaken by council planners when assessing any proposed development in the vicinity of existing mines, quarries and petroleum production facilities or resources identified as being of State or regional significance.

NSW Department of Trade and Investment, Regional Infrastructure and Services (NSW Trade and Investment) encourages Council to zone areas identified in the Audit using rural or other zones that allow mining, petroleum production and extractive industries. A comprehensive listing and location of identified extractive resources is mapped in the Department's report and a copy forms Map 4 of this report.

Appendix 1 of the Department's report contains site details of all identified mineral and extractive resources in Palerang.

Economic Importance to the Region

Because of their potential economic importance to the region and State, the NSW Department of Trade and Investment has stated (as noted above) it is essential that known resources should be protected from sterilisation by inappropriate zoning or development. Economic importance to Palerang include:

- Employment in extractive industries;
- Access to building and construction materials;
- Reduced transport costs; and
- The multiplier effect from increased industrial activity.

2.2 RURAL DEMOGRAPHY

2.2.1 Snapshot of Whole Council Area

The following material has been summarised from the Palerang Economic Profile prepared by Strategic Economic Solutions, 2014. The brief for this project was to provide a current snapshot of the Palerang economy and demography. Further research is also included below into past patterns and statistics to enable the projection of options for the future community and its economic and social base.

Palerang Council's resident population totalled 14,638 in the 2011 census, and by mid-2013 the ABS estimated resident population had grown to 15,306. (The ABS makes regular estimates of population in between census surveys. The next actual census will be in 2016).

The Strategic Economic Solutions report (Houghton 2014) notes that children and youth under 20 years of age account for 31% of the population, with a significant concentration of children in the 10-14 years age group (11% of the total residents). After the 10-14 years age group, people aged between 40 and 65 years represent the largest portions of residents. This may reflect the age group where salary earners have sufficient capital to buy a rural residential property, and move to the region with their children. There is a notable trough in the population profile in the 20-34 years age groups. The proportion of the population over 65 is quite low.

State Government population projections show that overall the population in Palerang is expected to grow in the future (as shown below, to 2031) by around 5,950 people, except those from ages 15 to 29 years, and in the 50-54 year age group. The largest increase is expected in the people aged over 65 years. (p.6 Houghton and below).

Data extracted from <http://profile.id.com.au/palerang?WebID=130> demonstrates a population growth rate of 41.1% for the whole Council Area between 2001 and 2011. This is further demonstrated in the table below:

Table 1: Palerang Population 2001-2011

Area	Population 2001*	Population 2011*	Change	% Change
Palerang Council	10,169	14,350	4,181	41.1%

(Excludes overseas visitors and is adjusted to reflect "usual residence population)

(Source: <http://profile.id.com.au/Palerang>).

Figure 3: Population age distribution projections for Palerang LGA, 2011–2031

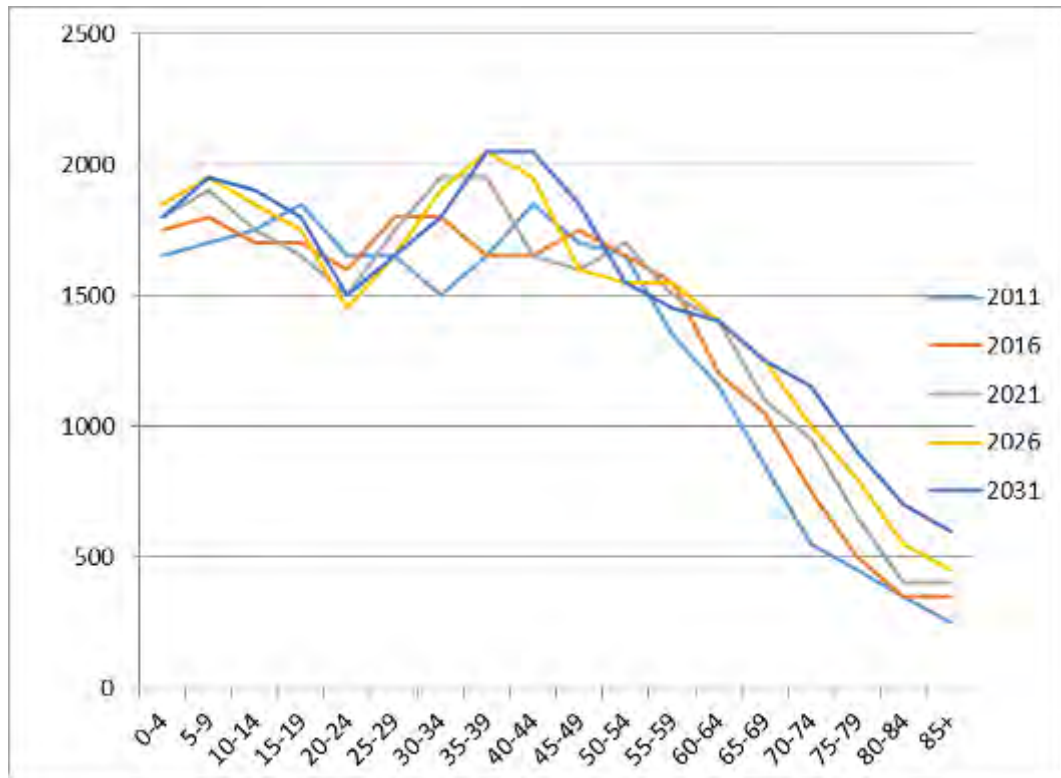
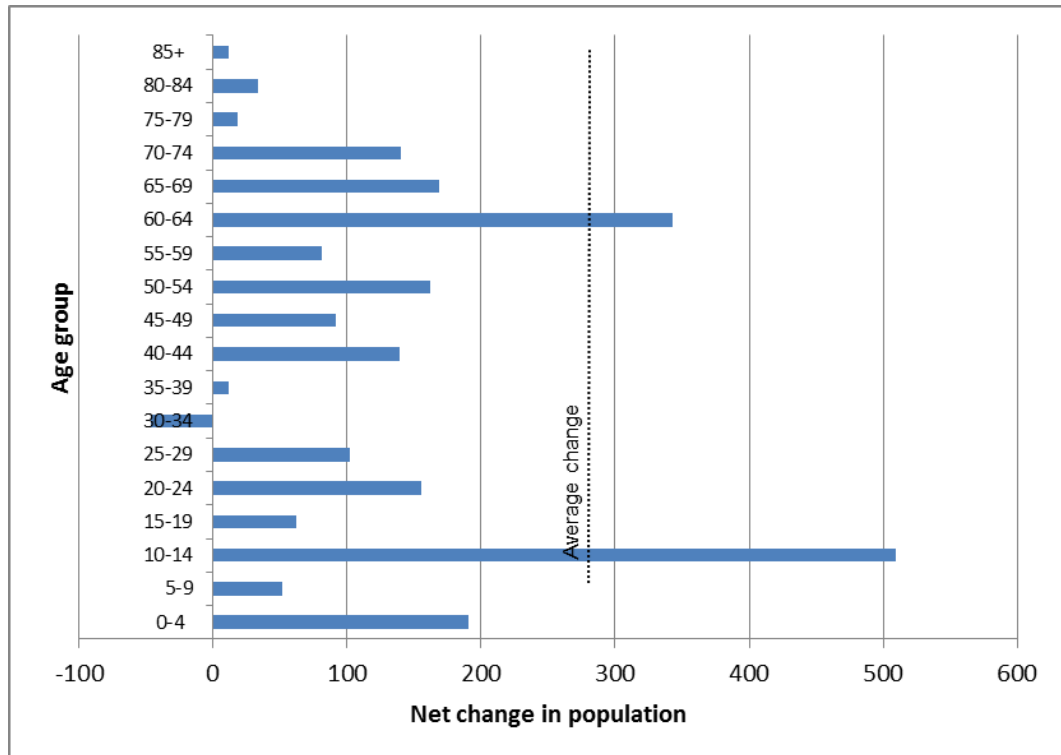


Figure 4: Rural Palerang population in Overview



The Palerang Council Area Community Profile link on the Palerang Council web site (<http://profile.id.com.au/palerang?WebID=130>) was used for this description of the Palerang rural areas population. A map of the geographic areas covered by Rural East, Rural West, Bywong-Wamboin and Carwoola-Burra Burra can be viewed by following the above link.

The summary demographic descriptions are direct extracts from the profile.id web site and shown in italics. Note that the four rural areas largely exclude the urban areas.

Profile.id, from which this section draws its information, note that the boundaries available from the ABS rarely match actual 'communities', 'suburbs' or 'service catchments' needed for effective decision making. To overcome this they have aggregated and interpreted the basic ABS data collection geographic areas into seven geographic areas, so they form a "best fit" with the Palerang Local Government boundary. The data is adjusted to "usual place of residence".

Rural East encompasses the localities of Araluen, Back Creek, Ballalaba, Bendoura, Berlang, Bombay, Boro, Braidwood (part), Budawang, Charleys Forest, Corang, Durran Durra, Farrington, Harolds Cross, Hereford Hall, Jembaicumbene, Jerrabattgulla, Jinden, Kindervale, Krawarree, Larbert, Majors Creek, Manar, Marlowe, Mayfield, Monga, Mongarlowe, Mount Fairy, Mulloon, Neringla (part), Nerriga, Northangera, Oallen (part), Palerang, Reidsdale, Snowball (part), Tarago (part), Tomboye, Warri, Wog and Wyanbene. Rural East excludes the township part of the Braidwood locality.

Rural West encompasses the localities of Bungendore (part), Captains Flat (part), Collector (part), Currawang (part), Forbes Creek, Hoskinstown, Lake George (part), Primrose Valley, Rossi, Tarago (part) and Tinderry (part). Rural West excludes the township parts of the Bungendore and Captains Flat localities.

Wamboin-Bywong: This small area encompasses the localities of Bywong (part), Sutton (part) and Wamboin.

Carwoola-Burra and District is bounded by the Australian Capital Territory in the north, the localities of Bungendore, Hoskinstown, Primrose Valley and Captains Flat in the east, the locality of Tinderry and Cooma-Monaro Shire in the south, and the Australian Capital Territory and Queanbeyan City in the west.

At the end of this section we have also provided brief socio economic descriptors for the settlements of Majors Creek, Araluen and Nerriga to test for any significant socio economic variations within the rural eastern parts of Palerang.

Table 2: 2011 Census

Geographic Area	Total pop.	Median Age	Total Dwellings	Median Household Weekly Income	Renting %
Palerang Council	14,350	41	5,995	1,813	13.8
Palerang Rural East	2,245	46	1,281	1,141	13.1
Rural West	1,676	41	693	1,929	14.2
Wamboin-Bywong	3,703	40	1,354	2,337	11.7
Carwoola-Burra & District	2,351	42	856	2,435	7.7
Braidwood Township	1,162	44	577	817	30.2
Bungendore Township	2,754	37	1,008	2,108	16.2
Captains Flat Township	437	37	216	1,333	12.6

Data source <http://profile.id.com.au/palerang/about?WebID=160>

Table 3: Population Growth 2001 to 2011

Area	Population 2001*	Population 2011*	Change	% Change
Palerang Council	10,169	14,350	4,181	41.1
Rural East	1,621	2,245	624	38.5
Rural West	1,348	1,676	328	24.3
Wamboin-Bywong	2,775	3,703	928	33.4
Carwoola-Burra & District	1,456	2,351	895	61.5
Braidwood	983	1,162	179	18.2
Bungendore	1,562	2,754	1,192	76.3
Captains Flat	425	437	12	0.03

(Excludes overseas visitors and adjusted to "usual residence")

(Source: <http://profile.id.com.au/Palerang>).

Some comment on the population change 2001 to 2011:

- The Carwoola-Burra area had a very substantial increase as this has been the focus of available vacant land close to Canberra over the period.
- In earlier periods there was more vacant land in the Wamboin-Bywong area. Given that area had seen substantial growth before 2001, it has now lessened as mostly in fill opportunities remain.

- Almost all areas of Palerang show percentage growth rates much higher than many rural tablelands councils but statistically the total numbers are small and so high percentage increase are easier to achieve.
- The area of Palerang north and west of Braidwood had an increase of 3,355 people or approximately 80% of the growth.
- The rural residential areas adjacent to Canberra grew by 1,823 people or 44% of the total growth.

2.2.2 Locality Population Highlights

2.2.2.1 Rural East

Dominant groups

Analysis of the five year age groups of Rural East in 2011 compared to Palerang Council area shows that there was a lower proportion of people in the younger age groups (under 15) and a higher proportion of people in the older age groups (65+).

Overall, 18.3% of the population was aged between 0 and 15, and 16.8% were aged 65 years and over, compared with 21.5% and 11.2% respectively for Palerang Council area.

The major differences between the age structure of Rural East and Palerang Council area were:

- A larger percentage of persons aged 60 to 64 (10.6% compared to 7.4%);
- A larger percentage of persons aged 65 to 69 (7.5% compared to 4.7%);
- A smaller percentage of persons aged 20 to 24 (1.8% compared to 4.1%);
- A smaller percentage of persons aged 45 to 49 (6.7% compared to 8.7%).

Emerging groups

From 2006 to 2011, Rural East's population increased by 312 people (16.1%). This represents an average annual population change of 3.04% per year over the period.

Between 2001 and 2011 the population grew by 624 people (38.5%), or 3.85% per year for the last 10 years.

The largest changes in age structure in this area between 2006 and 2011 were in the age groups:

- 50 to 54 (+84 persons);
- 15 to 19 (+60 persons);
- 10 to 14 (+54 persons).

2.2.2.2 Rural West

Dominant groups

Analysis of the five year age groups of Rural West in 2011 compared to Palerang Council area shows that there was a lower proportion of people in the younger age groups (under 15) as well as a lower proportion of people in the older age groups (65+).

Overall, 19.6% of the population was aged between 0 and 15, and 9.1% were aged 65 years and over, compared with 21.5% and 11.2% respectively for Palerang Council area.

The major differences between the age structure of Rural West and Palerang Council area were:

- A larger percentage of persons aged 45 to 49 (10.4% compared to 8.7%);
- A larger percentage of persons aged 15 to 19 (7.5% compared to 6.6%);
- A smaller percentage of persons aged 10 to 14 (6.0% compared to 8.3%);
- A smaller percentage of persons aged 70 to 74 (2.1% compared to 3.0%).

Emerging groups

From 2006 to 2011, Rural West's population increased by 152 people (10.0%). This represents an average annual population change of 1.92% per year over the 5 year period.

From 2001 to 2011 it grew by 328 people (24.3%), an annual rate of 2.43% over the past 10 years.

There were no major differences in Rural West between 2006 and 2011.

2.2.2.3 Wamboin-Bywong

Dominant groups

Analysis of the five year age groups of Wamboin-Bywong and District in 2011 compared to Palerang Council area shows that there was a higher proportion of people in the younger age groups (under 15) and a lower proportion of people in the older age groups (65+).

Overall, 22.2% of the population was aged between 0 and 15, and 9.9% were aged 65 years and over, compared with 21.5% and 11.2% respectively for Palerang Council area.

The major differences between the age structure of Wamboin-Bywong and District and Palerang Council area were:

- A larger percentage of persons aged 10 to 14 (10.8% compared to 8.3%);
- A smaller percentage of persons aged 0 to 4 (4.8% compared to 6.6%);

- A smaller percentage of persons aged 35 to 39 (5.3% compared to 6.9%);
- A smaller percentage of persons aged 25 to 29 (2.0% compared to 3.6%).

Emerging groups

From 2006 to 2011, Wamboin-Bywong and District's population increased by 466 people (14.4%). This represents an average annual population change of 2.73% per year over the 5 year period.

From 2001 to 2011 it grew by 928 people (33.4%), or 3.34% per annum for the 10 years.

The largest changes in age structure in this area between 2006 and 2011 were in the age groups:

- 10 to 14 (+138 persons);
- 60 to 64 (+85 persons);
- 65 to 69 (+71 persons);
- 20 to 24 (+55 persons).

Carwoola-Burra and District

Dominant groups

Analysis of the five year age groups of Carwoola-Burra and District in 2011 compared to Palerang Council area shows that there was a lower proportion of people in the younger age groups (under 15) as well as a lower proportion of people in the older age groups (65+).

Overall, 20.8% of the population was aged between 0 and 15, and 9.3% were aged 65 years and over, compared with 21.5% and 11.2% respectively for Palerang Council area.

The major differences between the age structure of Carwoola-Burra and District and Palerang Council area were:

- A larger percentage of persons aged 40 to 44 (10.2% compared to 8.8%);
- A larger percentage of persons aged 55 to 59 (9.3% compared to 7.9%);
- A smaller percentage of persons aged 35 to 39 (5.6% compared to 6.9%);
- A smaller percentage of persons aged 30 to 34 (3.5% compared to 4.4%).

Emerging groups

From 2006 to 2011, Carwoola-Burra and District's population increased by 245 people (11.6%). This represents an average annual population change of 2.23% per year over the 5 year period.

From 2001 to 2011 it grew by 895 people (61.5%) to 6.15% per annum for the 10 years.

The largest changes in age structure in this area between 2006 and 2011 were in the age groups:

- 60 to 64 (+89 persons);
- 40 to 44 (+59 persons).

2.2.2.4 Rural areas surrounding Araluen, Majors Creek and Nerriga

The following table is a summary of relevant ABS data for the rural localities surrounding Palerang's three smaller villages. It shows incomes are generally below the Palerang average and significantly below that of the west.

Araluen and Nerriga show a high aged population while Majors Creek has higher proportion of younger families.

Table 4: Population surrounding and including the small villages 2011 census

Geographic Area	Total Pop.	Median Age	Total Dwellings	Median Household Weekly Income \$	Renting %
Araluen ssc 10044	293	54	202*	858	18
Majors Creek ssc 11444	114	44	134*	919	14
Nerriga ssc 11704	367	51	224*	900	8.5

* Private dwellings

2.2.3 Farmer demographics

Within Australia as a whole the ABS has identified that Australia's farmers tend to be considerably older than other workers.

In 2011, the median age of farmers (in Australia) was 53 years, compared with 40 years for people in other occupations. This, the ABS contend, is partly due to the fact that farmers were more likely to continue working well beyond the age at which most other workers retire. In 2011, almost a quarter (23%) of farmers were aged 65 years or over, compared with just 3% of people in other occupations.

The ABS goes on to state that the age profile of farmers has changed markedly over the past few decades. The median age of farmers increased by nine years between 1981 and 2011, while the median age of other workers increased by just six years. Over the same period, the proportion of farmers aged 55 years and over increased from 26% to 47%, while the proportion of farmers aged less than 35 years fell from 28% to just 13%.

(Source: Australian Bureau of Statistics 4102.0 - Australian Social Trends, Dec 2012.)

2.3 RURAL INFRASTRUCTURE

2.3.1 Roads and Bridges

The current statistics on Palerang Roads are as follows:

- State highway approx. 100 km
- Sealed Council roads approx. 570 km
- Gravel Council roads approx. 720 km

(Source Council GIS data).

The extensive network of 720 km of gravel pavement roads is a high maintenance burden for Council. Additional rural living opportunities, especially scattered lots across the rural landscape, can generate a need for the extension of roads or pressure for the upgrading of existing pavements.

Increasing traffic loadings can also bring pressure to bear for the widening of existing sealed roads.

Some major rural residential subdivision feeder roads such as Macs Reef Road have grown organically – partly as a consequence of a small lot size and plentiful opportunities for dwellings on existing lots or holdings. Over time, as the population has increased so has the standard of the road improved. In the past decade Palerang Council has spent \$1.7m on Macs Reef Road which now carries over 5,000 vehicles per day.

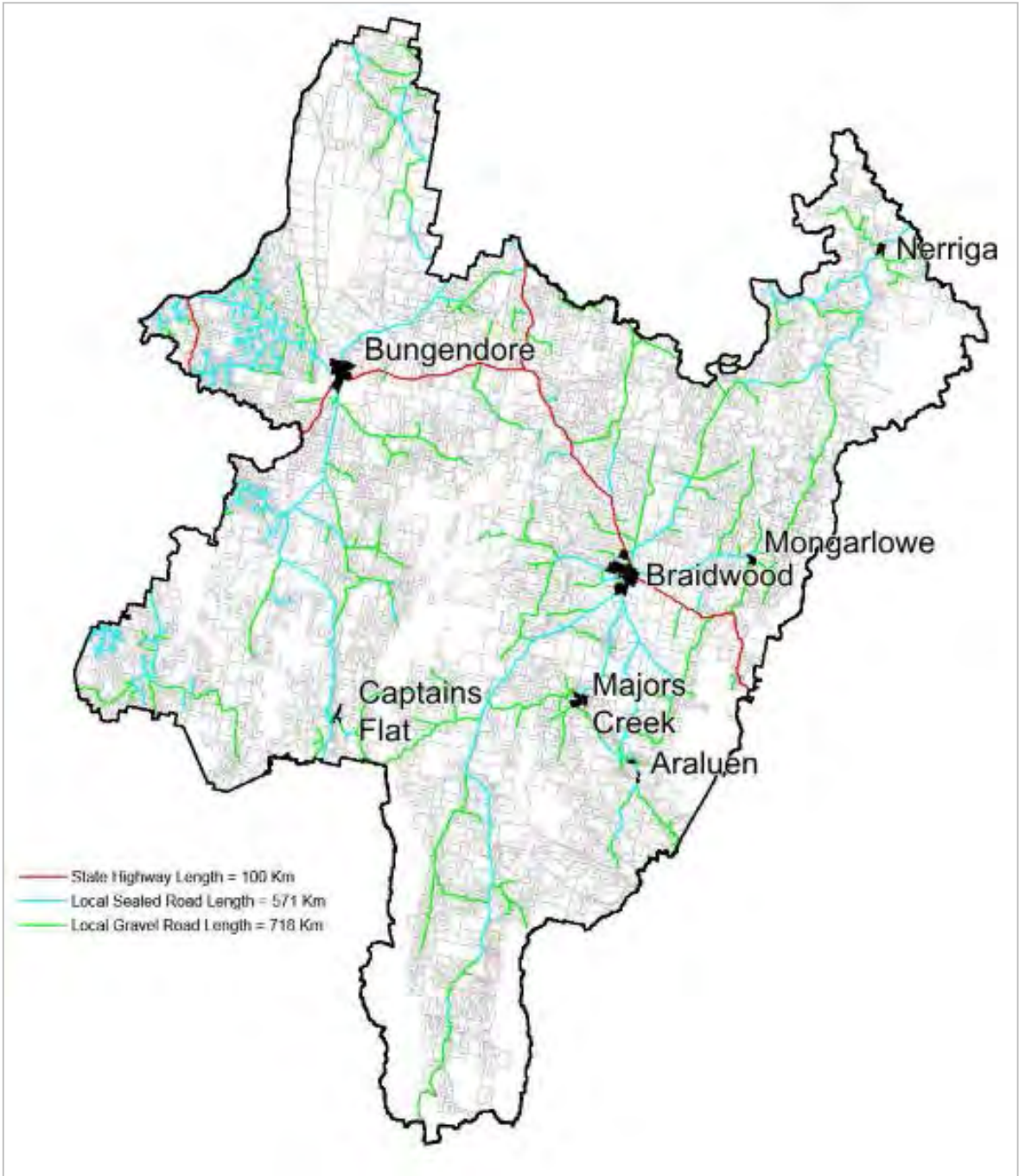
One of the consequences of this informal and largely unplanned residential development has been the large number of direct private accesses onto Macs Reef Road which constrains the speed function of the pavement improvement. A weight limit of 10 tonnes has been imposed on the road to maintain residential amenity.

There are 25 timber bridges in Palerang. Some have heritage values e.g. Majors Creek Bridge. The heritage and “yesteryear” feel of timbered bridges has tourist and some local resident appeal but some are traffic hazards and all are maintenance burdens for Council.

Most formed public roads in Palerang are maintained by Council. There are a few Community Title Estate subdivisions where the residents are responsible for the road.

Council generally requires rural and rural residential subdivision roads to be sealed and the standards are currently contained in the Yarrawlumla Development Control Plan. A new DCP has been adopted but road standards have been retained as per previous requirements.

MAP 6: RURAL ROADS IN PALERANG



2.3.2 Energy

2.3.2.1 Electricity

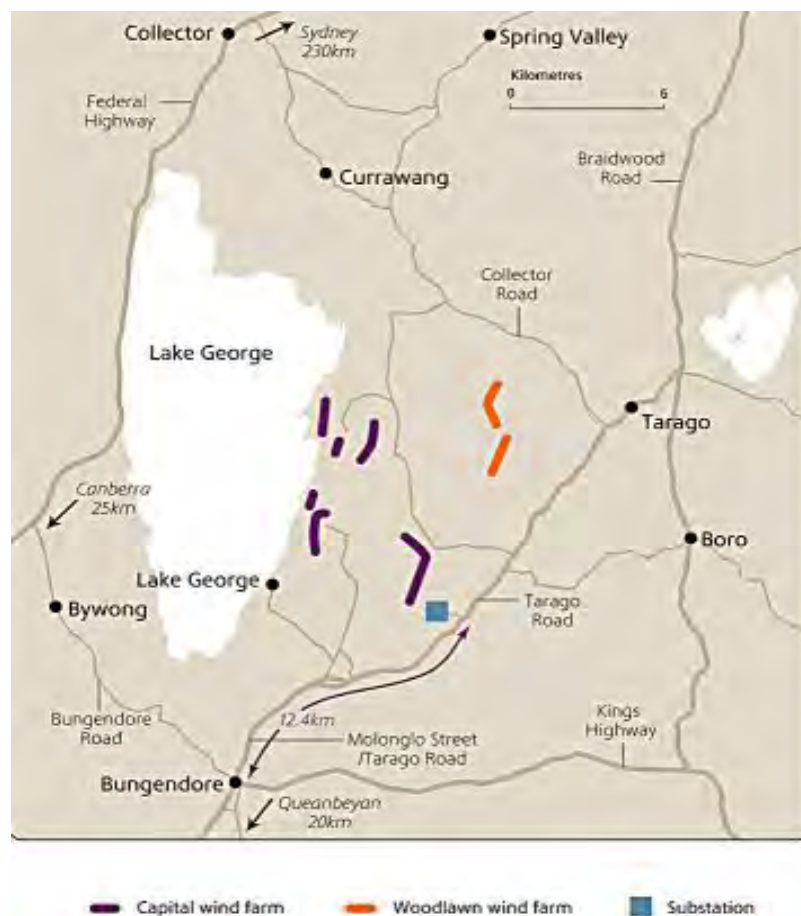
Just like the public road network, there is an extensive network of power lines servicing the rural areas and much of the network has low density and extensive lengths per consumer. While power authorities now charge a higher proportion of the capital cost for mains extensions, low density networks are a burden on electricity consumers generally and usually are not fully maintained by the income from users of such low density networks.

A consequence of relatively small lot sizes is low density rural living with associated lengthy transmission lines to service it.

Home scale solar power supplementary systems seem popular but trends towards total off grid self-sufficiency are yet to emerge.

There are two extensive wind farm systems to the east of Lake George – the Woodlawn and Capital windfarms.

Figure 5: Lake George Wind Farms



Reference: "Images of Wind farm Maps" Bing.com/images.

2.3.2.2 Gas

Bungendore Township is supplied with reticulated natural gas.

Two major gas pipelines traverse sections of the Palerang Area, the Eastern Gas line and Hoskinstown.

2.3.3 Water and Sewer

Sewage disposal

Council's environmental health staff advise that on-site sewage treatment within rural residential and hobby farm developments is not considered an issue across most of the soil types of the area, as long as lots are 1-2 ha in size so as to maintain a range of options for disposal if needed. However, some risk of water contamination has been identified where wells or bores may be located close to septic tanks.

Subject to regular maintenance inspections, most systems are not considered to be adding to water pollution. Council maintains a regular inspection system.

However, see the water quality issues and recommendations in Section 2.1.3.3.

There are several Community Title subdivisions with privately run common effluent disposal systems.

There are wastewater disposal systems for the townships of Bungendore, Braidwood and Captains Flat. All have buffer plans to constrain development from unacceptable encroachment.

Rural water supply

Council has no plans to reticulate water to non-urban residential lands.

There are currently no potable private schemes but several Community Title estates have non potable systems.

With a conservative approach to water use, roof collection from a medium sized 3 bedroom home plus normal rural sheds and on site storage of at least 45,000 litres, will provide potable and flushing needs for an average family and some water for modest garden needs, excluding drought periods.

Council staff advise that buying in of loads of water is common especially in drier periods.

However, most rural residential and hobby farm lots seek additional water reliability through dams or bores.

As detailed in Section 2.1.3, the extensive placement of dams in the E4 zones in particular is having adverse impacts on catchment flows downstream. Increased regulation of dams is curbing this impact but groundwater harvesting seems to be growing extensively and may generate supply problems in future. As part of the

exhibition of this report, people are asked to advise of known water supply problems so we may collate them and improve the understanding of future water supply and demand requirements and impacts.

Protection of town water supplies

Bungendore, Braidwood and Captains Flat all have reticulated, Council operated, water supply systems. Braidwood and Captains Flat are considered to have long term capacity for growth – likely enough for the 20 year horizon of this strategy. Bungendore has spare capacity for about 600 dwellings.

The Strategy will investigate any need for additional formal controls to protect public water supply bore fields and catchments.

2.3.4 NBN and Telecommunications Generally

Parts of Palerang experience poor or no mobile reception, for example Araluen.

A search of the NBN Rollout Map (24/04/2015) showed no service availability/build commencement or build preparation in the Palerang Council. As at this date no plans had been released for any part of the Palerang Area.

But parts of Palerang may be included in a special pilot project aimed to significantly improve broadband speeds to fixed wireless services in some rural and regional communities. As of exhibition of this report it has not been confirmed that part of Palerang may be included in the pilot program.

Wireless mobile broadband is patchy but more accessible in the east – thus increasing the potential for more home business activity.

Some NBN style services should roll out to parts of Palerang well within the 20 year life of this strategy and greatly increase IT home services and the potential for more residents to work from home. But on current projections little service improvement seems likely for the rural areas of Palerang under at least 5 years.

This could have implications for further population growth in rural areas as there is much anecdotal evidence that a proportion of urban based people would live in rural areas if there was work that could be done from home.

2.4 EXISTING RURAL DEVELOPMENT

2.4.1 Current Land Use

Sheep and cattle grazing have been the primary pastoral pursuits for nearly 200 years in West Palerang. Some experiments with agricultural crops were undertaken but late frost and distance from markets meant that the area could not compete with districts which had more reliable climates. (Ploughman).

There has been some success with wine production in the west of the area and crops such as berries, lavender and turf farms are located across a range of small holdings.

The major land uses are shown in Figure 6, (Holloway et al., (2012) p.6). Note the Council work mapped to date covers only the western catchments of Palerang. If resources and time allows Council may extend this mapping to the rest of Palerang before the exhibition phase of this report.

The proximity of heavily forested areas at Tallaganda and Monga has allowed logging and sawmilling to become a significant local industry. From the late 1890s hardwoods have been logged in the Tallaganda State Forest and around Rossi and Captains Flat. (Ploughman). However, scope for further commercial forestry seems limited.

Most of Palerang's commercial agriculture takes place in the central and eastern parts of the area – principally cattle grazing and sheep for wool or fat lambs. Up until about 10 years ago when there was a fall in the price of wool, the principal form of agriculture in these parts was sheep grazing. Interesting to note that many cattle are now being sent to feed lots from where they can achieve better prices than grass fed cattle. Some have been exported to Russia.

Council still operates the Braidwood Sales Yards.

Road access by B-double trucks can be an issue for commercial graziers and can cause damage to lower standard gravel pavements.

It is not uncommon for graziers in the eastern parts of Palerang to own a number of non-adjointing holdings allowing for livestock to be relocated on a seasonal/annual basis. Some of these holdings may be hundreds of kilometres apart.

In the 1980s and 1990s some lands were acquired by the Sydney Water Board/Catchment Authority relating to the potential Welcome Reef Dam. Their total holdings in Palerang now cover some 20,000 ha. These lands are not required in the short term for catchment purposes and some have now been leased back for agriculture under 20 year leases.

Many families occupying lifestyle allotments demonstrate a keen interest in equine sports. Recreational horse riding is very popular with rural residents and is of itself a significant small industry in Palerang with several businesses servicing riding supplies and equine health/feed stuffs.

The past 20 or more years have seen growing interest in private land owner conservation of native habitat and biodiversity. Many owners of smaller rural properties demonstrate conservation measures and bushland reestablishment.

Some more forested sections of the LGA have a proportion of owners not practicing significant agriculture but managing their holdings for biodiversity values and private recreation. Many commercial scale farmers have either retained biodiversity and habitat through long established practices of retaining some forest or native grasslands or of more recent times have established buffers and nature strips.

Wind farms are now a significant land use around Lake George.

Land prices per ha across Palerang have shown rises over time above agricultural LGAs with less population pressures. This has of itself facilitated a degree of speculative investment which seems to be continuing.

Discussions with South East Local Land Services (LLS) personnel have identified the following factors and issues relating to commercial agriculture in Palerang:

- The lower quality agricultural lands still represent a good resource to produce fine wools if the holding is large enough, but market has been depressed many years and many producers have diversified into fat lambs and cattle.
- Generally there are trends to fat lambs and a range of cattle markets including backgrounding weaner cattle for feedlots.
- Land carrying capacities vary across the area.

Table 5: Local Land Service carrying capacity data for sheep and cattle

Locality	DSE / ha	Ha per Breeding Cow
Western/Cooma Edge	3.3	3 to 3.6
North of Bungendore	4.1	2.4 to 2.9
NW Braidwood	6.6	1.5 to 1.8
Top Shoalhaven, Nerriga and Central South	6	1.7 to 2
East	5	2 to 2.4

Notes:

1. DSE = Dry Sheep Equivalent- agricultural production of land can be estimated in terms of the number of adult sheep not feeding lambs that might be carried, it was suggested a breeding cow turning off property a calf per year = 10-15 DSE.
2. It is stressed the above stocking rates are LLS averages for districts and within any district there are a range of properties, management practices and land types and as such individual property carrying capacities may vary considerably. A median capacity might be more useful as an indicator for a district, but was not available.

- Weeds like serrated tussock were very wide spread and affecting productivity. But hobby and part-time farmers were not necessarily worse at control.
- Relatively little cropping except of fodder, but small areas of wheat and canola.
- Araluen orcharding for stone fruit but the growth potential possibly not large given increasing north coast competition. There is some cider apples and brewing around Braidwood.

The following figures on total stocking rates for the old Braidwood Rural Lands Protection Board district were provided and closely match Palerang Area. But given a long running drought until recently, the figures are likely below long term average. The new LLS boundaries now include Cooma and Bombala so more current LLS figures would be hard to extract relevant to Palerang.

Table 6: Local Land Service tallies of total cattle and sheep in Palerang 2003-2007

Year	Total Beef Cattle	Total Sheep
2003	74,978	311,791
2005	60,169	212,495
2007	72,000	223,000

The Department of Primary Industries (Goulburn) provided some historic agricultural data from which the following table has been developed. The Local Government boundaries have changed since that time but comparison of the total of the former Tallaganda and Yarrowlunla Shires gives some comparison. Note that overall areas are slightly different and Palerang contains very small sections of the former Mulwaree, Cooma-Monaro and Gunning Council Areas.

Table 7: Total cattle and sheep former Tallaganda Shire, 1988-1994

	93/94	89/90	87/88
No. farms	155	120	174
Av. area in Ha	Sheep 538 Beef 549	Sheep 655 Beef 722	805
Total sheep	142,000	214,000	189,000
Total cattle	57,000	53,000	45,000
Native pasture (ha)	34,000	N/A	35,000
Improved pasture (ha)	51,000	N/A	54,000

Table 8: Total cattle and sheep former Yarrowlumla Shire, 1988-1994

	93/94	89/90	87/88
No. farms	95	98	146
Av. area in Ha	Sheep 528 Beef 411	Sheep 818 Beef 652	699
Total sheep	232,000	255,000	N/A
Total cattle	21,000	15,500	15,000
Native pasture (ha)	42,000	38,000	N/A
Improved pasture (ha)	43,000	37,000	N/A

Table 9: Combining the totals of Tallaganda and Yarrowlumla

	93/94	89/90	87/88
No. farms	250	218	320
Av. area in Ha	Sheep 543 Beef 480	Sheep 736 Beef 687	752
Total sheep	374,000	469,000	N/A
Total cattle	78,000	68,500	60,000
Native pasture (ha)	76,000	N/A	N/A
Improved pasture (ha)	94,000	N/A	N/A

Source of 3 tables: ABS (Agriculture NSW) ASLC Group and Estimated Value of production tables – for years shown.

The basis of this historic data has variables that make rigorous comparisons difficult but a few observations may be possible:

- Beef and sheep farms range around 550 to 750 ha average but averages are not necessarily a good indicator of commercial viability given the range of land types and quality. If the detailed original data was to be sourced median calculations may be possible and would be a more meaningful indicator of commercial scale size.
- There is possibly some trend towards cattle and less sheep but seasonal variables mean a much longer sample would be needed for accuracy.
- Total stock production from the 1980s to the more recent LLS figures seem to indicate no major decline in agriculture production.
- Interestingly, the older figures point to possibly higher pasture improvement than current LLS advice suggests. Either there has been a decline in use of things like superphosphate or perhaps definitions of pasture improvement have varied. Current observational evidence and discussion with current producers and agents tends to suggest there is a much larger area of mostly

native/perhaps occasionally fertilised pastures than fully improved/exotic pastures.

Further examination of rural direction is presented in the discussion paper *Commercial Agriculture in Palerang LGA* (GBPS and Breckwoldt 2015) and in sections such as 3.2 to 3.6.

2.4.1.1 The makeup of rural land uses and their location

The Palerang LGA covers 524,500 ha. Council estimates the following make up of land use:

Table 10: Major land uses as a Percentage of Palerang area

Land Use Category	Percentage Area
Agriculture	43%
Bushland	24%
Conservation	23%
Timber production	7%
Urban	1%
Waterbodies	3%

(Source: Palerang SOE 2012 Supplementary Report p.2).

The 43% of the area Council estimates as land under agricultural use includes some rural residential use.

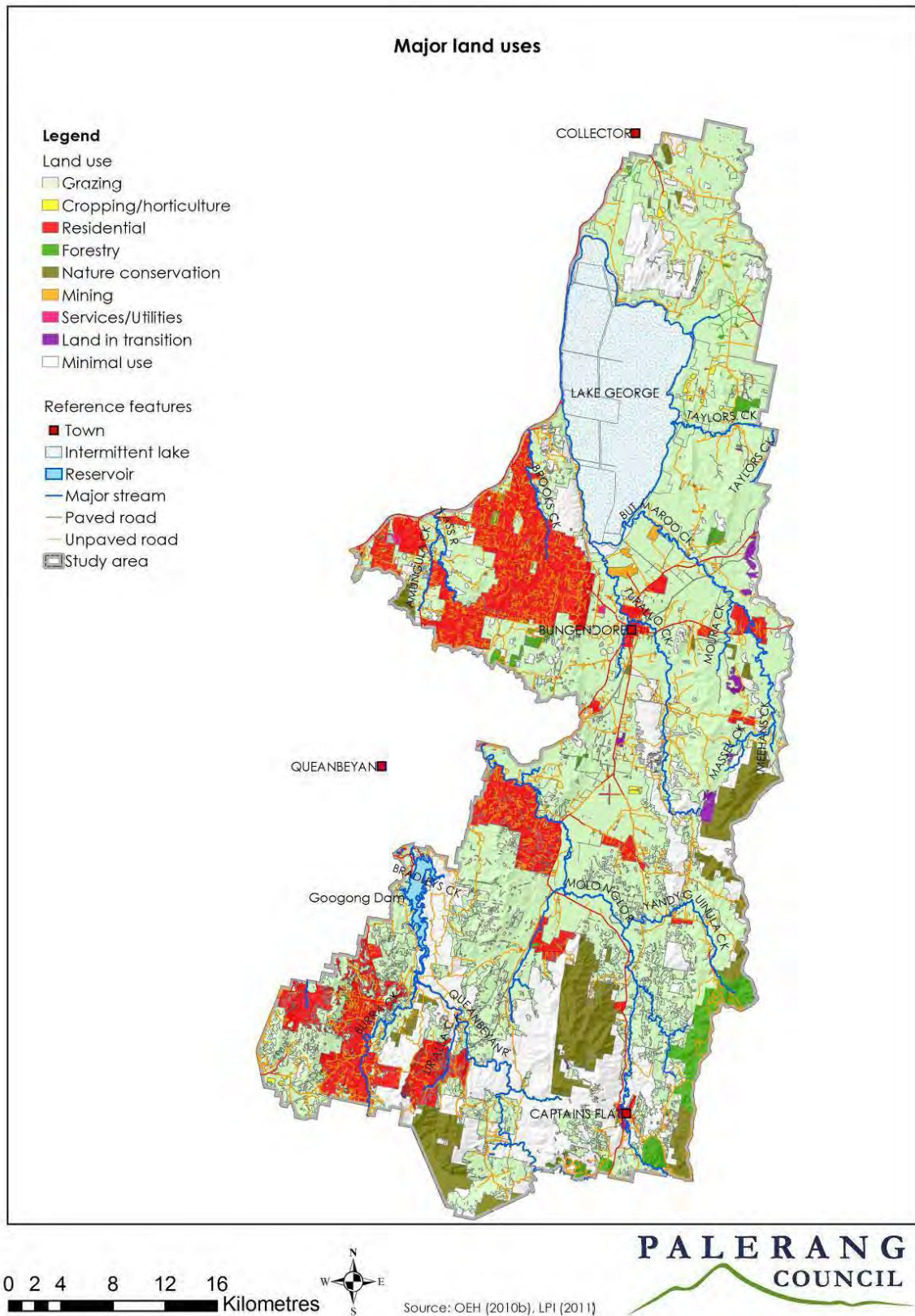
However, almost all the remainder of this area is extensive grazing land dominated by sheep grazing for wool or fat lambs or beef cattle grazing.

Discussions with Farmers Market people has given indication of some small scale rural enterprises such as:

- Alpacas throughout Palerang;
- Wine production – mainly in Western Palerang;
- Cider and other cottage industries – Braidwood district;
- Mixed grazing, poultry, fruit and horticulture in a number of locations in the Braidwood and Bungendore districts. Strong focus on organic production;
- Olives and nuts – Bungendore and Braidwood districts respectively;
- A young truffle industry in the Bungendore district; and
- Local cottage crafts such as chutneys, etc.

SGS Economics and Planning (April 2014) in their report *Industry Investment Attraction Framework Project Final Report – Greater Capital Region Initiative* (p.2) identify agriculture and aquaculture including wine, dairy, livestock, olives and organic farm produce as opportunities for the GCR in the medium to longer term.

Figure 6: A sample of land use in West Palerang



2.4.2 The Influence of History on Rural Land Use

2.4.2.1 Aboriginal history

A short summary of pre and immediate post-European contact history has been prepared for this report by anthropologist Susan Dale Donaldson. This chapter is a précis of her report *Description of cultural landscape – Palerang LGA*. A full version of the report can be found in Appendix 2.

Donaldson states that whilst a diversity of traditional, historical and contemporary cultural attachments across the region have developed in response to the specific historical context, the land, waters and people are connected through kinship, totemism, and the ingrained cultural responsibility of caring for country today as in the past.

An Aboriginal land tenure system has existed across Australia for many thousands of years. Whilst Aboriginal social organisation across what is now the Palerang LGA can be described according to types of groupings including tribal, sub-tribal, clan and linguistic, religious and economic values determine how features of the natural world are utilised, valued and maintained.

Tribal groups recorded as being associated with the area now comprising the Palerang LGA include the Ngunawal in the west, north west; the Walgalu in the central west; the Ngarigo in the south west; the Walbanga in the east; and the Wandandian in the north east.

Movement across the landscape was common for economic, ritual and social reasons; in the case of the tribal groups associated with Palerang LGA connectivity with the Snowy Mountains and South East coast was maintained.

Donaldson refers to the following exogamous and smaller sub tribal or clan groups as being recorded in and around the Palerang region:

- The Paiendra who lived in the forest (also called 'waddyman');
- The Guyangal who occupied the southern area between Mallacoota and the Moruya River;
- The Kurrial who occupied the northern area between the Shoalhaven and the Moruya Rivers, including the Braidwood district.

A number of smaller named sub tribal or clan groups were recorded during the early contact period across what is now the Palerang LGA. These, Donaldson (from various sources) lists as Arralooi, Munkata associated with the Braidwood region, Jineroo near Mt Elrington, Molongla associated with the Molonglo River and Majors Creek, Nammitong associated with the Murrumbidgee Limestone Plains, Mudbury associated with Curraduckbidy, Yarererlumler, Tugerrernong and Currowan. Many of these terms have been adopted as place names today.

In 1840 the NSW Land and Emigration Commissioners concluded that 'moderate reserves' should be set-aside for Aboriginal people to 'enable them to live, not as hunter-gatherers but as cultivators of the soil'. The *Land Act of 1842* enshrined these views and allowed Crown land to be reserved from sale for the use of Aboriginal people. One such reserve was gazetted on the 15/4/1893 on Currowan

Creek in the Parish of Currowan, County of St. Vincents and subsequently revoked on the 9/5/1956.

Other Aboriginal reserves established across the region during this era include one at Mongarlowe in 1879, one at Tomakin in 1884, two at Moruya between 1883 and 1885, a large one at Wallaga Lake in 1891 and one at Batemans Bay in 1902. As a result, many of the people associated with the Paiendra tribe, found themselves in Katungal country surviving 'by the sea coast catching fish'. Over the years all of the reserves were revoked and reverted to other tenure types now under public and private ownership.

Other connections recorded between people and places across the region as described by Donaldson relate to conflict caused by grouping many tribes together and the subsequent diaspora from the Braidwood/Majors Creek area. Braidwood became a 'melting pot of Aboriginal groups from Goulbourn, Bungonia, Jembaicumbene, the Shoalhaven and local people'. Many Braidwood people were driven to the seacoast where they remain.

Donaldson notes that the movement of people from the ranges to the coast occurred over a number of years. Donaldson describes that by 1890 there were only four Aboriginal women and two children remaining in Braidwood and by 1900 there were no Aboriginal people in the Braidwood area although the Bond family returned to Majors Creek in 1881.

2.4.2.2 European settlement influence

Early settlement

Agriculture and mining have played important roles in shaping rural settlement in Palerang.

Ploughman describes the western portion of Palerang as comprising three pastoral districts. Lake George and surrounding country, the Molonglo Valley and the Burra and Urida Valleys.

The Lake George and Molonglo Valleys evolved into prosperous pastoral holdings where agricultural activity concentrated on cattle and sheep grazing. Very little cropping, except for animal feed, took place. A number of powerful pastoral families established substantial holdings in the district by amalgamating smaller properties and buying up their neighbours. The history of these stations and their owners is intertwined through marriages and inheritance.

Ploughman describes the Burra and Urida districts as developing differently to Lake George and the Molonglo Valley.

"The ruggedness of the country and the isolation resulted in only the hardest pioneers settling and endeavouring to carve out an existence."

Early settlement in West Palerang was constrained by a poor transport network. Roads, up until 1860 were just well worn tracks between small settlements and farm houses. (Ploughman 2008). Roads started to improve in the 1870s when official roads were starting to be proclaimed followed by construction and maintenance

programs. As the century progressed roads were constructed to link small centres with larger towns. (Ploughman 2008).

With the advent of rail to areas such as the Riverina, which was ideal for wheat growing, struggling with uncertain crops around Bungendore and the Molonglo Plain proved to be unviable and efforts for commercial cropping ceased completely. (Ploughman).

Recent history has also had a dramatic effect on the pattern of land use in Western Palerang, The establishment and growth of Canberra, with the subsequent demand for rural lifestyle lots, has shifted the pattern of land-use in this section of Palerang from broad-scale agriculture to rural residential estates.

“Land use in the western catchments of Palerang LGA after European settlement has been dominated by agricultural productivity, with some areas retaining native vegetation largely because of terrain. In the 20th century limited areas were designated part of the National Estate or were utilised for timber production by State Forest. Significantly, in the last few decades, a number of subregions have been converted to rural residential developments (for example, Wamboin, parts of the Molonglo Valley, and Burra Creek) and the township of Bungendore has become increasingly urbanized. The spatial distribution of these developments has created ‘hotspots’ for water resources management...because of the higher demands for both surface and ground waters, and the diversion of water along different pathways compared with a less modified environment.” S Beavis (2012 p.4).

Braidwood and the surrounding district, was settled by Europeans in the late 1820s as an agricultural and grazing community.

Affluent landholders employed many convicts in the 1830s and 40s, and the town grew quietly until 1851 when gold was discovered.

The area produced cattle and wheat (from 1840, until ‘rust’ wiped it out in the 1890s), horses, dairy products and vegetables during the gold rush years, and later oats, potatoes, corn, and turnips.

When European settlers arrived Araluen was a wide alluvial valley. It had many billabongs covered with water lilies. No billabongs exist in the Araluen valley today. The natural shape and look of Araluen Creek and its valley were completely destroyed by uncontrolled and very destructive gold mining. This took place during the ‘gold rush’ in the second half of the 1800s. (Wikipedia).

Discovery of gold in the Braidwood, Araluen, Majors Creek, Mongarlowe and Captains Flat areas in the 1850s brought large numbers of miners to the area and by the time of the 1861 census, there were over 8,000 people in Braidwood and nearby goldfields. (From The Peoples Voice - Australian Community History Online. (http://peoplesvoice.gov.au/stories/nsw/braidwood/braidwood_c.htm)).

The goldfields around Braidwood were worked from 1851 until 1939. The easiest gold to mine, alluvial gold found in waterways and close to the surface, was mined out by about 1870. The population in and around the goldmining areas diminished again rapidly once the gold was depleted.

As gold yields declined, the villages virtually disappeared and rural industry again became predominant.

From the late 1850s in West Palerang, sporadic mining attempts were made in numerous locations. Gold was the principal metal sought although significant deposits of copper as well as lead, zinc and silver were found. For a short time production and deposits at Captains Flat was compared with that at Broken Hill.

By the end of the 1930s the Captains Flat mine was second-only to Broken Hill as its mines produced vast quantities of gold, silver, lead, zinc (it was the most important of all the minerals being mined), copper and iron pyrites.

Influence of Canberra

“Canberra has become the regional services centre for much of the surrounding rural regional area of NSW. NSW residents travel to Canberra for work, recreation and shopping, health care and tertiary education and purchasing of professional services for example. ACT residents typically travel into the surrounding region for recreational or transit purposes, though many work in nearby Queanbeyan as well. Consequently, the flow of ACT services to NSW residents far exceeds the flow of NSW services to ACT residents. To an extent the ACT is compensated for this demand on its service sector via the Grants Commission and other intergovernmental agreements.” (Greater Capital Region Strategy Stage 1: Economic Opportunities Scanning Project 2012).

The influence of Canberra/Queanbeyan is considered strong certainly to as far as east of Bungendore. The numbers of daily commuters fall significantly between Bungendore and Braidwood (personal communication with Palerang staff).

The point being made is that improving roads will not expand the commuter line much as most of the time commuters can now travel at current speed limits. The reduced impact of Canberra/Queanbeyan on the eastern parts of Palerang is evidenced by the slower rate of sales of rural residential subdivisions in the east versus the west.

The demand from people employed in Canberra for rural lifestyle lots has been felt for more than 50 years. For example, around Burra 40 acre (16 ha) farms were available from the 1970s. (Ploughman).

Because of its proximity, Canberra continues to have a significant influence on settlement patterns in Palerang. The rural towns and villages and the rural residential areas of Palerang offer a variety of lifestyle choices for the regional community while Canberra offers the bulk of the region's employment opportunities. In 2011, 58.7% of employed people in the Palerang worked in the ACT. Strategic Economic Solutions (2014 p.2).

“The Region has the benefits of being a good location for food and wine, renewable energy (such as wind power) and cultural attractions, including Canberra's position as the national capital, and a range of landscapes suitable for different lifestyles and recreational activities.” Strategic Economic Solutions (2014 p.4).

The influence of Canberra on Palerang rural areas is most prominent in the western areas of the LGA – around Wamboin, Bywong and Bungendore. In terms of employment Wamboin, Bywong and Bungendore are very much dormitory localities

for the ACT, with 74.1%, 75.5% and 60% respectively of their employed residents working in the ACT. Strategic Economic Solutions (2014 pp.23, 24). Wamboin and Bywong areas experience relatively high income, driven by the high proportions of residents working in the public sector and in professional services in the ACT.

The Canberra-Sydney Corridor Regional Strategy 2006 acknowledges that demand for rural residential lifestyle land is likely to remain high in these areas because of their proximity to Canberra.

The Sydney-Canberra Corridor Regional Strategy 2006 states: *“Outside the existing urban areas, the desire for a rural lifestyle has been a significant driver of the demand for housing. In the southern part of the (Sydney-Canberra Corridor) Region, rural residential development is clustered around Murrumbateman, Yass and the Wamboin and Bywong areas in Palerang.*

The extent of dispersed rural residential development has significant implications for costs of servicing, the fragmentation of lands and impacts on agriculture. A significant challenge for councils within the commuting areas of Sydney and Canberra will be the management of the demand for a rural lifestyle in a manner that safeguards agricultural land.” The Sydney-Canberra Corridor Regional Strategy (2006 p.38).

In recent years, areas close or adjacent to the ACT have experienced rates of growth higher than those in the ACT. The 2007 Canberra Spatial Plan suggests that this growth is considered to be partly due to economic factors, the outflow from the Sydney corridor and a reflection of lifestyle changes. (Source: Canberra Spatial Plan 2007, ACT Planning and Land Authority).

“State Government population projections show that overall the population in Palerang is expected to grow in the future (as shown below, to 2031) by around 5,950 people, from 2011 figures. The growth rates for the 10 years to 2021 are expected to lie between 1.9% and 2.0% per annum. After 2021 growth rates are expected to fall slightly to some 1.3% per annum.” Strategic Economic Solutions (2014 p.6).

Trends of the past few decades

The Discussion Paper Commercial Agriculture in Palerang LGA maps the following trends from recent agricultural history (see section 2 of that Paper for detail):

- While a full archival survey of past agricultural census is beyond the budget of this project, Palerang exhibits regional and national trends of the past 2 decades of stagnant agricultural prices and falling real returns.
- The free data is too variable to have any reliability for conclusions but possibly points to:
 - Some increase in farm numbers given fragmentation and/or more people recording themselves as commercial farmers in census or ABN.
 - Some shift out of sheep given a long period of low wool prices.
 - Possibly not as much growth in cattle numbers as anecdotal comment and national trends suggest? Regionally and nationally there has been

some move out of wool but in some areas it has resulted in a shift to more beef whereas the data in Palerang may show the alternative trend of some farmers moving from wool to sheep meat.

- Quite significant seasonal variations.

2.4.3 What defines commercial agriculture in Palerang?

Palerang is not a standard rural based Council. Its geography has it placed adjoining the Canberra/Queanbeyan urban complex and it straddles the main highway giving that urban complex its access to the coast.

This proximity also allows for a large amount of “rural lifestyle” settlement within the western parts of Palerang where the dominant income for the landowner is off site employment – mostly in Canberra/Queanbeyan.

As such there is a significant proportion of such land owners who might be described as not undertaking commercial agriculture. Various terms are used to categorise these operations and all are disputed or demonstrate exceptions to some extent:

- “Rural residential” means an ownership where minimal land agriculture takes place. It usually equates with a small area of perhaps less than 2 ha but at the other extreme are “rural retreats” that can be very large areas of bushland. Exceptions exist there, for example a 2 ha property could contain a commercially based intensive plant or poultry operation – generating at least a part-time income.
- “Hobby farming” means an ownership where there may be agricultural practices typical to larger holdings (e.g. sheep and cattle grazing) but the scale of which is not likely to generate net income of any size once property operational costs are deducted. In Palerang this might generally refer to properties of 40 ha in reasonable quality farming land but could be much larger in more marginal country. “Hobby farming” also does not automatically mean a total loss of net agricultural production from when the area was operated at larger “commercial” scale. Evidence between the two suggests the per hectare yield of, say cattle, is similar.

Intensive commercial agriculture/horticulture can occupy small holdings but is not very common in Palerang where sheep and cattle rearing dominate. So to be classified as at least a part-time commercial agricultural operation in Palerang would normally require at least enough land to carry a herd of perhaps 100 breeding cows equivalent. Estimates vary but from discussion with Local Lands Services (LLS) and grazier representatives, such a scale might return between \$20,000 and \$30,000 after operational costs.

Land quality and type vary considerably across Palerang. But assuming an optimistic example where all the land was agricultural classification 3 (i.e. all good quality, non-irrigated grazing). Indications of carrying capacity from the LLS in such country are about 2 ha per breeding cow. So to run 100 breeding cows would need about 200 ha of better Palerang grazing land.

The Palerang Rural, Rural Residential and Environmental Areas Discussion Paper (2008) noted that a minimum of 600 ha was probably required for viable full-time agriculture. If this is meant to mean a reasonable net income and ability to fund some debt for land purchase then 600 ha for a full-time farm without off farm income might be conservative.

Council’s Environmental Services Section have wrestled with this issue and carried out an examination of current holdings, using GIS data to review land types and operational areas. They attempt to split all rural ownerships into 3 categories:

- Commercial agriculture – properties with some potential for at least substantial part-time income;
- Hobby farms – not necessarily uneconomic in a commercial sense but not likely to provide a significant net part-time income; and
- Rural residential living – little evidence of commercial agricultural activity.

From their survey the following table is developed:

Table 11: An attempt to differentiate commercial agriculture, hobby farms and rural residential holdings in Palerang

Type of holding	Number of properties in Palerang	Size range	Mean size	Median size	Total area
Commercial Agriculture	114	300 ha to 7,146 ha	779 ha	514 ha	889 sq km
Hobby Farms	1,381	10 ha to 4,945 ha	51 ha	24 ha	716 sq km
Rural Residential	4,192	2,000 m ² to 4,535 ha	57 ha	8 ha	2,396 sq km

Information assembled from Council property and GIS data.

Comments on the table:

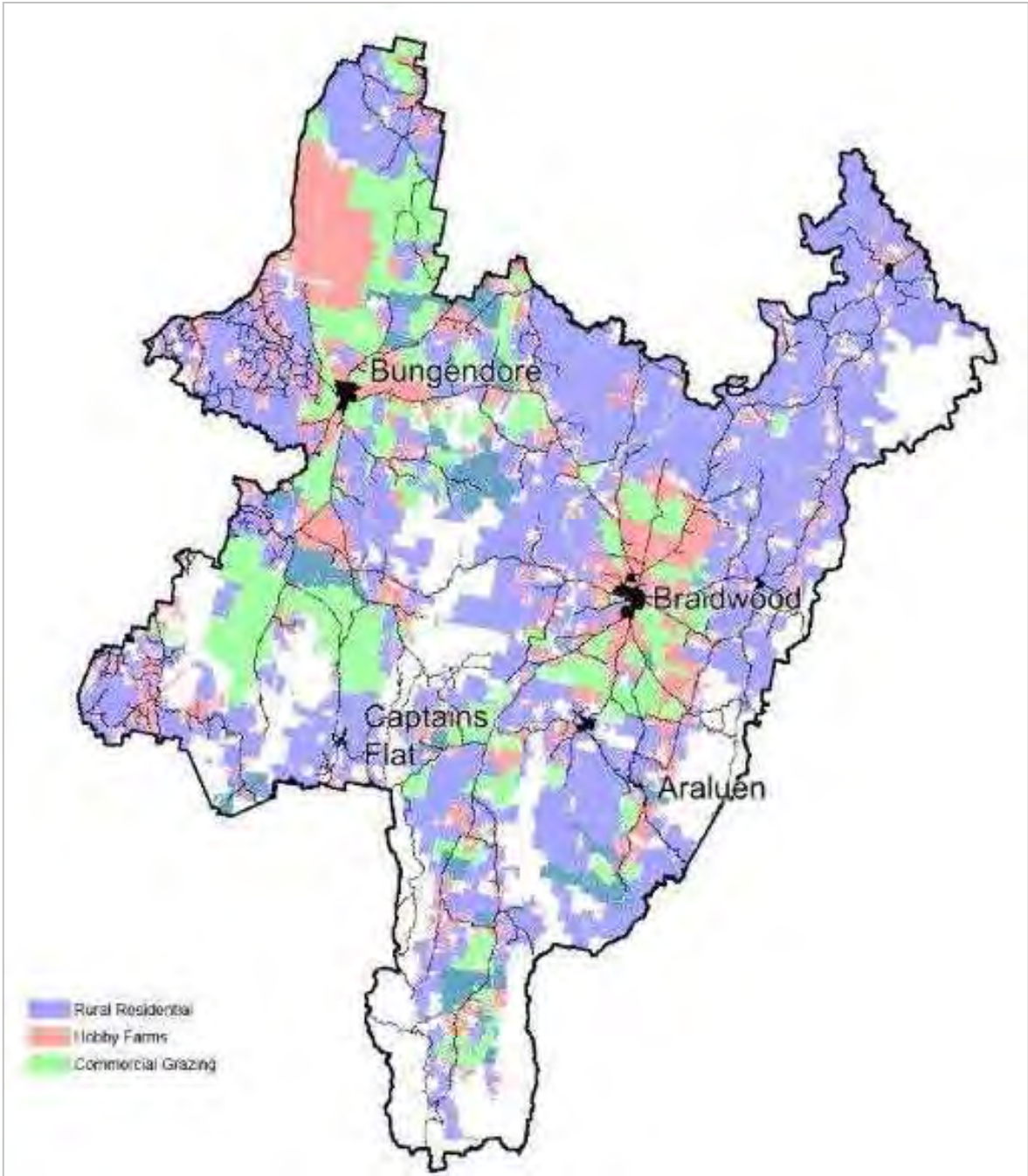
- The data suggests a median area for a commercial farm might be 500 ha.
- Current Local Land Service carrying capacity figures suggest between 400 and 725 ha of land is needed (dependant on the locality/quality) to run 250 breeding cows.
- Historic farm size data from Department of Primary Industry suggests 500-700 ha.
- But likely many properties in the hobby category, many larger part time farms return some net income to owners. But on average, land of area perhaps 40 ha or less would be difficult to class as more than true hobby scale income.
- The rural residential mean figure of 57 ha is obviously distorted by the fact there are some very large holdings in this category that are bush retreats, but the median 8 ha is possibly a reasonably border between hobby farming and a use where the priority is rural retreat living with minimal agriculture.

There is no quantitative figure that categorises a certain property size as being commercial, hobby farming or rural residential. And the distinction between hobby agricultural use and no discernible agricultural use requires almost an individual property survey and could vary with changes in ownership.

However, it seems clear that ownerships under perhaps 40 ha would struggle in average seasons to net an agricultural income over a few thousand dollars and to average perhaps \$10,000 or more might mean 200 ha of reasonable quality land.

Also, people seeking to buy land for hobby agriculture may often be deterred at purchasing larger holdings of productive land given the cost and challenges of managing it. Probably most purchases over 40 ha of class 3 or 4 agricultural land are by people proposing at least modest part-time commercial agricultural activity.

MAP 7: DIVISION OF RURAL OWNERSHIPS INTO RURAL RESIDENTIAL, HOBBY FARMS AND COMMERCIAL FARMS
(Developed by Council's Environmental Services Section)



2.4.4 New and Niche Agricultural Business

2.4.4.1 Small and emerging agricultural businesses

There are a number of mixed produce operations in the Palerang Area that appear to be functioning at above hobby scale. They produce a range of products such as beef, chicken, ducks, sheep, eggs, and vegetables. Production methods tend to focus on organic, biodynamic or permaculture principles.

The success of these producers could be said to be in part aligned to their proximity to Canberra as their produce is often sold at farmers markets in Canberra at the Capital Region Farmers Market, the North side Farmers Market and the South side Farmers Market as well as at the Braidwood Farmers Market. The Bungendore Farmers Market when it opens (scheduled for early 2015) will offer an additional and valuable outlet for locally grown produce.

Greenhill Farm at Bungendore and Caroola Farm at Muloon are two producers that fit into the above category. Hazelwood farm in the Braidwood district produces a variety of vegetables for sale at farmers markets.

In addition to Wisbeys Orchards in Araluen, there is also some smaller scale stone fruit and vegetable production which is sold at the Capital Region Farmers Market. Produce has included peaches, nectarines, oranges, lemons, mandarins, limes, grapefruit, assorted vegetables and herbs.

Other small production include olives, truffles, honey, herbs and goats. There is a wholesale plant nursery in Wamboin.

As an example of support for local produce, a dinner was held at Le Tres Bon restaurant Bungendore in October 2014 showcasing local produce. Bungendore region produce (mostly organic) included: Bungendore olives, Wamboin truffles, chicken and eggs from Caroola Farm Muloon, saffron from Bungendore and organic vegetables from Wamboin.

Wine production is well established in the Western Rural section of Palerang as is Sully's Cider at the Old Cheese Factory Reidsdale in the Braidwood district. These are good examples of successful producers and potential winners in the rural tourism market.

The knowledge based industry appears also to be gaining a small amount of traction in the emerging agriculture space. For example, the Muloon Institute which is an independent and 'not-for-profit' registered environment organisation with Deductible Gift Recipient (DGR) and Charity status. Its aim is to make 'Holistic Landscape Management' a mainstream practice for sustainable and profitable agricultural businesses. Current enterprises are organically grown pasture, raised and finished beef and sheep, free range pasture raised pork and poultry.

But in terms of sheer scale of commercial return, the conventional sheep and beef grazing enterprises still net almost all the agricultural income of Palerang and while these two main enterprises are evolving and diversifying to match market trends to organic, pasture fed, etc., these two enterprises will likely remain the source of the bulk of Palerang rural business income for the 20 year projections of this Study.

Alpacas

Southern NSW Region of the Australian Alpaca Association Ltd lists 8 alpaca growers in the Braidwood district, 13 in the Bungendore district and 2 in the Tarago district. Most are small scale breeders and producing wool for textiles and in some instances farm gate sales.

Interview with Rural Land Services in Braidwood suggests that some alpaca growers are experiencing difficulties selling their annual wool production due to demand/supply issues. Some boutique meat market may exist for alpacas.

(See: <http://www.abc.net.au/news/2013-04-05/alpaca-meat-demand/4611936>).

2.4.4.2 Farmers Markets

The Southern Harvest Group run a farmers market at Bungendore every second and fourth Saturday. Local farmers and producers are encouraged to participate. The Southern Harvest Group has the following objectives for the market:

- Develop a viable and self-sufficient Farmers Markets in Bungendore as an outcome of the FuturePLANS Local Food Initiative Research carried out in 2013/2014 as an extension of the 2011 South East Food Plan;
- Provide a simple resource to community groups and individuals seeking access to authentic, local and sustainably produced food;
- Provide an alternative 'way to market' for local food producers; and
- Encourage a resilient local food economy.

Braidwood farmers market is held each first and third Saturday on a similar format to Bungendore.

Anecdotal evidence suggests (from our meeting with Council staff and discussion with Caroola Farm) that availability of land for emerging agricultural industries is not a constraint to new projects. However, a constraint put forward was that of land use zoning clarity. Producers would like simpler procedures about whether an activity (e.g. small scale horticulture or farm gate sales) is permissible in certain zones without first having to formally submit a DA. Also there is a view Council could develop more guidelines for encouraging small rural business.

Access to markets, distributors and abattoirs have also been noted as barriers.

Discussions with stakeholders suggests that the emerging, rural based, industries which are likely to grow include:

- The local/regional food segment;
- Producers that also have a tourism/hospitality mix in their business;
- Knowledge based industries; and
- Renewable energy.

2.4.4.3 Regional Development Australia (RDA) Southern Inland and Southern Harvest Association

Palerang Area is included in the RDA Southern Inland geographic area.

RDA Southern Inland is part of a national network of 55 Regional Development Australia committees across Australia. These committees are made up of local leaders who work with all levels of government, business and community groups to support the development of regional Australia.

RDA Southern Inland current regional plan priorities are:

- Regional Development Planning;
- Education, Employment and Investment;
- Transport – Infrastructure and Services;
- Regional Food;
- Digital Economy Transition; and
- Living a Working Sustainably.

In terms of Palerang Area horticulture and emerging agricultural producers, RDA Southern Inland have stated they will focus on the development of regional food producers, processors and distributors.

RDA Southern Inland consider opportunities exist to expand on the scale and diversity of local food production in and adjacent to existing major production locations such as the Hilltops region (Young, Boorowa and Harden), the Southern Highlands, Southern Tablelands around Bungendore, Braidwood and Araluen, and the Snowy Valley.

“A focus of RDA work will be to encourage productive land is preserved for food production and not swept up in residential or commercial development.”

“RDA Southern Inland will work with the regional food sector, Local, NSW (Local Land Services) and Commonwealth Government agencies as relevant to attract support for the development of a thriving agricultural/regional food industry that will provide new employment opportunities, underpin the regional economies and significantly contribute to the sustainability of the region. The success to date of the RDASI initiated Southern NSW Harvest shows there are commercial benefits for people producing, value adding/processing and selling the diverse range of produce in the region. The RDA’s work will focus on opening up people’s capacity through programs to develop their business models and business management capacity; support their operations through promoting the need for small scale infrastructure such as small animal abattoirs/processing facilities and open the way for them to access customers through the establishment of more physical markets (farmers markets, main street provedores) and on-line markets such as the Southern NSW Harvest Digital Trading Platform.”

(Source RDA Southern Web Site <http://www.rdasi.org.au/projects/regional-food/>).

There are opportunities for Local Government to seek funding from the National Stronger Regions Fund. \$200m per year for 5 years has been allocated to this fund.

[\(http://investment.infrastructure.gov.au/funding/NSRF/\)](http://investment.infrastructure.gov.au/funding/NSRF/)

RDA Southern Inland is leading the development of the Australian Capital Region Food Hub. This is an undertaking of a groups of like-minded community organisations, businesses and individuals that have come together with the aim to build more resilient local food economies within the Canberra region. On 11 June 2014, RDA Southern Inland hosted the first Australian Capital Region Food Hub Information Session.

The Southern Harvest Association is a recently established initiative of RDA Southern Inland. Southern Harvest was established in 2011 with the aim of supporting and promoting regional producers and lovers of regional food. The Association represents the Australian Capital Region, plus Wingecarribee, Temora and Junee Shires. Members include growers, distributors, wineries, cafes and B&Bs plus producer and tourism associations. Southern Harvest was formally launched by the Honourable Katrina Hodgkinson in September 2013 and hosted the first Australian Capital Region Food Hub event in Canberra in May 2014.

The objectives of the Association are:

- To improve the economic and environmental sustainability of primary industries;
- To promote the region as a rural tourism destination;
- To develop a strong regional brand that provides opportunities for business diversity and adds value to regional products and services; and
- To provide partnership opportunities for business, government and communities within the region.

Source: Southern NSW Harvest Association Constitution.

RDA and Southern Harvest Association supports the Braidwood Farmers Market and the markets at Bungendore which commenced in January 2015.

The Regional Produce Provenance scheme has commenced. The objective of the scheme is to develop a regional branding for agricultural product. Southern Harvest logo is placed on a product to validate its origin. RDA Southern Inland is hopeful that this scheme will be widely used and consolidate regional branding.

RDA Southern Inland has stated that it is keen for the region to adopt practices that reduce impact on the environment and promote sustainability – both in the community and the workplace.

The south east of NSW, RDA Southern Inland note, has an extensive supply of renewable energy resources. RDA Southern Inland has worked closely with RDA ACT and RDA Far South Coast to establish the South East Region of Renewable Energy Excellence (SERREE) project.

The SERREE Industry Cluster will work to:

- Facilitate collaboration and knowledge sharing amongst stakeholders by:
 - hosting regular industry forums, conferences and other events;
 - providing information through the SERREE Industry Cluster Web Portal;
 - developing projects such as the Renewable Energy Education Trail;
- Increase local business capacity and content in renewable energy infrastructure projects within the region;
- Facilitate the optimisation of benefit from renewable energy business, investment and market development opportunities identified across the region;
- Identify challenges and barriers to increased uptake of renewable energy across the region and develop strategies to overcome these; and
- Identify training and skills that are needed in the renewable energy sector within the south east NSW/ACT region, and ensure that courses to be delivered are appropriate to meet the current and future needs of the local industry.

2.4.5 Managing land for biodiversity

There are many rural properties where there is active participation by the land owner in conservation of native flora and fauna. This can range from retaining and limiting grazing of small areas to conserving large tracts of bushland.

There are currently 19 Voluntary Conservation Agreements that landowners have entered into with the National Parks and Wildlife Service and these cover approximately 1400 ha of private lands, but the area of private land being actively managed for biodiversity would be much greater with many owners not formally registering their programs.

It would be useful to build monitoring programs of changes in vegetation. Historic air photo interpretation might be a good start to compare vegetation from, say 40 plus years ago with the same areas today.

2.4.6 Rural Land Use Conflicts

Land use conflicts can develop in rural areas between commercial agricultural operations and other uses of the rural area such as rural living and biodiversity protection. For example, spray drift may cross land ownerships and affect a rural neighbour.

Land use conflicts can have adverse impacts such as loss of amenity for rural residential residents and loss of operational flexibility for farmers. There is a role and some techniques for land use planning to help lessen land use conflicts, for example:

- Zoning and formal buffers may separate conflicting uses.
- DCP guidelines for new development such as dwellings, can ensure consideration before a dwelling is placed in the landscape, that there is both consideration for reasonable commercial agricultural activity by neighbours and techniques such as setbacks and screening for amenity enhancement.

However, there also needs to be an appreciation of the limits of land use planning and similar regulation. General approaches that give reasonable consideration of neighbours amenity and right to earn a living go beyond regulation.

Interviews and discussions to date have not raised many land use conflicts of magnitude.

The following may be of some significance:

- Spray drift conflicts – especially where horticultural or broad acre cropping areas adjoin rural living or organic producers;
- Some access conflicts due to rights of way, use of paper roads and standards of same; and
- Clearing for bushfire protection versus regeneration plans of landholders and perceived habitat conflicts.
- Water conflicts:
 - quality impacts from neighbour activities – land use, septic tanks;
 - collection rights for dams;
 - bore usage and water tables.
- Windfarm locations.
- Management of noxious weeds.

2.4.7 Agricultural Land Capability

The Department of Primary Industries has produced agricultural land capability mapping for most Local Government areas of NSW including Palerang. The program dates back to the 1980s but still has relevance as a comprehensive attempt to marry physical land capability characteristics with economic suitability of agriculture.

Their system divides most private agricultural land into 5 categories:

Class 1: Arable land suitable for intense cultivation – there is none of this category mapped in Palerang.

Class 2: Arable land suitable for regular but not continuous cultivation. There are 725 ha mapped in this class in Palerang.

Class 3: Grazing land well suited to pasture improvement and occasional cropping. There are 101,000 ha mapped in this class in Palerang.

Class 4: land suitable for grazing but not cultivation. There are 137,000 ha mapped in this class in Palerang.

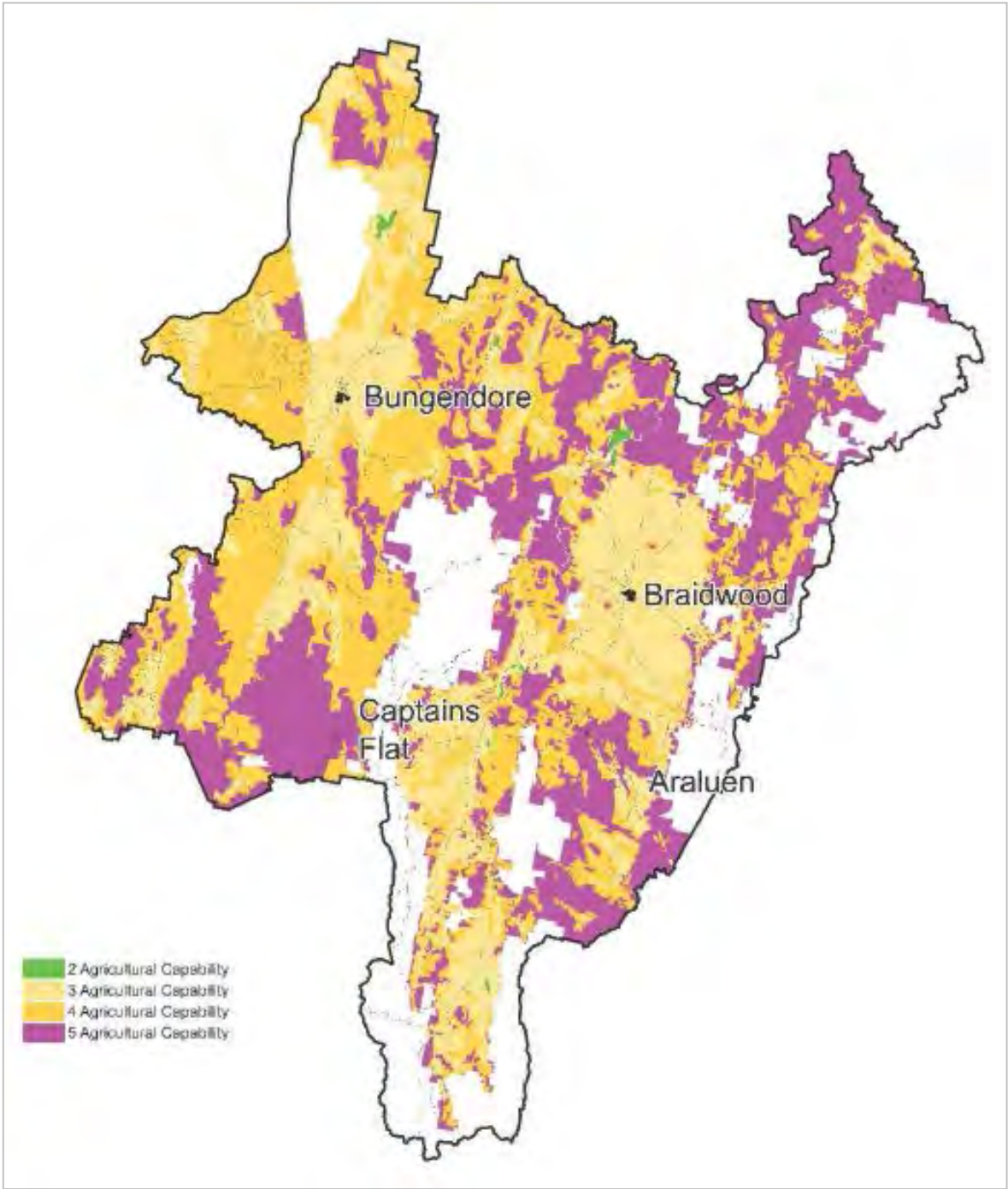
Class 5: land unsuitable for agriculture or at best light grazing. There are 134,000 ha of this class in Palerang.

Map 8 below depicts these classes.

For detail on the DPI system see their AGFACT:

http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0004/189697/ag-land-classification.pdf .

**MAP 8: AGRICULTURAL CAPABILITY CLASSES
(NSW DPI)**



The following table presents a breakup of the agricultural capability classifications between those rural properties in the RU1 zone under 100 ha and those over 100 ha.

Table 12: Division of agricultural capacity between properties under and over 100 ha.

Ag Class	Area in Ha under 100 ha	% of Class under 100 ha	Area in Ha 100 ha & over	% of Class 100ha & over	Total Area in RU1
2	52.75	5	972.25	95	1,025.00
3	18,930.65	18	83,569.35	82	102,500.00
4	30,688.29	24	96,211.71	76	126,900.00
5	23,085.80	21	89,414.2	79	112,500.00
Total 2 - 5 Ag. Class	72,757.49		270,167.51		342,925.00

A conclusion from this table is that most of the more productive agricultural lands classes 2-4) remain in holdings above 100 ha (approximately 78%). In other words, in holdings where there are greater prospects of commercial level agriculture.

Also that, of the total area of the smaller ownerships under 100 ha, 31% of their area is the poorest class 5 land and just under 75% of their total areas comprises land of class 4 or 5.

To date Palerang has managed to retain most of the more productive agricultural lands in larger holdings of some commercial scope.

2.4.8 A sample of rural opinion

The accompanying discussion paper, *Commercial Agriculture in Palerang LGA* (GBPS and Breckwoldt 2015), includes the results of a small survey of rural producers, stock agents and some emerging industry operators.

While it is not a statistically significant sample and is biased towards commercial agriculture, it does draw some ideas of the range of opinions and views from this sector of the rural population of Palerang. The survey details are in Section 5 of the Discussion Paper but a summary of findings follows:

- While respondents raised 16 land use issues, the most common and priority issues were weeds, road standards, vegetation regulations, land degradation, water access and declining terms of trade.
- There was a wide diversity of opinion on the pros and cons of rural subdivision. But some desire for more flexibility and not necessarily major negativity against small holding owners.

- There is a sense from eastern rural residents that Council has a western focus given the population majority resides there.
- Some saw merit in there being a panel of commercial farmers to provide input to Council on rural issues.
- There was a general feeling there is too much escape expenditure from Palerang to Canberra and Queanbeyan and that strategies to get more local support where needed.

2.4.9 Some influences on the future of commercial agriculture in Palerang

The discussion paper *Commercial Agriculture in Palerang LGA* (GBPS and Breckwoldt, Page 21) drew the following conclusions on the major influences affecting commercial agriculture in Palerang:

There are a number of factors that will influence the future of commercial agriculture in Palerang. These are:

1. The high cost of land and the number of small holdings means that Palerang is unlikely to be regarded as an important location for corporate agricultural investment.
2. The absence of a major regulated water source means that irrigation is likely to remain a small component of agriculture and based on opportunistic small crop opportunities from unregulated water sources.
3. The distance from major grain growing areas is likely to inhibit development of major intensive livestock enterprises.
4. Agriculture in Palerang will continue to be weather dependent and this favours grazing and tree-cropping over intensive industries. Notwithstanding, the results of the Economic Profile showing that there is an average gross return of \$70,833 across 432 farms indicates a very high level of resilience to fluctuations in weather. What proportion of that \$70,833 comprises off-farm income is immaterial when measuring resilience.
5. The survey of land managers and agents shows a wide range of enterprises and their acceptance by the commercial agricultural sector. This is likely to be the main strength of agriculture in Palerang and associated with its proximity to the urban areas of Sydney, Wollongong, Canberra and Queanbeyan.

2.5 PALERANG RURAL ECONOMY

2.5.1 Employment

The following has been summarised mostly from the Palerang Economic profile.

The unemployment rate in Palerang is comparatively low compared to the Capital Region (specifically the Southern Inland RDFA region). For example, in September 2013 Palerang experienced the third lowest rate of unemployment in the region at 1.96% after Queanbeyan (1.77%) and Yass Valley (1.85%). (SGS Economics and Planning (April 2014) *Industry Investment Attraction Framework Project Final Report – Greater Capital Region Initiative*).

The broader Greater Capital Region is one of the fastest growing regions in Australia, primarily as a 'lifestyle dormitory region' leveraging off Canberra's growth.

The report states that the economic future of Palerang can be significantly influenced by Federal Government policy and changing conditions within the broader Greater Capital Region. For example, this year's budget measures cutting jobs in the Federal public sector may negatively impact on the retail and construction industries, both within and outside the ACT, due to the high numbers of commuters living in NSW and working in the ACT.

In the Southern Inland RDA area, in which Palerang is located, the following industries were growing and demonstrated high employment relative to other parts of Australia:

- Accommodation and food;
- Arts and recreation;
- Electricity, gas, water and waste;
- Education and training; and
- Health care and social assistance.

The Greater Capital Region Strategy: Stage 1 Economic Scanning Project (2012) identified the following economic opportunities for the broader Capital Region:

- Infrastructure – including harnessing the potential of existing infrastructure such as the Canberra International Airport, and leveraging the potential of proposed infrastructure such as high speed rail and the Port of Eden;
- Sustainability – including the region's resource base in terms of renewable energy and possibilities of developing waste markets, and enhancing the agriculture and value adding sectors;
- Defence – involving cross-border collaboration to increase defence and associated industry in the region;
- Tourism;
- Business innovation; and

- Regional marketing and branding.

However, the report notes:

“...the scan and the consultations failed to reveal any economic development “silver bullets” such as a burgeoning new resources industry for the region. Most of the opportunities identified will only result in a small number of jobs.” (p.5).

The *Industry Investment Attraction Framework Project Final Report – Greater Capital Region Initiative (2014)* identifies a number of industry sectors that are likely to present significant additional opportunities for the GCR in the medium to longer term. These include:

- Agriculture and aquaculture including wine, dairy, livestock, olives and organic farm produce;
- Online education; and
- Clean energy and climate change adaptation applications and technologies.

Strategic Economic Solutions contend that the aging population in the Greater Capital region, consistent with national trends, provides a challenge for continuing growth in the economy (in part due to difficulty of finding adequate numbers of employees locally), but increases demand in the health and social services sector (SGS 2014).

Shortages of skilled workers in the Greater Capital Region has also been identified in the report: *Greater Capital Region Strategy Part 2: Skills and Training Gaps Strategy - Report to RDA Canberra*; ACIL Allen Consulting (2013).

Within the broader Capital Region the principal skills shortages were identified in the following areas:

- Healthcare professionals;
- Community and care workers;
- Education and training professionals;
- Green skills;
- Trade skills;
- ICT skills; and
- Business and administration skills.

The majority of those living in Palerang and working in the ACT were employed in public administration and safety (36%). The only other industry with more than 10% was professional, scientific and technical services (10.8% 421) (p.13 Profile).

Strategic Economic Solutions project that as the population grows, the percentage of residents of working age (15 to 64 years old) will decline from 68.5%, to around 61.8% by 2031. The number of people of working age in the Palerang LGA is

projected to grow by around 2,700 in the 20 years from 2011 to 2031. In the same period, the population over 65 years is expected to rise by 2,200.

As stated earlier, local employers may find it increasingly difficult to attract workers from within Palerang as the available workforce will grow more slowly than the population overall, and more slowly than many successful businesses.

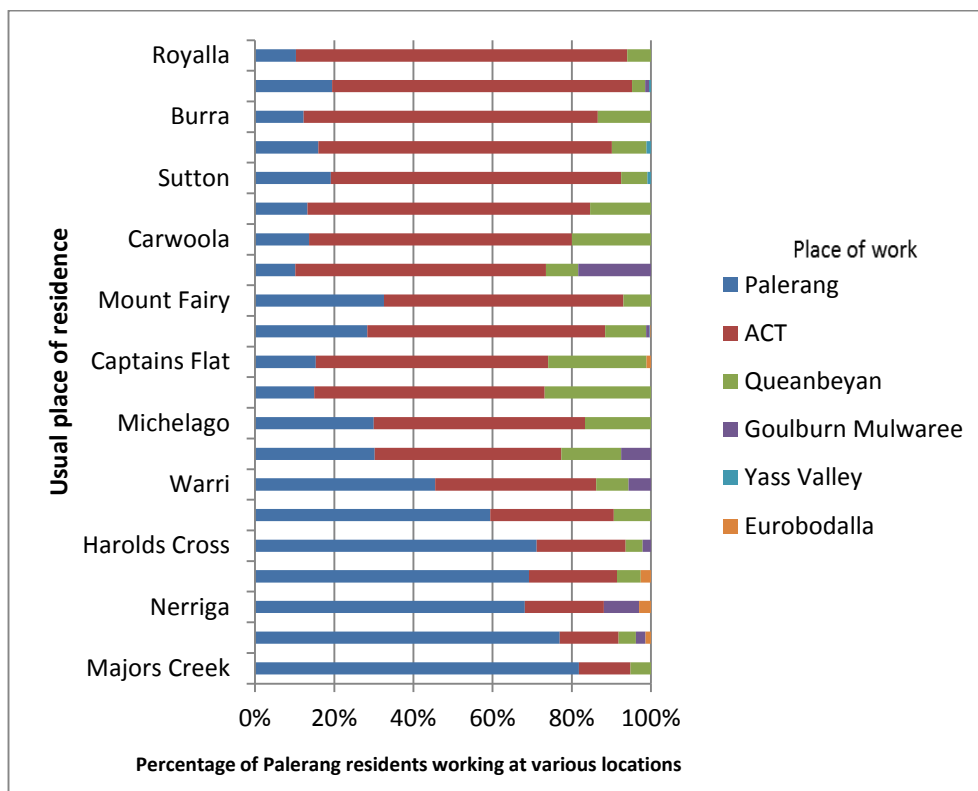
The economic characteristics of the population vary across the localities of Palerang

The employment, income and business mix is very different for people who both live *and* work in Palerang, when compared with those who live in Palerang and work in adjoining areas (ACT and Queanbeyan).

As can be seen from the figure below, the proportion of the workforce employed in Canberra becomes less as distance from Canberra increases and its influence decreases. Rural household incomes are by far the highest in the western parts of the LGA. Median weekly household incomes for Wamboin-Bywong and Carwoola-Burra & district were \$2,337 and \$2,435 respectively compared to \$1,141 in Palerang Rural East.

The SES analysis of the 2011 ABS Census shows that only about 30% of employed people residing in the Palerang LGA list Palerang as their place of employment. Most, 58.7% of Palerang employed people work in the ACT, about 10% worked in Queanbeyan and less than 2% worked in other surrounding shires. (p.2 Profile)

Figure 7: Percentage of workers in locality by place of work

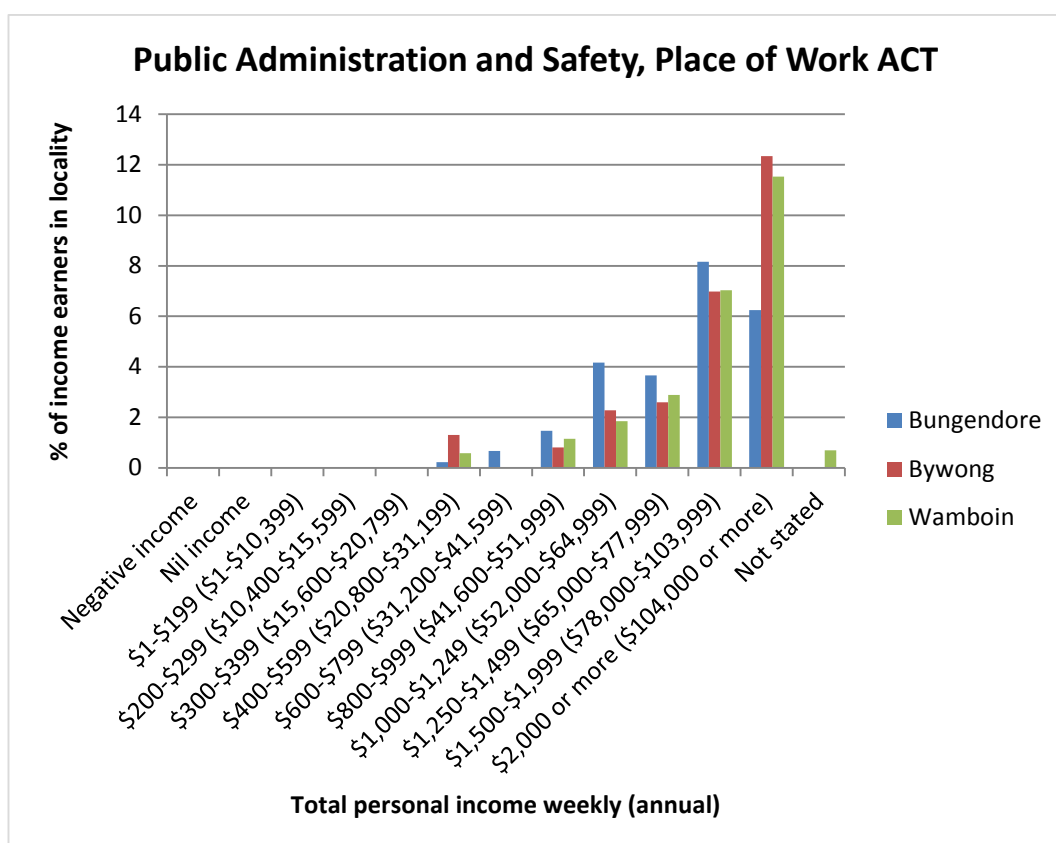


As would be expected, at the time of the 2011 Census the majority of Wamboin-Bywong workers were employed in public administration and safety (24.5% and 27.4% respectively), 91.4% and 94.7% respectively worked in the ACT. Professional, scientific and technical services was next with 14.5% and 14.3% respectively with most working in the ACT.

Incomes are relatively high, particularly in Wamboin and Bywong both of which have high proportions of residents working in the public sector and in professional services in the ACT (p.2), while Bungendore has more low to middle range earners (p.17).

The Strategic Economic Solutions report hypothesises that, as those from Bywong and Wamboin tended to work longer hours than those from those living in Bungendore are largely Commonwealth and ACT public servants in the middle range while there are many more higher level public servants in Bywong and Wamboin (p.17).

Figure 8: Income/place of work ACT



(Source p.19 Profile)

Unemployment rates are low – they varied between 1.2 and 2.4% from March 2008 to December 2013 (p.2 Economic Profile, Kim Houghton).

Agriculture and employment

The number of people directly employed in agriculture is not a high proportion of the working population of Palerang. But agricultural and indirect agricultural support employment is a vital and significant component of the localities/settlements away from the more Canberra commuter focused rural living areas.

The ABS counted 432 farms with some commercial activity in 2011 which indicates at least that many people with at least a part-time commercial interest in agriculture.

It is likely over 2,000 people have some significant economic dependence on agriculture.

2.5.2 Commercial Agriculture

The following has been extracted mostly from the Palerang economic profile.

SES (2014) state that within the Greater Capital Region of New South Wales, the Palerang LGA is a hub for agriculture (SGS 2014), particularly cattle and sheep. It is also makes a relatively significant contribution to clean energy production in the broader region (SGS 2014 p.3).

Agriculture is identified as the largest industry within the Palerang LGA, in terms of employment and total number of businesses. In June 2012, 488 of the 1,721 businesses were in agriculture, forestry and fisheries (SGS p.31).

The agriculture, forestry and fishing industries were the largest employer of people *living and working* in the Palerang in 2011, accounting for 16%, while the retail industry employed 10.2% of those who both live and work in the Palerang.

The gross value of agricultural production for the Palerang LGA was \$33.5 million, with a local value of \$30.6 million (in 2011). Agricultural census data suggests there were approximately 432 farms in the Palerang LGA in 2011, such that the average annual gross farm income in the Palerang LGA was approximately \$70,833 per farm (SGS p.31).

Cattle and sheep grazing were the principal agricultural activities (\$23 million production) while a total of 17 orchards produced over \$2m (SGS p.31).

Table 13: Number of farms by farming activity

Activity	Number of farms
All holdings	432
Pasture for grazing	400
Pasture for hay	40
Pasture for seed	5
Cereal crops for hay	10
Cereal crops for grain or seed	12
Cotton	1
Other broadacre crops	6
Nurseries, cut flowers and cultivated turf	9
Fruit or nut trees, plantation or berry fruits (excl. grapevines)	17
Vegetables for human consumption	8
Vegetables for seed	2
Grapevines	9

Source: ABS Water Use on Australian Farms, 2010-11, Cat No. 4618.0

Table 14: Number of businesses in the Palerang LGA by industry, June 2012

Industry	No.
Agriculture, Forestry and Fishing	488
Mining	7
Manufacturing	50
Electricity, Gas, Water and Waste Services	5
Construction	348
Wholesale Trade	30
Retail Trade	83
Accommodation and Food Services	49
Transport, Postal and Warehousing	80
Information Media and Telecommunications	16
Financial and Insurance Services	55
Rental, Hiring and Real Estate Services	91
Professional, Scientific and Technical Services	198
Administrative and Support Services	38
Public Administration and Safety	3
Education and Training	23
Health Care and Social Assistance	36
Arts and Recreation Services	39
Other Services	46
Unknown	36
Total	1,721

Source: ABS National Regional Profile for Palerang LGA 2014, p.29

Table 15: Local value of agricultural product for Palerang LGA, 2010-2011

Agricultural product	Local Value (\$m)
Cattle	15.8
Wool	3.9
Sheep and lambs	3.3
Fruit (excl. grapes)	2.2
Nurseries, cut flowers and turf	1.8
Hay	1.4
Eggs	0.7
Oilseeds	0.4
Cereals (grain)	0.2
Other broadacre crops	0.2
Other livestock products	0.2
Vegetables	0.1
Grapes	0.1
Total	30.3

Source: ABS Value of Agricultural Commodities Produced, Australia, 2010-11, Cat No. 7503.0 p.32

Private sector employment was also relatively large in the agricultural, forestry and fishing industries, and manufacturing, but employment in these industries was falling (SGS 2014). Increasing employment in the agricultural sector may be one strategy for ensuring people can work within the Palerang or broader RDA Southern Inland region (SGS 2014 p.3).

Local Lands Service view on agriculture direction

Looking to a 20 year future, the LLS general view is that not a lot will change regarding the current agricultural operations and production. Fine wool prices may climb back up a little. Some small niche markets are emerging but more on smaller holdings e.g. alpaca meat, special meat breeds, organic food, niche orcharding.

Traditional beef cattle and sheep enterprises are likely to still dominate the value of rural production well into the future.

2.6 PLANNING CONTROLS RELEVANT TO A RURAL STRATEGY FOR PALERANG

2.6.1 NSW Government State Plan

The NSW Government has introduced an overarching State level plan called “NSW 2012” (see https://www.nsw.gov.au/sites/default/files/nsw_2021_plan.pdf)

It presents a range of 32 broad State goals:

REBUILD THE ECONOMY

1. Improve the performance of the NSW economy
2. Rebuild State finances
3. Drive economic growth in regional NSW
4. Increase the competitiveness of doing business in NSW
5. Place downward pressure on the cost of living
6. Strengthen the NSW skill base

RETURN QUALITY SERVICES

TRANSPORT	HEALTH	FAMILY & COMMUNITY SERVICES	EDUCATION	POLICE & JUSTICE
<ol style="list-style-type: none"> 7. Reduce travel times 8. Grow patronage on public transport by making it a more attractive choice 9. Improve customer experience with transport services 10. Improve road safety 	<ol style="list-style-type: none"> 11. Keep people healthy and out of hospital 12. Provide world class clinical services with timely access and effective infrastructure 	<ol style="list-style-type: none"> 13. Better protect the most vulnerable members of our community and break the cycle of disadvantage 14. Increase opportunities for people with a disability by providing supports that meet their individual needs and realise their potential 	<ol style="list-style-type: none"> 15. Improve education and learning outcomes for all students 	<ol style="list-style-type: none"> 16. Prevent and reduce the level of crime 17. Prevent and reduce the level of re-offending 18. Improve community confidence in the justice system

RENOVATE INFRASTRUCTURE

19. Invest in critical infrastructure
20. Build liveable centres
21. Secure potable water supplies

STRENGTHEN OUR LOCAL ENVIRONMENT AND COMMUNITIES

22. Protect our natural environment
23. Increase opportunities for people to look after their own neighbourhoods and environments
24. Make it easier for people to be involved in their communities
25. Increase opportunities for seniors in NSW to fully participate in community life
26. Fostering opportunity and partnership with Aboriginal people
27. Enhance cultural, creative, sporting and recreation opportunities
28. Ensure NSW is ready to deal with major emergencies and natural disasters

RESTORE ACCOUNTABILITY TO GOVERNMENT

29. Restore confidence and integrity in the planning system
30. Restore trust in State and Local Government as a service provider
31. Improve government transparency by increasing access to government information
32. Involve the community in decision making on government policy, services and projects

The Plan sets employment and growth targets at State level but then devolves detail to Regional Action plans. Palerang is located in the South East Regional Action plan.

2.6.1.1 South East Regional Action Plan

The Regional Action Plans follow a dual bottom up and top down structure as defined below:



The Plan outlines key infrastructure projects running or planned in the near future. One of the specific projects nominated for Palerang relates to a study for possible upgrade of the Nerriga-Nowra road. There are broader strategies for developing synergies with the ACT region and improving inland transport links.

The South East Regional Action Plan has the following goal for land use planning:

Improve the coordination of strategic planning in the region

The NSW Government is improving the coordination and management of growth and development in South East NSW through strategic planning initiatives including:

- Working in collaboration with the ACT Government to develop an ACT-NSW Land Use and Infrastructure Plan to deliver collaborative strategic land use and growth related infrastructure planning across the broader South East NSW region
- Reviewing and updating the Sydney-Canberra Corridor and South Coast Regional Strategies to reflect the NSW Government's new integrated planning approach that incorporates land use planning, infrastructure planning and transport planning.

The new regional growth plans will also balance the opportunities for jobs growth and the projected population change, with the regions natural assets and biodiversity.

2.6.2 State Government Policies on Agriculture

To retain opportunities for agriculture to grow, the NSW Department of Primary Industries provides advice to planning consent authorities and industry groups to support sustainable resource use and production opportunities.

There are two current policy documents of the DPI and a DPI handbook for managing land use conflict issues (written for the NSW North Coast but with state wide applicability). These documents will be referred to in the development of the rural strategy and will be useful for further guidance and content. The following link provides access to these three documents on the DPI website.

<http://www.dpi.nsw.gov.au/agriculture/resources/lup/strategic-planning>.

DPI Policy 0-104 – Maintaining land for agricultural industries (2011)

The purpose of this document is to guide the planning system in providing certainty and security for agricultural enterprises over the long term and to enable those enterprises to respond to future market, policy, technology and environmental changes. It provides direction in development and implementing planning instruments relevant to agriculture or rural communities, such as rural strategies. Four policy provisions and procedures are outlined:

- *Environmental planning instruments should be structured to:*
 - a. promote the continued use of agricultural land for commercial agricultural purposes, where that form of land use is sustainable in the long term;
 - b. avoid land use conflicts;

- c. protect natural resources used by agriculture;
 - d. protect other values associated with agricultural land that are of importance to local communities, such as heritage and visual amenity;
 - e. provide for a diversity of agriculture enterprises, including specialised agricultural developments, through strategically planned locations to enhance the scope for agricultural investment in rural areas; and
 - f. allow for value adding and integration of agricultural industries into regional economies.
- *Conversion of land*

The conversion of land used by agricultural enterprises to other uses should only take place where fully justified in the strategic planning context. Considerations include:

- all alternative sites and options for non-agricultural developments;
- any decisions to convert agricultural land of high value to regional and state agricultural industries should be a last option; and
- the impact of non-agricultural developments on agricultural business and infrastructure reliant on the surrounding agriculture production.

Minimum size of holdings for dwelling entitlement

The minimum area for a dwelling entitlement and other provisions in Environmental Planning Instruments to regulate subdivisions should take into account:

- a. the agricultural productivity and suitability of the land in question;
 - b. the nature and requirements of agricultural industries in the area being considered;
 - c. the risk of creating land use conflict;
 - d. the current distribution of property sizes and the agricultural industry they support;
 - e. the trends in the size of properties engaged in agriculture; and
 - f. cumulative impacts e.g. gradual subdivision of agriculture becomes rural residential zone.
- *Minimising land use conflict*
- Councils should also consider other approaches to achieving the goal of minimising conflict in agricultural production zones so that farms can operate without unnecessary restrictions.

Minimum lot size methodology paper

This document describes two methods that may be used to identify or determine minimum lot sizes. They provide a realistic snapshot of what could be regarded as a commercial farm size for a locality.

Option A is a basic assessment which can assist Local Government to determine an acceptable minimum lot size without detailed analysis. It is the DPI recommended approach to determining a minimum lot allotment size for an entire LGA.

Option B is a more detailed economic analysis and compilation of data for sub districts, which can assist Local Government to determine minimum allotment sizes appropriate for the promotion of sustainable agriculture in that locality.

A detailed case study is provided for reference in the methodology document.

The Option A method is presented below:

Option A: Basic assessment

Step 1: Identify the key agricultural industries and enterprises in the LGA

What are the main agricultural industries in the LGA? These may include the type and mix of crops, the grazing enterprises, and horticultural or vegetable crops.

What is the LGA well-known for? Most LGAs have economic development reports that provide a detailed account of agriculture in the area, and which can be used to contribute to this procedure.

Has agriculture in the LGA changed over time and if so what has happened? It is important to look at the changes in crops or livestock over time and the number and size of holdings that make up the enterprises. While holding size may be fairly stable, factors such as drought and seasonal variability, or fluctuating commodity prices, will affect economic returns, and should all be considered. In some areas changes in enterprises may occur due to technological change, or new market opportunities.

It is important to identify any major shifts and trends in enterprises as a result of technological, market or environmental influences.

Industry organisations, government agencies such as the Australian Bureau of Statistics (ABS) and ABARE and the farm service sector may be able to provide information on key enterprises and trends across the LGA. Once the major agricultural

enterprises have been identified across the LGA, the process of undertaking some case studies can begin.

Step 2: Identify the characteristics of farms in the LGA

What are the land use characteristics of the major existing agricultural enterprises in the area?

The mix of crops and livestock enterprises across the LGA may vary according to factors such as locality, topography, soil type and climate.

Are there distinctly different patterns of agriculture in different areas across the LGA? Different areas may need to be considered for special provisions where the potential for conflict may arise, ie intensive agriculture.

In cropping areas, several crop options may need to be investigated, while grazing enterprises may operate both sheep and cattle enterprises, for example.

Assessment of holding size and pattern. The size of existing commercial holdings may be a useful indication of a realistic holding size in the area. It is important to recognise that some farmers are constantly adjusting their holding size and enterprise selection in response to economic conditions, so this may be a factor in determining the base size of a holding considered to be reflective of commercial farms in an area. An estimate of a realistic holding size can be determined at this point.

DPI handbook

The development of the rural strategy will also utilise 'Living and Working in Rural Areas – A handbook for managing land use conflict issues on the NSW North Coast' as a reference document to help manage and reduce land use conflict issues. The handbook is designed as practical reference that brings together information on the background to land use conflict and interface issues and material on managing land use conflict at the interface including key issues and tools available. Although the document does not cover the project area, the majority of the content is relevant. Chapters of particular relevance include (4) Common rural land use conflict issues; (5) Policies and plan; and (6) Development control.

2.6.3 Sydney/Canberra Corridor Strategy 2006-2031

This strategy is the current regional strategy of the Department of Planning and Environment (DPE) applicable to Palerang. Palerang is defined in the south section of the strategy with Yass Valley and Queanbeyan.

This Strategy and its supporting documents can be accessed at:

<http://www.wsc.nsw.gov.au/development/strategies-and-plans/sydney-canberra-corridor-regional-strategy>.

At the time of drafting this report, the DPE has advised it is intended for this Strategy to be replaced by a growth plan as discussed in Section 2.6.4 below.

The goals of the strategy are:

"It is a 25 year land use blueprint focused on creating jobs and reducing the pressure on housing process in the region, whilst protecting environmental assets, local character and resources."

The following are some extracts of relevance to the Palerang Rural Lands Strategy:

- It notes in a 2010 update Palerang had a population increase of about 1,000 people or 3.5% between 2006 and 2008.
- The original strategy projected population growth of 44,200 and extra jobs of 27,800 across the region over the 25 years to 2031. It suggests 14,200 additional dwellings would be required in the south section of the region which includes Palerang.
- It calls for the development of a housing monitor and land development monitor. Unfortunately, the monitoring to date has mostly an urban focus and it seems none of the Councils surrounding Canberra have a detailed, up to date monitor of rural land uptake – something that seems an important planning task for the future.
- The strategy calls for no additional residential or rural residential rezonings in the Sydney water catchment unless it can be demonstrated there are no adverse impacts on water quality and quantity. This is a curb on further releases in the Shoalhaven catchment of Palerang.

- It has the following objectives for Rural Lands:

Rural Lands

1. *Rural lands in the Region underpin its economic base as well as providing its intrinsic rural character – a key attraction that draws people to the Region. Agriculture is a significant employer for the Region, contributing almost \$200 million to the economy of the Region and to the life of rural communities.*
2. *Preserving rural lands as a resource for existing and emerging agriculture is a key challenge for the Region. Balance is needed between agricultural production, maintaining a rural character and opportunities for appropriate development.*
3. *By focussing the majority of urban growth in existing cities and towns, the Strategy ensures the character of rural areas is not lost to inappropriate development.*
4. *State Environmental Planning Policy (Rural Lands) 2008 (the SEPP) was recently introduced to provide additional certainty for the rural lands across NSW – the Regional Strategy is consistent with the SEPP.*

- The strategy raises a concern for Councils to consider regarding rural residential demand:

The extent of dispersed rural residential development has significant implications for costs of servicing, the fragmentation of lands and impacts on agriculture.

A significant challenge for councils within the commuting areas of Sydney and Canberra will be the management of the demand for a rural lifestyle in a manner that safeguards agricultural land.

2.6.4 Proposed Canberra Region Growth Plan

This proposal is for something akin to the Illawarra Draft Regional Growth Plan and to a large extent that should replace the SCCR above.

The following extracts from the Wollongong Plan allow some understanding of the likely regional directions to come forth for the capital region.

Jobs

- Types of jobs and localities;
- Strengthening regional retail;
- Industrial land supply;
- Addressing disadvantaged.

Housing

- Getting the mix and diversity right;
- Adequate infrastructure;
- Affordable.

Infrastructure

- Current State infrastructure commitments;
- Infrastructure needs for housing;
- Infrastructure needs for business.

Agriculture

- Identifying Regionally Important Agricultural lands.

Figure 9: Illawarra Draft Growth Plan objectives for rural land



Figure 10: Illawarra Draft Growth Plan – Maximising the productivity of Resource Lands

	ACTION	RESPONSIBILITY	TIMING
5.3	Commence a strategic biodiversity assessment of the Dunmore Hills area to provide certainty for the long term extraction of hard rock resources through the establishment of either biodiversity certification and/or bio-banking agreements	NSW Office of Environment and Heritage; Shellharbour City Council; Kiama Municipal Council	Short/ Medium
5.4	The sequencing of release areas in the vicinity of mineral resources should ensure extraction activities can continue	Wollongong City Council; Shellharbour City Council; Kiama Municipal Council; Shoalhaven City Council	Long
5.5	Ensure Sydney Drinking Water Catchment areas are protected from development that does not meet the neutral or beneficial effect test	Wollongong City Council; Shoalhaven City Council; NSW Office of Environment and Heritage; Sydney Catchment Authority	Ongoing

Environment

- Regional biodiversity corridors;
- Protecting biodiversity in new development;
- Healthy waterways;
- Protecting Aboriginal Cultural heritage.

General Comment

These Regional Growth Plans are a new form of regional strategy and one that seeks to evolve and partnership with Councils on data monitoring and planning for growth and infrastructure.

It is likely such a strategy will emphasise the following issues relevant to Palerang:

- Direction on rural small holding supply given the impacts of Canberra and differing Local Council strategies;
- Direction on water resource protection;
- Protection of extractive resources for regional needs;
- Further biodiversity data refinement and protection of higher risk habitats and corridors; and
- Protection of heritage and water.

Timing for completion of the strategy has yet to be resolved but a draft may be in place in time to be of influence on the Palerang Rural Lands Strategy.

The situation will continue to be monitored with the Department.

2.6.5 Ministerial Directions under Section 117(2) EPA Act

Section 117 of the *Environmental Planning and Assessment Act* empowers the Minister for Planning to set directions to planning authorities such as councils. These directions have statutory weight and need to be complied with or the Minister/DPE persuaded to grant an exemption.

The following of the current 117 Directions have some relevance to Palerang rural planning:

Direction 1.2 Rural Zones

This policy prohibits any increase to the density of rural land for housing unless justified by a strategy which:

- (i) *gives consideration to the objectives of this direction,*
- (ii) *identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and*
- (iii) *is approved by the Director-General of the Department of Planning, or*
 - (a) *justified by a study prepared in support of the planning proposal which gives consideration to the objectives of this direction, or*
 - (b) *in accordance with the relevant Regional Strategy or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or*
 - (c) *is of minor significance.*

Direction 2.1 Environmental Protection Zones

This Direction requires:

A planning proposal must include provisions that facilitate the protection and conservation of environmentally sensitive areas.

A planning proposal that applies to land within an environment protection zone or land otherwise identified for environment protection purposes in a LEP must not reduce the environmental protection standards that apply to the land (including by modifying development standards that apply to the land). This requirement does not apply to a change to a development standard for minimum lot size for a dwelling in accordance with clause (5) of Direction 1.5 "Rural Lands".

Direction 2.3 Heritage Conservation

This direction requires:

A planning proposal must contain provisions that facilitate the conservation of:

- (a) *items, places, buildings, works, relics, moveable objects or precincts of environmental heritage significance to an area, in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic*

value of the item, area, object or place, identified in a study of the environmental heritage of the area,

- (b) Aboriginal objects or Aboriginal places that are protected under the National Parks and Wildlife Act 1974, and*
- (c) Aboriginal areas, Aboriginal objects, Aboriginal places or landscapes identified by an Aboriginal heritage survey prepared by or on behalf of an Aboriginal Land Council, Aboriginal body or public authority and provided to the relevant planning authority, which identifies the area, object, place or landscape as being of heritage significance to Aboriginal culture and people.*

Direction 4.3 Flood Prone Land

This Direction applies to lands where the Council proposes to apply or alter flood planning controls. Its implications for the work of this study are not considered great. Any new lands proposed for further development as a result of this study process would not be of flood risk.

Direction 4.4 Planning for Bushfire protection

This Direction applies to any planning proposals that might be generated by this Study where the land is or is to be mapped as Bushfire Prone Land by the Rural Fires Service (RFS). Significant areas of Palerang are so mapped. The Direction requires a procedure to be followed in the development of any such Planning proposal including consultations with RFS, and detailed compliance with the document "Planning for Bushfire Protection" 2006.

Direction 5.1 Implementation of Regional Strategies

This Direction requires Planning Proposals to be consistent with relevant regional strategies and in Palerang's case the Sydney-Canberra Corridor Strategy.

Generally only minor inconsistencies are permitted and even they must be consistent with the objectives of the Strategy.

Direction 5.2 Sydney Drinking Water Catchment

This Direction requires:

A planning proposal must be prepared in accordance with the general principle that water quality within the Sydney drinking water catchment must be protected, and in accordance with the following specific principles:

- (a) new development within the Sydney drinking water catchment must have a neutral or beneficial effect on water quality, and*
- (b) future land use in the Sydney drinking water catchment should be matched to land and water capability, and*
- (c) the ecological values of land within a Special Area that is:*

- (i) *reserved as national park, nature reserve or state conservation area under the National Parks and Wildlife Act 1974, or*
- (ii) *declared as a wilderness area under the Wilderness Act 1987, or*
- (iii) *owned or under the care control and management of the Sydney Catchment Authority, should be maintained.*

The direction requires compliance with *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011* and specifies zoning requirements for certain sensitive catchment lands and lands owned by Sydney Catchment Authority.

2.6.6 State Environmental Planning Policies

The *EPA Act* empowers the State Government to introduce State Environmental Planning Policies (SEPPs) to set regional scale planning requirements. Often these plans override local controls if the local control is inconsistent.

The following SEPPs have some direct application to Palerang rural planning.

2.6.6.1 SEPP (Sydney Drinking Water Catchment) 2011

This policy applies to the catchment of the upper Shoalhaven River – much of which is in Palerang LGA (see Map 4).

The aims of this Policy are:

- (a) *to provide for healthy water catchments that will deliver high quality water while permitting development that is compatible with that goal; and*
- (b) *to provide that a consent authority must not grant consent to a proposed development unless it is satisfied that the proposed development will have a neutral or beneficial effect on water quality; and*
- (c) *to support the maintenance or achievement of the water quality objectives for the Sydney drinking water catchment.*

Planning Proposals and specific development in the catchment needs to demonstrate a *neutral or beneficial effect on water quality*. The Policy links to an assessment tool of Sydney Water that has to be applied to make this determination.

2.6.6.2 SEPP (Rural Lands) 2008

This Policy applies to Palerang and requires adherence to the following principles:

The Rural Planning Principles are as follows:

- (a) *the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas;*
- (b) *recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State;*

- (c) *recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development;*
- (d) *in planning for rural lands, to balance the social, economic and environmental interests of the community;*
- (e) *the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land;*
- (f) *the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities;*
- (g) *the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing;*
- (h) *ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General.*

The SEPP also lists a number of requirements for rural subdivision but most of these are consistent with the provisions in the Palerang LEP 2014.

2.6.6.3 SEPP (Mining, Petroleum and Extractive Industries) 2007

This Policy attempts to protect known and likely mineral and extractive resources.

NSW Mineral resources have provided current mapping of major deposits of interest (see Map 5). This SEPP has particular applicability to development in or near these resource areas.

Generally, as part of a Planning Proposal for rural lands, consultation is required with NSW Mineral Resources.

2.6.7 Palerang Local Environmental Plans

2.6.7.1 Former local environmental plans and their influence

The following summary of the history of planning instruments is from “Discussion Paper, Comparison of Minimum Lot Size and Average Lot Size Provisions in the General Rural Zones” Palerang Council, planning and environmental services division, 2009.

Palerang rural planning history

From the mid-1960s when planning controls were introduced to the area that now comprises Palerang, a wide variety of lot sizes have been permitted, from 10 ha under the Monaro Interim Development Order (IDO) to 80 ha under the Gunning LEP 1997. Up to 8 concessional lots, with areas as small as 1,000 m², were also permissible under the earlier planning instruments.

a. Yarrawlumla

- From 1964 to 1986 the Yarrawlumla Interim Development Order (IDO) No. 1 allowed rural subdivision to 20 ha (1964-66), 16 ha (1966-73), 40 ha (1973-75) or 80 ha (1975-86), up to 3 concessional lots of 1,000 to 4,000 m² and up to five 2 ha agricultural lots, all with dwelling entitlement.
- Yarrawlumla LEP 1986 and Yarrawlumla LEP 1993 (from 1993 to October 1995) allowed rural subdivision to 80 ha and one concessional lot.
- In October 1995 Yarrawlumla LEP 1993 (Amendment No. 6) removed the concessional lot provision and introduced average lot size provisions into the rural and environmental protection zones. Minimum lot size was 8 ha (or 16 ha if prime agricultural land) and average size was 80 ha.

b. Tallaganda

- Tallaganda IDO No 1 (1974 to 1991) allowed rural subdivision to 40 ha and up to three 2 ha agricultural lots and up to 3 concessional lots (minimum 1,000 m²).

c. Mulwaree

- Mulwaree Planning Scheme Ordinance (1970 to 1995) allowed rural subdivision to 40 ha and up to three 2 ha agricultural lots and up to 3 concessional lots (minimum 1,000 m²).
- From 1966 to 1970 the Gunning IDO No. 1 allowed rural subdivision to 16 ha, up to 3 concessional lots of 1,000 to 4,000 m² and up to five 2 ha agricultural lots, all with dwelling entitlement. In 1970 the minimum lot size was increased to 80 ha and the ability to create small rural lots was deleted (concessional lot provisions remained). In 1975 the ability to create 2 ha lots for agriculture (up to 3) was reinstated.

d. Gunning

- Gunning LEP No. 1 (1981) allowed rural subdivision to 80 ha and up to 3 concessional lots.

e. Cooma-Monaro

- Monaro IDO No. 1 (1965 to 1968) allowed subdivision to 10 ha and up to 6 concessional lots.
- Monaro Planning Scheme (1968 to 1999) allowed subdivision to 40 ha and up to 3 concessional lots.

Palerang Plans in place prior to commencement of Palerang LEP 2014

Six principal LEPs applied to rural land in Palerang prior to LEP 2014:

- *Yarrawlumla LEP 2002* allowed rural subdivisions with a minimum of 8 ha (or 16 ha if prime agricultural land) and an average of 80 ha, with a maximum of 5 lots less than 80 ha.
- *Tallaganda LEP 1991* allowed rural subdivision to 40 ha minimum size.

- *Mulwaree LEP 1995* allowed rural subdivision to 40 ha minimum size.
- *Gunning LEP 1997* allowed rural subdivision to 80 ha minimum size.
- *Cooma-Monaro LEP 1999 (Rural)* allowed rural subdivisions with a minimum of 5 ha and an average of 80 ha.
- *Goulburn Mulwaree LEP 2009* allowed subdivision to a minimum size of 100 ha.

Most of these provisions have been rolled over to the current 2014 LEP.

Prior to being amended by the Rural Lands SEPP in May 2008, the Tallaganda LEP 1991 and Mulwaree LEP 1995 allowed up to 3 concessional lots.

A significant number of concessional lots have been created and these are scattered across the rural zones. Analysis of the implication of these lots is included in Section 2.7.

2.6.7.2 Palerang Local Environmental Plan 2014

The *Environmental Planning and Assessment Act 1979* empowers the Minister for Planning to make local environmental plans (LEP). Usually councils prepare LEPS and Palerang has recently completed a new LEP to apply across the LGA and it is the Palerang LEP 2014.

The controls in an LEP have statutory force and form the local basis of what is permissible with and without consent and what development is prohibited in a particular zone. LEPS also specify a wide range of standards which generally apply but in certain circumstances can be varied. Other environmental planning instruments such as the State Environmental planning Policies in Section 2.6.6 above can overrule specific controls in an LEP and need to be read together.

All NSW councils were required to move to new LEPS based on the NSW Standard Instrument, and Palerang LEP NSW is such a plan. The LEP rolls over many former provisions of the old planning controls of the former 6 shires which now are included in part in Palerang. Intentionally, Council in consultation with the community resolved to defer any major review of rural controls to a formal rural Study. The Department of Planning and Environment also supports this position and in fact Ministerial directions require a study before some types of rural control can be varied.

The rural controls in LEP 2014 in particular have changed little from the former plans which leaves the complexity of varying controls and standards applying across the rural zones. For example, the lot sizes vary between 40 and 80 ha across most of the RU1 zone based purely on the reason that a particular standard applied in the old shire. Also some areas have lot averaging provisions for subdivision and others do not. This is a consequence of amalgamation history rather than any considered planning strategy.

A major objective of this Study is to review the controls and where supportable move to LGA wide provisions based on merits of the control for Palerang for the coming 20 years rather than the planning history that has been inherited.

2.6.8 Development Control Plans

The Environmental Planning and Assessment Act empowers councils to be able to formalise development guidelines and controls into Development Control Plans (DCPs).

Council has recently adopted a new comprehensive development control plan to apply across the LGA and replace the existing set of DCPs.

As part of the research for this report, the draft DCP was reviewed for rural guidelines and controls. These are summarised below. The controls appear comprehensive.

Should additional suggestions for guidelines or controls for rural related development emerge from this study process, then amendments to the DCP might be considered by Council.

Summary of the DCP

The DCP is divided into five sections. The guidelines and controls of direct relevance to rural development are as follows:

DCP Section B General Provisions

Flora, fauna, soil and watercourses

This section refers to the protection, retention, enhancement and potential recovery of biodiversity and threatened species and endangered ecological communities which is particularly relevant to rural areas. The controls require that all appropriate legislation be addressed and further investigations carried out where necessary. Where development may have an impact on riparian areas and accelerating erosion and sedimentation on steep or fragile land, controls are required for further investigations and reports.

Developments that involve large amount of land (e.g. wind or solar farms, subdivisions) may require a habitat corridor management plan to maintain or enhance existing habitat corridors.

Tree and vegetation removal is also limited under the DCP where the clearing comes under Council development approval control. The objective of the controls is to conserve trees and other vegetation of ecological, heritage, aesthetic and cultural value and to ensure that any new development considers and maximises the protection of existing vegetation in the site planning, design, development, construction and operation of the development. Specific controls include reference to relevant legislation, further investigation and management plans as required, presence (and reporting) of specialists as needed.

Where environmental protection works are required, controls are in place to ensure they are undertaken in a manner that benefits the natural environment.

Bushfire prone land

All new construction subject to bush fire must comply with current legislation. The objectives of the controls is to minimise risk to life, property and the environment from bush fire and ensure compliance statutory obligations.

Development on ridges and prominent hills

The DCP outlines that development (including any vegetation clearance etc.) is not to take place on ridges and prominent hills and they are important visual reference points and contribute to the character of the rural landscape. Development has the potential to detract from visual amenity of the land and as such controls specific that all development is to be kept below significant ridgelines and no vegetation to be removed from ridgelines.

Engineering requirements

Rural internal access roads and entrances – controls are specified to ensure safe access, minimal environmental impact and that they meet requirements for bush fire protection.

Erosion and sediment control

To control the potential impacts of sedimentation from development sites, controls are in place to minimise those potential impacts. The DCP require preparation of Soil and Water Management Plans and appropriate site preparation such as sediment control measures, buffer zones, fencing and other devices, dams, management of gutters and kerbs and revegetation. Detailed provision of wash out areas, stabilised entry/exit point and positioning and covering of stockpiles is outlined, as well as requirements for inspection and maintenance, construction sites and roads is also detailed.

Flood planning

Flood studies and floodplain risk management plans have been completed for several areas in the Palerang LGA. The controls for rural uses specify that development on land below the flood planning level will be considered based on their merits.

Heritage – European, Aboriginal and Natural

The DCP recognises the importance of preserving and protecting items and areas with heritage significance. The controls require that specialist studies are carried out where there are known or suspected heritage values.

Social and economic impact assessment

Where deemed necessary, particularly with larger developments, Council may require a social or economic impact assessment to be carried out. The controls specify the use of qualified specialists and information to be contained in the report.

Landscaping

The DCP outlines controls for the landscaping of development to enhance streetscapes and blend new development into the streetscape. It provides that landscaping should be planned and undertaken during the initial stage of the development and should consider usability, privacy, neighbours' amenity and opportunities for social and recreational activities.

On-site System of Sewage Management (OSSM)

Due to the location of rural lands away from existing services many rural developments must provide OSSM. The controls in the DCP ensure that facilities

meet statutory requirements with all relevant documentation provided. It also outlines when subsurface irrigation is required, what practices are unacceptable and requirements for renewal of on-site wastewater approvals.

Potentially contaminated land

The DCP identifies some activities that may cause contamination, which may require assessment in accordance with relevant legislation.

DCP Section C Development specific provisions

Eco-tourist facilities control provides that internal roads and the entrance to the facility should minimise fragmentation of environmentally sensitive land.

Bed and breakfast accommodation controls relate to development and design, operational matters and car parking.

Roadside stall controls relate to the safe location and access to ensure roadside parking does not impede traffic sight lines or pose any safety risks from passing traffic. Materials should also be non-reflective and complementary to its surrounds and must have suitable storage as per NSW regulations.

Sheds in RU1, E3 & E4 zones

The controls in regards to the construction of sheds are designed to ensure that farm buildings are designed and sited so as not to detract from the rural landscape, scenic quality and environmental significance of the rural areas and provide suitable buffers between farm buildings and residential uses.

Rural industry

The controls for rural industry are to ensure that industries are compatible with the rural environment and minimise any adverse impacts on the amenity of the surrounding lands. They restrict building location, design, materials and colour choice and outline required setbacks.

Intensive agriculture

The controls for intensive agriculture are provided to ensure compatibility with the rural environment and minimise any adverse impacts on surrounding lands (character, amenity, agricultural productivity). It also provides to ensure that livestock agricultural enterprises are of sufficient size so that potential conflicts with surrounding land are minimised. They restrict building location, design, materials and colour choice and outline required setbacks/buffers.

Animal boarding or training establishments for cats, dogs and horses

The overall objective of the controls for animal boarding or training establishments is to provide accommodation, environment and security of animals of a standard which ensures their safety and wellbeing. Specific controls relate to the provision of suitable water, drainage, shelter, surfaces, hygiene, ventilation, security, emergency access and evacuation, car parking, treatment of animal effluent and wastewater and noise levels.

Horse stables and horse arenas

Horse stables are considered a building and so require development approval. The objective of the controls is to provide accommodation, environment and security of animals of a standard which ensures their safety and wellbeing. Specific controls relate to suitable building and yard size and surfaces, drainage, hygiene, shelter, ventilation, security, emergency access and evacuation, car parking, treatment of animal effluent and wastewater. Controls for horse arenas are also provided to ensure that the horse arena does not cause a loss of sediment and does not impact the amenity of the area through vegetation screening and revegetation.

Gates and fencing

The DCP comments that fences and gates can have a considerable impact on the character of area, and so should be given consideration to height, material, colour and nature of fencing in the area. The specific controls are split into zones – RU1, E3 and E4; R1, R2, R5 and RU5; Business; and IN2. The controls specify fencing standards, heights, materials, gate directions and permeability. Stock proof fencing is to be provided in non-urban land use zones. The DCP also specifies that where there are high biodiversity values, controls may be varied to maintain biodiversity.

2.6.9 Contribution Plans

Section 94 of the *Environmental Planning and Assessment Act 1979*, empowers councils to prepare contribution plans and levy contributions on developers to address the impact of a development on Council amenities and services.

There are ten current contribution plans with some application to rural development. The situation is complex as a result of the amalgamation and transfer of controls from the 6 former councils following creation of Palerang.

Council proposes to review the current contribution plans following the completion of the rural lands study and work on Bungendore. The rural study process may make recommendations towards the later proposed review of contributions plans.

2.6.10 Palerang Rural Discussion Paper (2008)

Council produced this discussion paper in 2008 as part of the background to the development of LEP 2014 and to guide the preparation of the draft Development Control Plan and Contributions plan.

This Discussion Paper and the various Council resolutions flowing from the preparation of LEP 2014 form a base and starting point for the Palerang Rural Lands Study project.

The 2008 Discussion Paper

Works through the following issues and topics:

- Details the then State and regional controls and framework.
- Provides a rural snapshot of Palerang as of 2008.
- Documents past planning controls.
- Details issues from a telephone residents survey and related consultation and visioning work.
- Defines Issues for consideration in the coming LEP/DCP process including:
 - An outline of demand for use of rural land.
 - Land use conflicts.
 - Climate Change.
 - Infrastructure considerations.
 - Agricultural viability.

This Study will draw on the information in the 2008 discussion paper and the issues it identifies and carry them forward for further community discussion and expansion.

2.6.11 Palerang urban discussion papers

During 2006, Council produced three discussion papers on the urban settlements of the LGA:

- *Braidwood Discussion Paper,*
- *Bungendore Discussion Paper,* and
- *Palerang Settlements Discussion Paper.*

The settlements discussion paper addresses planning issues for the smaller villages of Palerang.

While these are urban discussion papers, they raise issues related to urban impacts on the rural land resource and to that extent will be considered in the Rural Lands Study process.

2.6.12 Draft State proposals of possible impact on the Rural Strategy

As of the date of publishing this exhibition draft, the State Government has several matters under action that may influence the Palerang Rural Strategy. But as of this time the exact impacts are uncertain.

2.6.12.1 A New Planning Act

The proposals for a new Planning Act progressed to the stage of a draft Bill by end of 2013. However, since then the matter appears to be in abeyance.

Should the process recommence before the Palerang Strategy is complete, it will be necessary to review the work in the light of the new Act. But from examination of the draft Bill, there does not seem to be matters that would significantly reset the rural direction. The new legislation (if implemented as currently drafted) would seem to apply more to the process of how the strategy may be implemented and subsequent development managed and assessed.

For current information on the draft planning legislation visit:

<http://www.planning.nsw.gov.au/en-us/policyandlegislation/planningforourfuture.aspx> .

2.6.12.2 Possible Ministerial directions on the use of Environmental Protection Zones

In 2012 the NSW Government instigated a review of the use of Environmental Protection zones (E zones) on the North Coast of NSW.

A report was prepared by independent consultants Parsons Brinckerhoff in 2013 and is available at:

http://planspolicies.planning.nsw.gov.au/index.pl?action=view_job&job_id=6475 .

The report recommended a range of measures for determining when E zones are appropriate.

In July 2014 the Minister for Planning announced:

"... The NSW Government has given in-principle support to some of the report's interim recommendations, including:

Setting clear criteria for environmental zones known as E2 and E3 to ensure that these zonings are based on strong evidence.

- *Allowing grazing and other kinds of extensive farming activity with consent in some environmental zones and without consent in others*
- *Removing aesthetic value as an objective of the environmental management zone known as E3*
- *Removing the proposed environmental zones from Kyogle Shire Council's local plan until proper evidence is provided*

- *Replacing the proposed environmental living zone in Byron Shire known as E4 with a more appropriate residential zone.*

The draft report and interim recommendations were prepared after extensive consultation with councils, landowners and local stakeholders.

“The draft recommendations will now go on exhibition. Feedback from stakeholders will inform the Government’s decision, and a Direction will be issued to guide councils on the specific criteria to use when deciding to apply an environmental zone.”

As of exhibition of this report no summary of the exhibition submissions have been published and no directions have been issued.

2.6.12.3 Biodiversity review

In 2014 the NSW Government commissioned an independent review of the NSW biodiversity legislation. The report of the independent panel “A Review of the Biodiversity Legislation in NSW”, was released in December 2014 and is under consideration by the government.

A copy can be viewed at:

<http://www.environment.nsw.gov.au/biodiversitylegislation/review.htm> .

The report makes 43 recommendations including some significant changes to the biodiversity legislation including:

- Repeal of the *Native Vegetation Act 2003*.
- Return vegetation planning powers to Councils under the EPA Act. But improve skill base of Local Government and LLS.
- More voluntary guidelines and codes for local and small scale clearing.
- Development consent for clearing only to be necessary over defined vegetation and OEHL to be resourced to map this.
- Some private forestry exemptions from the need to have approvals.
- Expand the biodiversity offsets fund.
- Regional Conservation Plans to be absorbed into the more general Regional Growth and Infrastructure Plans.
- Implement the above and other recommendations through a new “Biodiversity Conservation Act”.

A formal State Government position on the Biodiversity Review had yet to be released as of the exhibition of this report. However, if implemented, the review recommendations will have consequences for Palerang Council rural planning. For example, Council may find it is required to administer planning controls over rural native vegetation that are currently administered by LLS – albeit in a reduced form with more exemptions and voluntary codes.

2.7 PALERANG RURAL SETTLEMENT

Note: There are a small number of existing dwellings in the E2 Environmental Protection zones as well but these enjoy existing use rights and new dwellings are not permitted in E2 and so no further settlement assessment is needed of that zone.

2.7.1 Rural Tourism/Accommodation

A web search of rural tourist accommodation (Stayz and Airbnb) revealed that some tourist accommodation is provided throughout the Palerang rural areas. Accommodation includes rustic forest cabins, farm stays, bed and breakfasts and cottages. The rural holiday accommodation industry appears to be small scale at present.

There is evidence of some limited cabin development (staff comment), catering associated with orchards and wineries. Anecdotal evidence suggests also that there may be some use of larger rural residential buildings for events such as weddings and similar functions.

Investigations are evidently proceeding into a potential rail trail development between Bungendore and Captains Flat. At its October 2014 meeting Council resolved to provide a letter of support to Rail Trails of NSW for the conduct of a feasibility study.

Canberra archery club may establish in west Palerang.

Existing events such as rodeos, shows, markets and equestrian events could be expanded to the benefit of rural tourism.

Goldfields heritage themes could be exploited to increase interest in the Araluen and Majors Creek areas.

2.7.2 Residential needs for Commercial Agriculture

Sufficient options seem to exist to meet the residential needs of commercial agriculture. The 2014 LEP allows dual occupancies, rural workers dwellings and secondary dwellings, so there is wide scope for workers accommodation and allowing for intergenerational transition.

The relatively small lot size (40 to 80 ha) and large number of vacant existing lots or existing holdings where a dwelling is permissible, give wide availability for a dwelling parcel. (See Section 2.7.3.4 for supply discussion).

There is some evidence of commercial operators with multiple holdings and only residing on one.

While the flexibility of available land for dwellings facilitates farm assembly for establishing farmers, the speculative value in all rural land in Palerang (caused by the demands from Canberra/Queanbeyan for rural living and hobby farming and this significant supply of dwelling opportunities) would pose a cost burden on

commercial agricultural enterprises wishing to acquire land for expansion as there would be an additional cost factored into per hectare prices based on the dwelling potential. In other words commercial operators wanting more land and not wanting more dwellings still have to pay for the potential subdivision and dwelling value generated by the current LEP.

2.7.3 Rural Residential, Hobby Farming and Small Scale Commercial Farming in the RU1 and E3

2.7.3.1 Differentiating Hobby Farms and commercial part-time farming

Various arguments can be made for the average land size at which point activity relates more to hobby scale agriculture than commercial scale. Even at hobby scale, carrying capacity and related productivity measures can still point to meaningful production, albeit, small scale.

Probably a purchase of 80 ha of at least average agricultural land in Palerang is an investment that a prudent purchaser would want to get some commercial return from and be such as size as to deter most people looking for hobby scale activities.

But the land types and quality in Palerang are diverse and in some areas several hundred hectares may be no more productive than 80 ha of average cleared grazing land.

Perhaps for the planning assessment, it is better to focus on supply and demand for size ranges and not at this stage draw too definite a conclusion as to the line between hobby and commercial.

2.7.3.2 Nature of rural living options

Discussions with real estate agents suggests that there is greater demand for rural living lots than the larger hobby farm lots.

As discussed previously there are a range of ways the various small holdings and “non-commercial” rural holdings may be defined and all have limitations.

But there are clearly separate markets for at least 3 categories (even if there is debate as to the agricultural activity of some):

- Small rural living opportunities – mostly under 5 ha; (this includes the E4 zones);
- Hobby farms – some agricultural use and ranging from around 5 ha to 80 plus ha; and
- Rural retreats – mostly large bush holdings with very little agricultural use.

There are more absentee landholders in East Palerang (particularly around the Braidwood area) than in West Palerang. This is a reflection of the nature of occupancy – East Palerang appears to have more weekenders and rural retreat lifestyle landholders compared to west Palerang where there are large numbers of commuters.

2.7.3.3 Demand for Rural Residential, Hobby Farms and Commercial part-time Farms

Work on demand data assembly is continuing. It would be desirable to summarise subdivision history of the past 20 years – what scale of fragmentation, compare old assessments with new ones and assemble data on approved concessional lots. These data are time consuming and costly to assemble and recourse to some approximations will be necessary at this stage of the Study. As resources permit, Council may develop a land monitor to enable more ready reporting of demand trends.

Desirable data from Council and other sources:

- Occupation certificates for new dwellings by area for 10-20 years;
- Subdivision certificate lot numbers by area for 10-20 years – lots over lot size;
- Council data on development application approvals for dwellings and subdivisions in the rural areas since amalgamation has been used;
- Aerial photo coverage at 10 and 20 years age, coordinated to GIS to allow historic dwelling counting for lots over lot size;
- Organisations such as the Land and Property Information Service may have historic cadastre – say 10 and 20 years past to coordinate in GIS and compare with current so as to summarise release subdivisions?
- It can be possible to use ABS population changes divided by average occupancy rate to get new dwellings. This option is available readily at district level but requires detailed search at cost for data down to level 1 statistical areas.

For this stage of the Study, available ABS data indicates the following dwelling growth in the areas mostly covered by the RU1 and E3 zones:

Table 16: Number of Dwellings

Locality	Dwellings 2001	Dwellings 2011	Increase	% Increase
Rural East	1,115	1,281	166	14.9
Rural West	591	693	102	17.3

(Source: <http://profile.id.com.au/palerang>)

The above table indicates continuing demand in the order of 17 dwellings per year in the eastern sections of the general rural zones and 10 per year in the western (27 per year across the RU1 and E3 zones).

As a cross check, Council data on dwelling approvals was summarised from Council amalgamation (July 2006) until the end of 2014 and a mean annual rate of approvals of 30 was calculated. This correlates well with the ABS data in Table 16.

The breakup of this past growth into parcel size and location would be desirable and is a possible target for a Land Monitor.

Projecting past demand as a target for future supply has risks:

- Economic conditions can vary such as a period of recession;
- Trends and fashions relating to rural living can change;
- Palerang is heavily affected by growth patterns of Canberra;
- Supply patterns of other NSW Councils surrounding Canberra, can reduce or increase demand. Yass Valley (like Palerang) has some significant supply and potential supply close to Canberra, while Cooma-Monaro, Upper Lachlan and Goulbourn Mulwaree have to date mostly restricted supply close to Canberra. (See Section 2.7.5 for some supply discussion regarding surrounding LGAs.)

Never the less, on current information there seems some prospects of uptake of around 30 vacant RU1 and E3 parcels per year for the 20 year projections of this Study.

The analysis on potential supply in Sections 2.7.3.4 to 2.7.3.6 below indicates a massive potential supply of over 3,000 dwelling opportunities. But a large proportion of this supply is more distant from demand.

There still seems little justification or need for more flexibility of new provisions to increase dwelling lot yield in the RU1 and E3 zones.

2.7.3.4 Supply of existing vacant parcels in the RU1 and E3 zones with dwelling rights

For an existing vacant land parcel in these zones to have the right to apply for a dwelling, it needs to pass 1 of 3 tests:

1. Be over the lots size for the area (40 ha for the former Tallaganda Shire and 80 ha for the parts of the other former Shires that were added to Palerang); or
2. Be an existing holding (i.e. all of an ownership as of a given date which varies from 1966 to 1997 in the RU1 and E3 zones depending on which of the former 5 LGAs the land was located in); or
3. Be a lot approved for a dwelling under former or current planning controls.

Calculating available supply from these three sources is a very challenging task in most rural councils and even more so in Palerang, given the complexities of the 5 former LGAs and their individual planning schemes.

The following estimates have qualifications as detailed below but have been developed from interrogation of data on Council's GIS system as outlined in Maps 9A to 11 and their accompanying explanations.

Test 1: Estimated supply from vacant existing ownerships over lot size

- E3 Zone, 40 ha lot size, vacant properties over 40 ha = 8
- E3 Zone, 80 ha lot size, vacant properties over 80 ha = 34
- RU1 Zone, 40 ha Lot size, vacant properties over 40 ha = 1,087
- RU1 Zone, 80 ha Lot size, vacant properties over 80 ha = 177
- **Total all above = 1,306**

(Source: extrapolation from Council GIS data)

Test 2: Potential yield from vacant Existing Holdings under lot size.

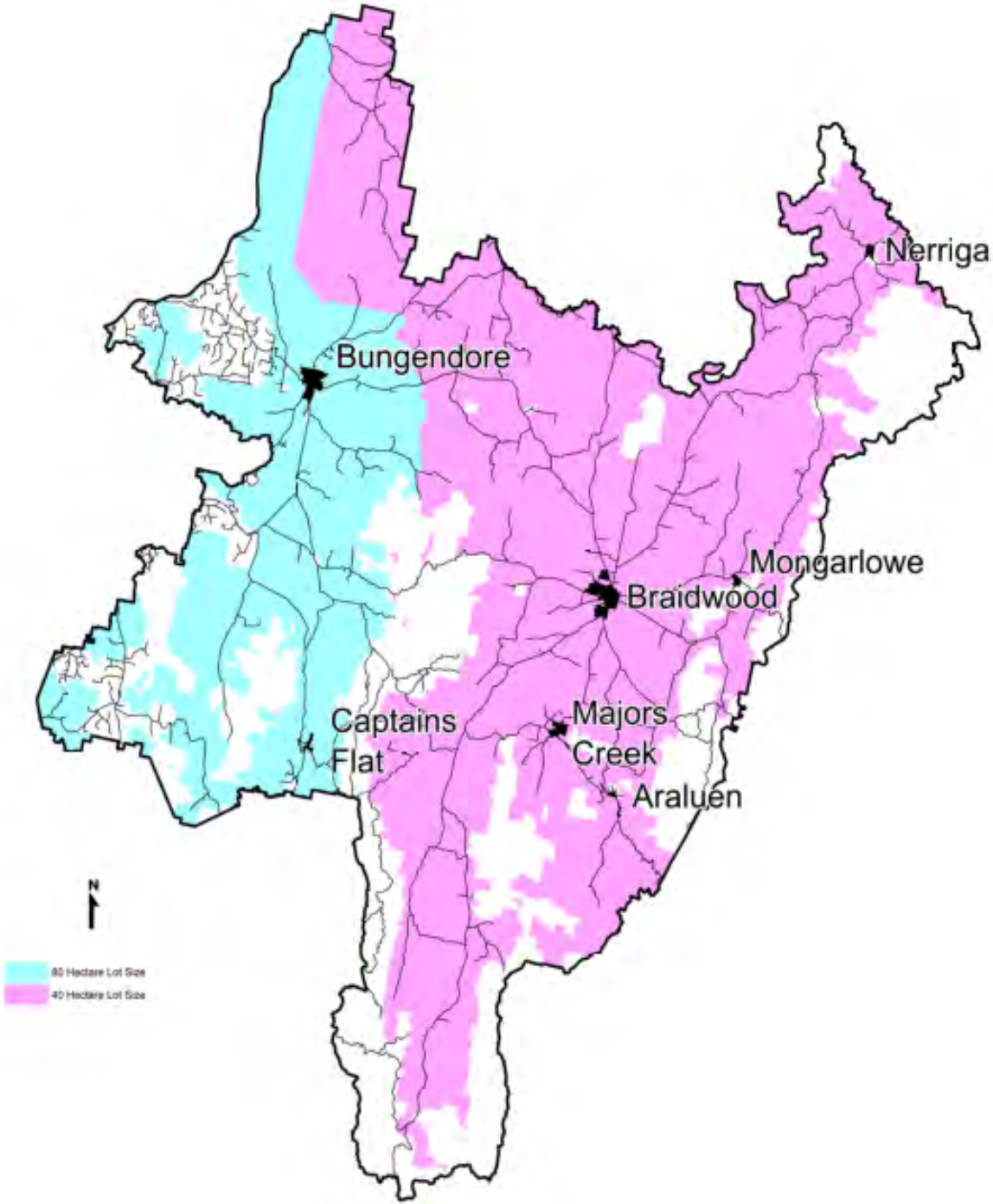
- There are 176 vacant assessments in the RU1 80 ha lot size area where the assessment is between 4,000 m² and 80 ha.
- There are 610 vacant assessments in the RU1 40 ha lot size area where the assessment is between 4,000 m² and 40 ha.
- There are 16 vacant assessments in the E3 where the lot size is 80 ha and the assessment is between 4,000 m² and 80 ha.
- There are 0 vacant assessments in the E3 zone where lot size is 40 ha and the assessments is between 4,000 m² and 40 ha.

(Source: extrapolation from Council GIS data)

So there are approximately 800 vacant existing ownerships in the RU1 and E3 zones where a dwelling would not be permissible via the lot size path (test 1 above). But many of these parcels will fall into category 2 (existing holding) or category 3 (a lot approved for a dwelling under previous plans) and as such an owner can apply for development consent for a dwelling by one of those paths.

800 is considered a conservative estimate of lots approved for a dwelling and Existing Holdings as some assessments contain several of either or both.

MAP 9A: RURAL LOT SIZE AREAS



Test 3: Potential yield from lots below lot size but approved for a dwelling under former planning schemes.

Under former planning schemes there were a variety of clauses where smaller lots could be created below lot size but still be eligible for a dwelling. For example, numerous concessional lots were approved under the previous schemes until the provisions were removed by State Environmental Planning Policy (Rural Lands) 2008. (Concessional lots are generally smaller rural residential lots which were created under early planning “concessions” granted to landowners as part of an offset for increased subdivision controls mostly developed in the early 1960s.)

The current LEP preserves the ability of the owner of such land to apply for consent for a dwelling. Unfortunately, it is a slow and complex process to resolve which lots enjoy the right for an owner to apply for consent for a dwelling – including a need to search back the subdivision plan and approval.

Lots with a deposited plan number starting 75 are original crown titles and as such cannot be lots approved for a dwelling. These crown titles need to either meet or exceed the lot size or be an existing holding to qualify for a dwelling. Using Council GIS data it is estimated there are approximately 1,300 lots that are below lot size, vacant and not original crown titles. A significant proportion of these would be lots where a dwelling is permissible. But also quite a number may be existing holdings. But to gain full accuracy means a check of all 1,300 individual plans and their related original subdivision approval. 400 lots is offered as a conservative estimate once allowance is made for some already being counted in the 800 existing holdings estimate above and some allowance of lots without dwelling rights.

Council is progressing through a rigorous exercise to map all existing holdings and all lots approved for a dwelling under former planning schemes, so as to much simplify the determination of dwelling permissibility. However, this task may take a year or more to complete under available resources. In the meantime the approximations estimated in this section will be used to indicate current supply and guide the coming strategy.

Estimated total supply of existing vacant dwelling parcels

Test 1: Vacant ownerships over lot size	1,300
Test 2: Existing holdings	800
Test 3: Lots approved under former schemes	400
Total	2,500

2.7.3.5 Further supply from subdivision

In the RU1 and E3 zones, properties twice the specified minimum lot size or of greater area have at least hypothetical capacity to be subdivided into lots of not less than the specified lot size (currently 40 ha in the former Tallaganda Shire and 80 ha in the sections of the other former shires that made up Palerang).

But estimating this yield has many qualifications:

- Owners may not want to subdivide their existing farms;
- Challenges such as poor access and limited/costly power provision can make such subdivision unprofitable; and
- Sale price has to make the costs of subdivision and loss of land from the farm worthwhile for the subdivider. Demand/price is obviously higher closer to Canberra/Queanbeyan and conversely much lower in the south east.

The first point is not easily quantified in terms of estimating supply. The second and third points can only be quantified to any accuracy through a detailed review of most of the approximately 800 properties in the RU1 and E3 zones that are twice the specified lot size or greater (i.e. that have subdivision consideration under the current LEP standards).

Dividing the lot size area into all holdings 2 or more times the lot size derived a total hypothetical maximum subdivision lot yield in the order of 3,000 lots across the RU1 and E3 zones. (See Table 17 below).

Table 17: Subdivision potential for Lots above Lot Size

Maximum	Subdivision Yield	From 40 ha Lot Size	Area RU1 and E3 Zones
Property Size	Number of Properties	Yield Factor	Maximum Lot Yield
80 - 119.99	188	1	188
120 - 159.99	114	2	228
160 - 199.99	66	3	198
200 - 239.99	39	4	156
240 - 279.99	39	5	195
280 - 319.99	37	6	222
320 - 359.99	22	7	154
360 - 399.99	15	8	120
> 400	163	9	1467
Maximum	Subdivision Yield	From 80 ha Lot Size	Area RU1 and E3 Zones
160 - 239.99	46	1	46
240 - 319.99	19	2	38
320 - 399.99	6	3	18
> 400	64	4	256
hypothetical maximum yield			3286

But without a detailed property by property analysis (beyond the scope and budget of this report) it is difficult to reduce this hypothetical yield to something approaching real potential. **For the sake of discussion, 20% is proposed as a potential realistic yield over the 20 year life of the strategy (assuming current lot sizes remain). This would yield around 700 lots.** While the rigour of this estimate is low, it none the less points to the quite significant potential yield of larger rural hobby style lots if the current 40 and 80 ha lot sizes are retained. The accuracy of this estimate could be improved over time if Council wishes to establish a detailed Land Monitor and include a review of all ownerships with subdivision potential.

2.7.3.6 Totalling up the potential supply of dwelling parcels under the current LEP for the RU1 and E3 zones

We estimate there are 1,306 vacant ownerships above lot size.

We estimate there are a further 802 vacant ownerships under lot size and purport most will qualify for a dwelling. We list 750 as a likely number to assist supply projection.

We further estimate there are approximately 1,300 lots below lot size but approved for a dwelling. (Note: a large number of these overlap with existing ownerships and cannot be separated without a review of every assessment and lot). So we further estimate perhaps 400 of these lots are additional potential supply – not being all of an existing ownership – but stress this is an “educated guess”.

We further estimate the realistic subdivision potential based on current lot sizes to be 700 lots.

Estimated total supply potential from all options in the currently LEP for the RU1 and E3 zones is put at about 3000 dwelling parcels as summarised below:

Table 18: Estimation of current supply of dwelling opportunities in RU1 and E3 zones

Estimated vacant ownerships over lot size	1,306
Estimate of Existing Holdings under lot size	750
Estimated additional lots approved for a dwelling that are not existing holdings	400
Realistic potential supply from subdivision under current lot sizes allow	700
Total supply estimate for dwelling parcel under current LEP provisions for RU1 and E3 zones	3,156

Of these 3,100 potential dwelling parcels:

- An estimated 1,150 are smaller parcels under 40 ha;
- An estimated 1,300 parcels are existing and over 40 ha;
- Of a hypothetical 3,000 potential lots that might be created under current subdivision lot sizes, we estimate a realistic medium term yield of 700.

The reliability of these estimate is indicative and could only be made reasonably accurate by performing a complex review of all properties across the RU1 and E3 zones. If Council develops a land monitor this accuracy will improve over time. But there is some confidence there is realistic potential for over 3,000 additional dwellings in the RU1 and E3 zones just by retaining the current provisions.

Obviously, the take-up of such supply will be influenced by location, size and land characteristics. The following three maps based on current ownerships show all assessments of selected sizes, vacant assessments in these sizes and assessments with dwellings.

Map 9 All rural assessments in RU1 and E3.

This map splits the current (both vacant and occupied) rural ownerships of the RU1 and E3 zones into 4 categories:

- Under 40 ha
- 40 to 200 ha
- 200 to 400 ha
- Over 400 ha.

It shows that the smaller 2 categories (which are below full-time agricultural size, with below 40 being considered hobby scale) are widely distributed across the area, in good and rougher land but tending to have proximity to existing roads of higher standard.

The under 40 ha category is considered to mostly be hobby farm scale while the category 40 to 200 would often involve some part-time agriculture and may even be a second holding of a residential farm elsewhere.

Map 10 Assessments in RU1 and E3 that are vacant

From a current supply, spatial point of view this is the most important of the 3 maps.

It again adopts the same 4 area categories. It indicates there are far less vacant assessments of the rural residential, hobby and part-time scales in the western commuter area and quite a number in less accessible/remote parts of the LGA.

There are over 700 vacant assessments under 40 ha but probably 70% are east of a line running from Captains Flat to the midpoint between Bungendore and Braidwood. Similarly, there are over 900 vacant assessments in the 40 to 200 ha with closer to 80% east of that line. While many of these ownerships have poor

access and other high development costs, there is still a very significant potential for supply.

So vacant rural residential, hobby lots and part-time farms are not over supplied in the west but plentiful in the eastern half of Palerang.

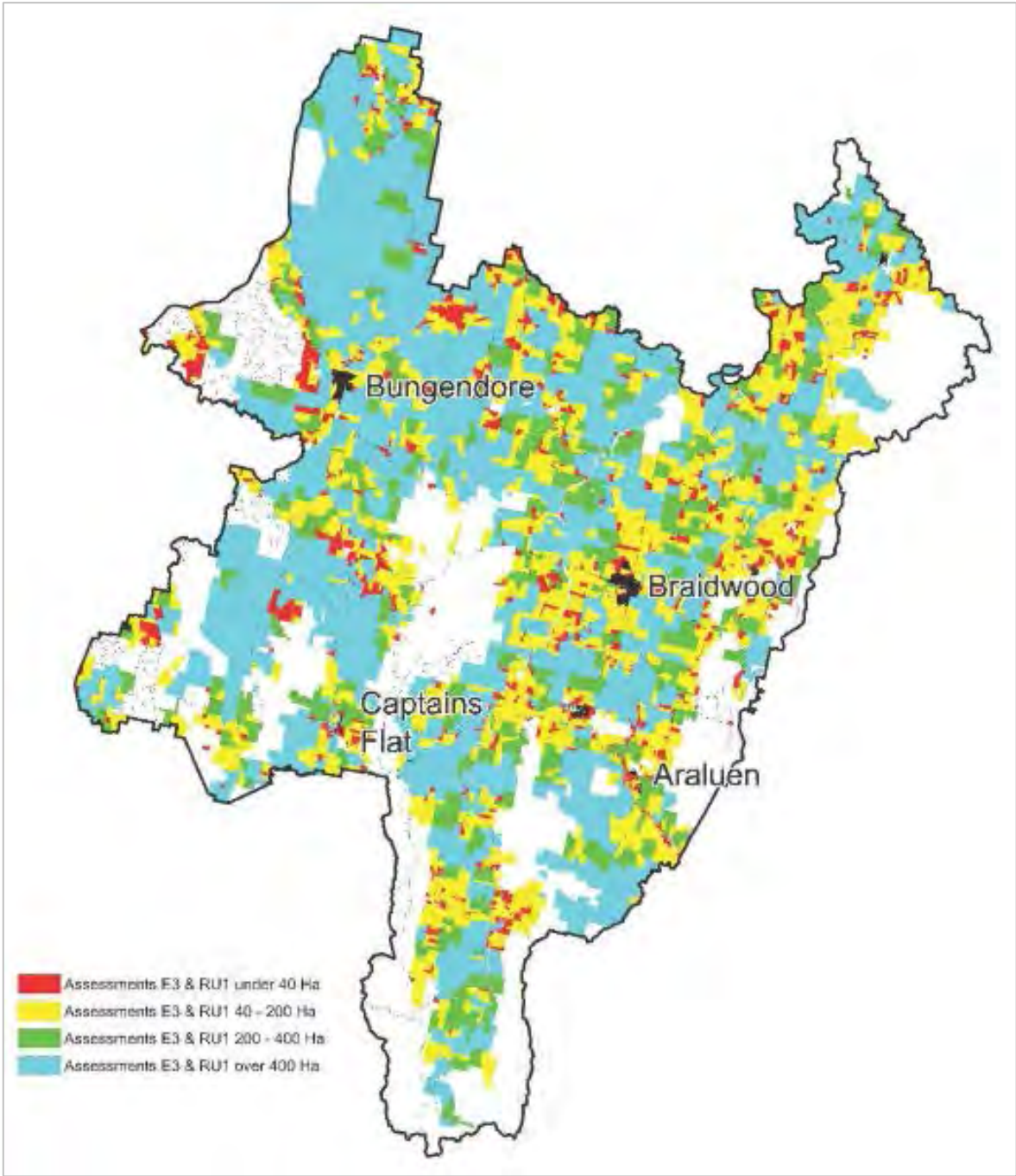
Anecdotal evidence from Real Estate Agents suggests supply of vacant rural holdings for sale is low in the western “commuter” section of Palerang. Essentially, the high demand of this district has likely consumed much of the readily available supply where development costs to establish a dwelling are not excessive.

Map 11 Assessments in RU1 and E3 with a dwelling

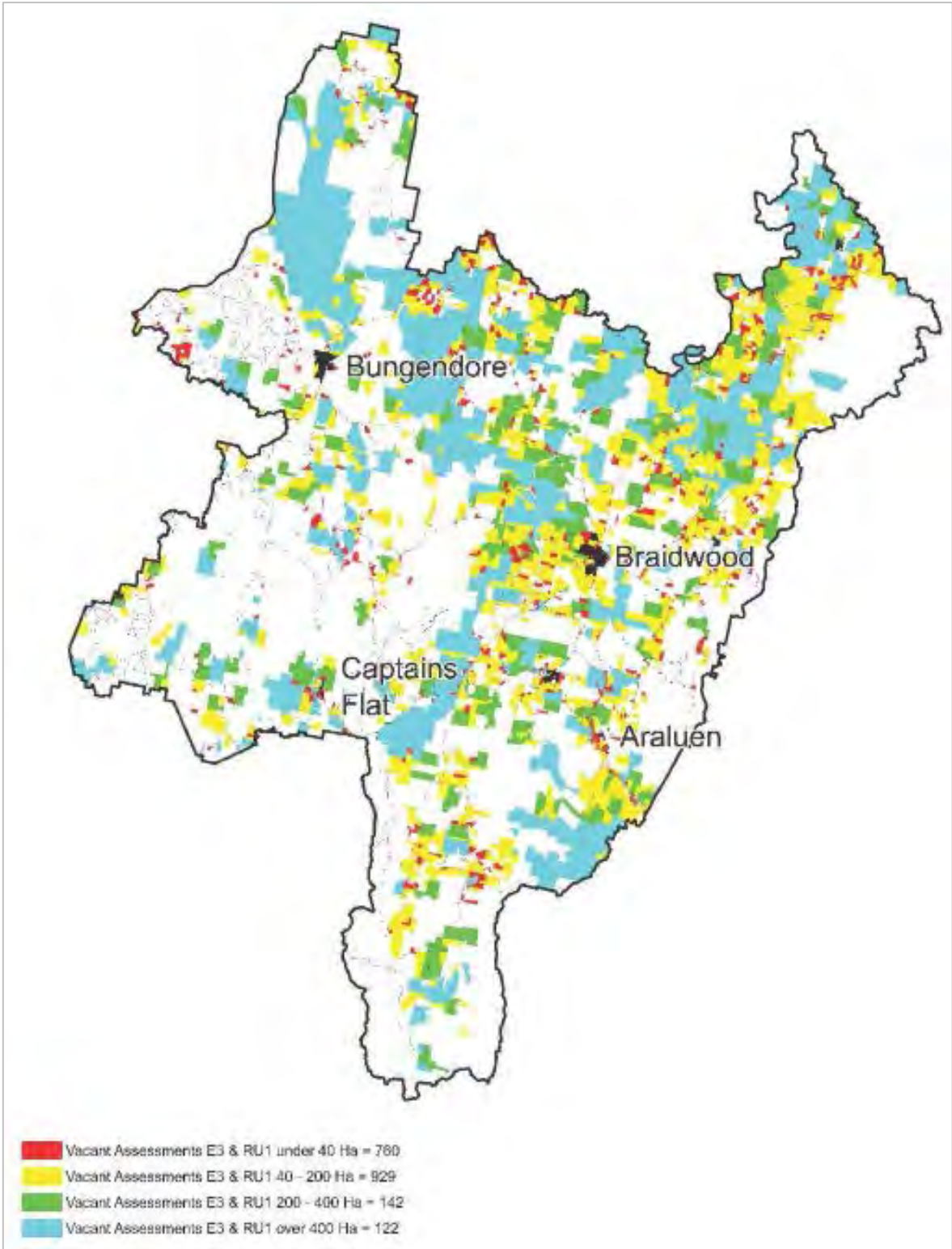
This map divides assessments into the same 4 area categories.

It confirms the usual assumption that a high proportion of the developed smaller ownerships are mostly closer to employment and settlements, on good roads, near power, etc. But while there are more in the west, there is still a scattering of smaller dwelling assessments across the area.

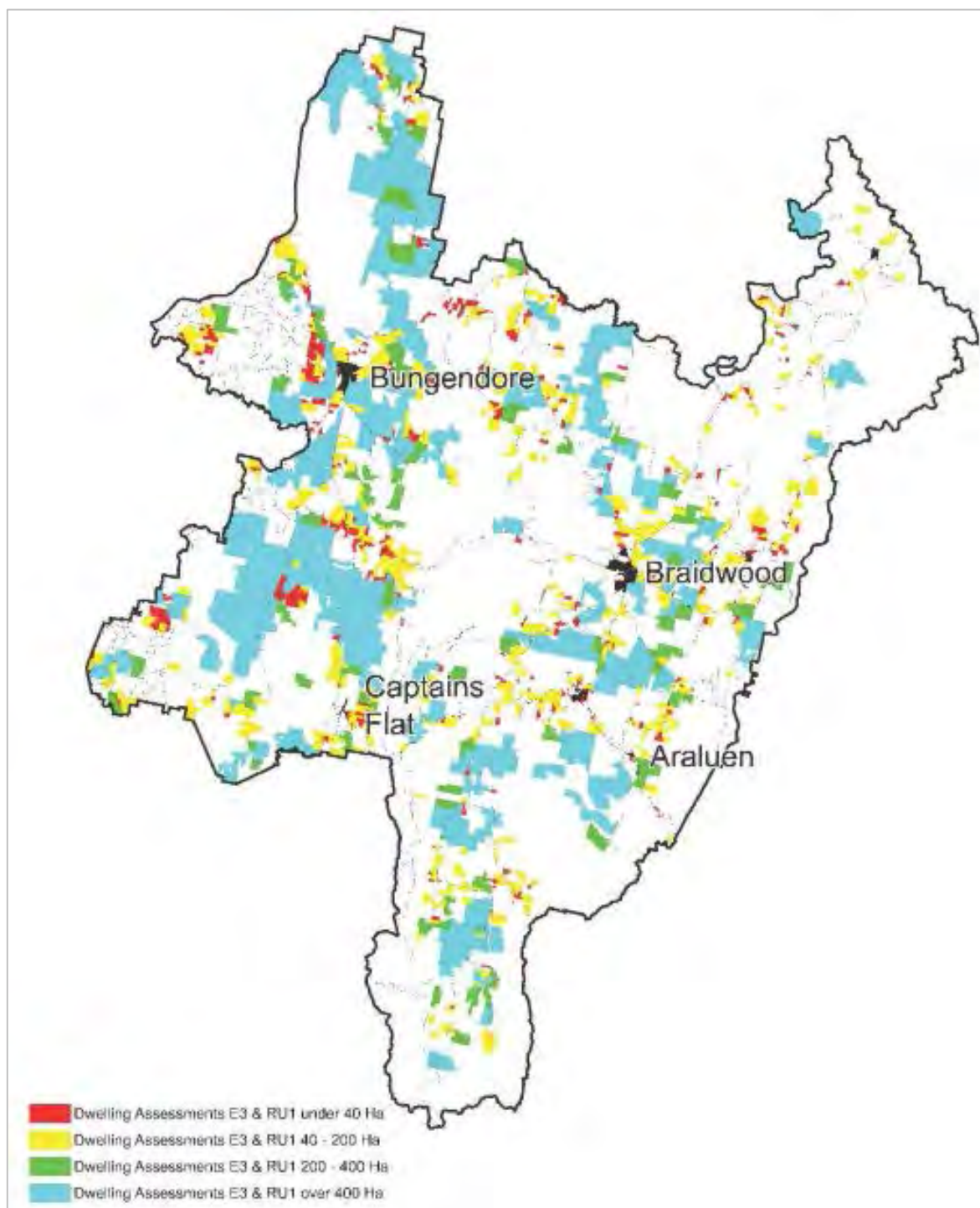
MAP 9: ALL EXISTING OWNERSHIPS IN RU1 AND E3 ZONES



MAP 10: VACANT EXISTING OWNERSHIPS IN THE RU1 AND E3 ZONES



MAP 11: EXISTING OWNERSHIPS IN THE RU1 AND E3 ZONES WITH A DWELLING



2.7.4 Fragmentation of farmland

Fragmentation of larger holdings of good agricultural land can be a land use problem:

- Often the fragmented components of previously commercial scale farms do not produce the same net value;
- A need is created to duplicate costly infrastructure such as yards, farm buildings, water supply systems; and
- Services such as roads, power and communications can be taxed and lead to burdens on other residents in the form of higher service charges.

The relatively small lot sizes of 40 and 80 ha in Palerang may be generating farm breakup/fragmentation given the demand pressure from Canberra/Queanbeyan.

As an initial indicator, Map 12 has been prepared showing all lots in the RU1 and E3 zones between area 40 and 100 ha with all lots with DP numbers starting 75 removed. In other words, all lots created by subdivision and likely capturing the nominally “40 and 80” ha subdivision lots created over time.

The map shows a wide spread of such lots across the Palerang landscape and across all land qualities.

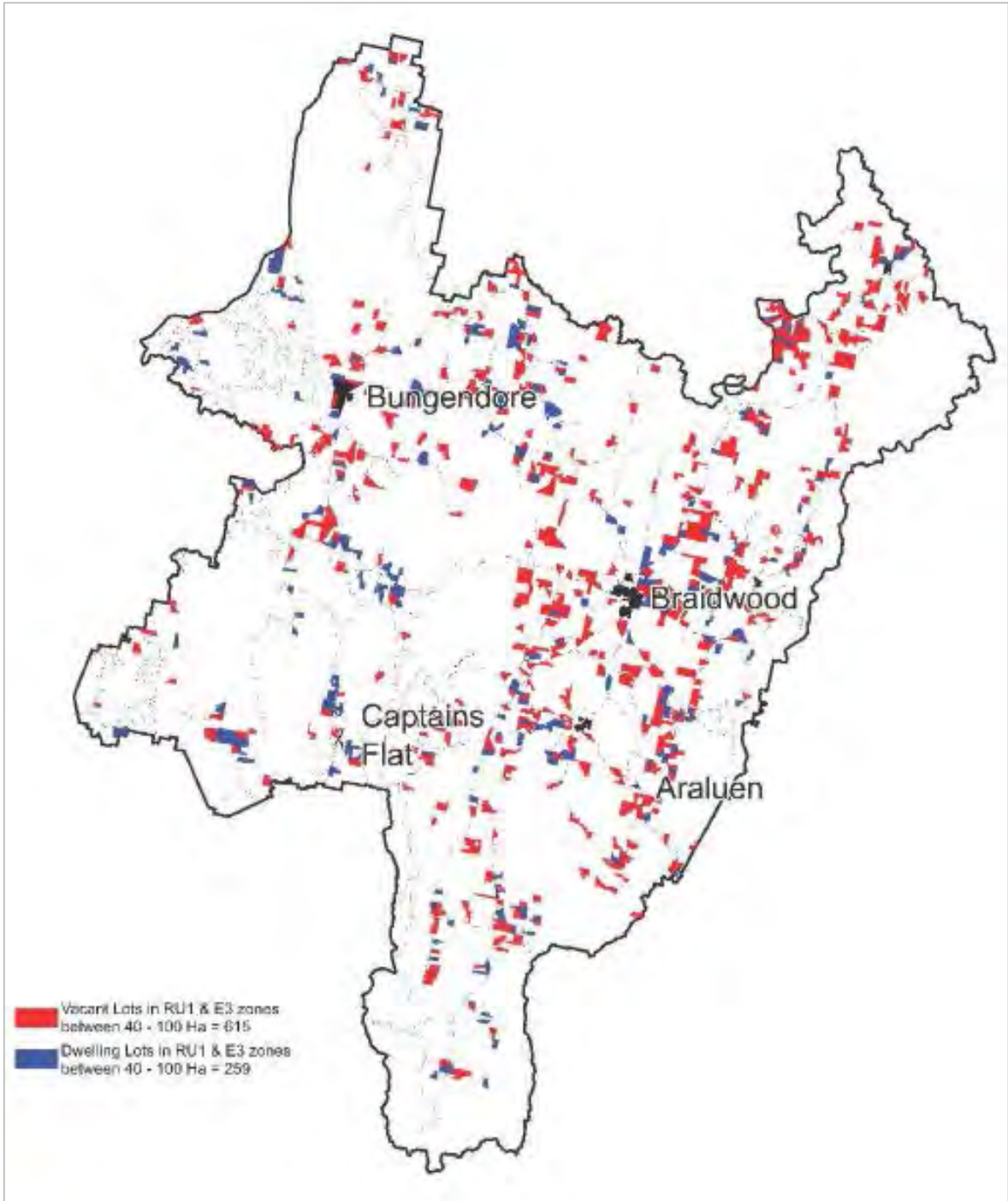
Of a total of 874 lots, 615 of these lots are currently vacant and a further 259 have dwellings.

This data has limitations as some of the lots counted would not have been created as “40/80” ha subdivisions of farms and to refine the data would necessitate a review of all individual lots which is beyond the resources of this Study.

But the figures do seem to indicate perhaps 500 plus such lots have been created since early planning schemes introduced controls like the 40 ha standard. And the spread of the lots does indicate some fragmentation of better agricultural lands.

Such fragmentation is mostly due to the availability of a relatively small lot size and a preparedness of the market to purchase smaller parcels under 80 ha for predominantly hobby uses. Creating defined E4 or similar rural residential zones can fragment or consume a small number of previously commercial farms but does not have the impact of a low lot size- where large numbers of commercial properties may be fragmented.

MAP 12: POSSIBLE IMPACTS OF FRAGMENTATION OF FARMLAND



2.7.5 Lot sizes in general rural zones of the region

The following table identifies the approach to lot size of surrounding Councils:

Table 19: Approach to lot sizing and lot averaging in surrounding Councils

Council	Lot Size	Lot Averaging	Comments
Bega Valley	120	Not in general rural	No new rural strategy changes proposed at present
Eurobodalla	1,000 LEP 2012. 40 LEP 1987.	Not in general rural	Rural Study under action. Much community debate re 1,000 ha lot size proposals.
Shoalhaven	40	No	Special clause of variable lot sizes in defined areas.
Goulburn Mulwaree	Mostly 100, some 40 and 20	Yes	Uses lower lot size for transition areas. Broad averaging provisions.
Yass	80	Yes	Restricted averaging - 40 ha minimum and 150 ha maximum. Rural study under action to review possible shift to 40 lot size with averaging from 20 to 70 ha.
Cooma-Monaro	80	Yes	20 ha minimum in averaging.
Upper Lachlan	100 part 200 part	No	Uses 200 for more remote less serviced and lower ag value areas.
Snowy	250 part 400 part	Not in general rural	Similar to upper Lachlan.
Bombala	40	No	No current proposals to change
Palerang	Part 40 and part 80	Yes in part	Rural review in action

There is considerable diversity in the approach to both lot size and lot averaging in the councils in close proximity to Palerang.

The type and structure of agriculture in the three Coastal councils above differs somewhat to Palerang. There is very limited sheep, some dairy and perhaps only in beef production is there common aspects. The other Councils above do have similar land form and rural industries.

Lot averaging in rural zones seems to be growing in popularity with 4 Councils currently providing some capacity and two others in the process of reviewing the desirability of introducing such provisions. Preliminary discussion with Department of Environment and Planning indicates some reservations with averaging in the general rural zones.

Palerang currently does not have lot averaging in the section of the LGA comprising the former Tallaganda LGA but conversely this section has the lower 40 ha standard.

Of the above councils, only Eurobodalla has any program under way investigating potentially larger lot sizes and even there the preliminary indications are for a range of lot sizes.

Yass Valley has completed exhibition of a Planning Proposal to take its lot size from 80 ha to 40 ha coupled with a minimum average of 40 ha and range of size for lots created under minimum averaging of 20 to 70 ha. As of drafting of this report, that Planning Proposal had been publicly exhibited, was the subject of objections from State Agencies and was waiting a determination from the DPE as to whether the Planning Proposal could proceed to finalisation.

Should Yass Valley succeed in achieving a 40 ha lot size, that would seem to have implications for Palerang given many similarities between the two areas.

As part of the Yass Valley Planning Proposal, an independent peer review was effected and can be viewed at:

[http://www.yassvalley.nsw.gov.au/images/documents/yassvalley/Strategic%20Planning/Yass%20Rural%20Review_Final_16June2014\(FINAL\).pdf](http://www.yassvalley.nsw.gov.au/images/documents/yassvalley/Strategic%20Planning/Yass%20Rural%20Review_Final_16June2014(FINAL).pdf) .

This independent review concludes with support for the 40 ha proposal and basically argues that the “horse has bolted” with respect to any protection an 80 ha standard may give for commercial agriculture. It draws over 20 conclusions in support of this premise. Some of the main points are:

- A range of research evidently points to lots over 16 ha often having some commercial use (i.e. not just residential).
- Land values in LGAs adjoining Canberra have already priced out commercial agriculture based on what the production can repay on the capital invested.
- 20-40 ha properties support niche emerging agriculture and are in demand (but as much for rural living as for commercial use).
- 80 ha is already well below the area for a commercial farm of at least part time income status under the traditional agricultural uses of the region (“...even farms over 1000 ha have questionable long term commercial sustainability...”). Little evidence 40 ha will make any difference to the viability or future diversity prospects of commercial agriculture.
- Little prospect of conventional commercial agriculture making a major increase to the economic prosperity of the region in the foreseeable future. Whereas small lot farming will add to the diversification that has prospects to expand the Yass Valley economy.
- The independent review could not however support all the arguments of Yass Valley in support of the 40 ha proposal:
 - It could not support the suggestion there was a lack of supply of lots for niche agriculture.
 - Growth of tourism due to smaller lots seems tenuous.
 - Could not see major economic flow on to Yass businesses from more Canberra based rural living. Most of these people would shop in Canberra.

- Little evidence true intensive agriculture needed lots below 80 ha - except for specific needs like poultry.
- Did not support the theory that the increase in land values might increase farmer borrowing capacity for commercial agricultural expansion or intergenerational transfer.
- Not convinced on the Yass evidence so far that there were environmental benefits in the smaller lots.

But then the submissions of DPI and OEH on the Yass Valley proposal present the counter argument (see <http://www.yassvalley.nsw.gov.au/planning-development-yassvalley/lep-planning-proposals-yassvalley/1161866-rural-lands-ru1-primary-production-and-ru2-rural-landscape-zones> for their submissions).

OEH points to the likely adverse impacts on remnant native habitat of the more intensive general lot development across the LGA with associated dwellings, roads, power lines fencing, cats/dogs, etc.

DPI presents a counter argument in support of its theory that 80 ha is a more effective break than 40 ha to fragmentation of remaining larger commercial farms. But interestingly, DPI is not opposed to Yass Valley trialling its 40 ha proposal in that third of the Shire closest to Canberra- an area of many close similarities to the current 80 ha minimum lot size area in Palerang.

No conclusion should be drawn yet as to the preferred lot size and lot averaging position for all of Palerang. This will be the subject of further research, community consultation and discussion. Currently there is no significant uniform theme to be gained from the other Councils of the surrounding region. But the work in Yass Valley does require detailed review and monitoring of outcomes as the Palerang Strategy develops.

2.8 PALERANG RURAL RESIDENTIAL SETTLEMENT

2.8.1 What defines rural residential from part-time and full-time professional agriculture?

See also the discussion on this topic in Section 2.7.3.1 and 2.7.3.2 above.

It seems clear that there is a significant market for rural living lots of just a few ha where extensive style agriculture is either absent or truly of a hobby nature. The dominant development in the E4 zones falls in this category.

Such lots are of an estate style across this zone while those purely rural living lots in the RU1 and E3 zones tend mostly to be scattered individual lots.

Zone terminology

Because of the absence of a standard instrument land use zone that is directly equivalent to the Yarrowlumla LEP 2002 1(d) Rural Residential zone and the Tallaganda LEP 1991 1(c) Rural Small Holdings zone, Palerang Council has used the E4 Environmental Living zone in the PLEP 2014 for land that has traditionally been referred to as 'rural residential' zones.

Some residents have raised concerns that the E4 zoning imposes additional environmental controls over what was previously rural residential land. While there are stronger environmental objectives in E4 as opposed to the 1(c) zoning of previous Tallaganda plans, the objectives of the former Yarrowlumla plans over the 1(d) zoning had a strong environmental emphasis. The permissible uses are very similar and no reasonable use formerly permissible has been prohibited by E4 zoning.

The real impacts of the E4 zoning as compared to the previous rural small holding zones are considered very minor.

The E4 objectives are a check to ensure reasonable amenity of what are primarily rural living areas with environmental qualities, are reasonably protected.

The only alternative zone category available from the Standard Instrument is the R5 Large Lot Residential Zone. This is a residential zone and Council has applied it to true large residential areas as part of urban development with reticulated services.

2.8.2 Demand for Rural Residential lots

Potential sources for statistics on demand in the E4 zones:

- Occupation certificates for new dwellings by area over time.
- Subdivision certificate lot numbers by area for 10 years.
- Possibly LPI may have historic cadastre – say 10 and 20 years past to coordinate in GIS and compare with current.
- (Council is progressing towards assembly of statistics as above as resources permit but availability may be beyond the Study timetable).

- Examination of past aerial photography to estimate new dwellings over time. (This has been actioned and reported on below.)
- Use ABS population changes divided by average occupancy rate to get new dwellings. This is presented below:

Table 20: Dwelling Growth 2001 to 2011 in the west Palerang rural small holding areas

Locality	Dwellings 2001	Dwellings 2011	Increase	% Increase
Wamboin-Bywong & District	1,032	1,354	323	31.3
Carwoola-Burra & District	573	856	283	49.4

(Source: <http://profile.id.com.au/palerang>)

Table 20 indicates there has been substantial growth in housing across the E4 zones of Palerang of about 600 dwellings in the 10 years from 2001 to 2011. 60 dwellings per year average. There is a significant qualification in this data in that parts of the above districts, following the Council amalgamations in 2006, are now in Queanbeyan LGA. (See the further discussion and DA statistics below).

Within Palerang’s principal rural living localities, dwelling growth between 2001 and 2011 was greatest in the Carwoola-Burra locality. This trend was also matched by the population growth between 2001 and 2011 in Carwoola-Burra being 61.5% compared to 33.4% for Wamboin-Bywong. However, the indication is that Wamboin and Bywong saw substantial uptake pre 2001 and as such supply volume and choice is now more limited in those two districts.

Most of the dwelling development in the E4 zones has been detached housing and usually of 3 bedroom scale or larger.

There is a growing proportion of 2 person households (over 36% in 2011) and an aging demographic.

But in 2011 there was over 20% of households with 4 persons – indicating families with children and possibly a pattern of elderly owners selling to families as they reach an age where management of a small holding is too challenging.

Cross check and further detail from aerial photographs

As a cross check, a survey was effected on the existing E4 zones using aerial photography mostly of age 10 plus years older than currently available photography and from that data table 21 (next page) was derived.

The following conclusions are drawn from this table:

- Aerial photography has accuracy limitations given a range of dates and accuracy as to age of photos and in interpreting large sheds from dwellings.

- While the aerial photo periods differ between 11 and 5 years apart the figures still show strong annual housing growth of: 88 dwellings a year across all E4 zones.
- For Burra and Bywong districts the photos tally about 67 dwellings a year which compared reasonably with the census rate for those localities.
- Uptake in E4 zones more distant from the Canberra market was much lower with rates around 1-2 dwellings per year.

Council dwelling DA data

Council's DA register was interrogated for the period from amalgamation (July 2004) through to December 2014. An annual average of 26 dwellings were approved across all E4 zones in that period.

Preliminary demand conclusions

As detailed in Section 2.7.3, there are a number of qualifications and risks in projecting past consumption of land forward as demand.

The ABS and aerial photo interpretation indicated an uptake of E4 lots in the order of perhaps 60 to 80 lots per year – certainly for the first decade of the 20 year projections of this Study. But this data includes considerable areas now part of Queanbeyan following the 2004 amalgamations.

As such, more reliance is placed on the DA dwelling statistics at this stage i.e. say 30 dwellings pa. This also seems to fall in line with a staff observed trend of some decline in demand for E4 lots over the past decade.

Further development and ongoing maintenance of a land monitor would allow both more accurate projections and yearly comparative data to be assembled over time.

However, for the purposes of this report, an annual demand of 30 lots is estimated.

Table 21: Estimate of dwelling growth in E4 zones using aerial photography

Locality	Lot Size	Lots Above x 2	Current Vacant	Current Dwellings	Previous Dwellings	Difference	Aerial Photo - Latest	Older Aerial Photo	Years	Dwellings/Year
Araluen	6	0	36	35	9	26	Araluen 2014	2003	11	2
Braidwood North	2	14	35	32	21	11	Braidwood 2014	2003	11	1
Braidwood South	2	16	8	21	14	7	Braidwood 2014	2003	11	1
Burra	6	157	88	404	207	197	Michelago 2008	2003	5	39
Urila	6	46	10	41	37	4	Michelago 2008	2003	5	1
Googong	10	0	1	0	0	0	Canberra 2008	2003	5	0
Bywong	6	123	91	407	351	56	Canberra 2008	2003	5	11
Wamboin	6	80	102	543	477	66	Canberra 2008	2003	5	13
Lake George	6	5	1	8	8	0	Canberra 2008	2003	5	0
Bungendore	6	12	4	32	26	6	Canberra 2008	2003	5	1
Sutton	6	37	21	117	63	54	Canberra 2008	2003	5	11
Carwoola	6	72	31	286	263	23	Canberra 2008	2003	5	5
Hoskinstown	6	1	1	13	13	0	Canberra 2008	2003	5	0
Manar	4	0	1	19	7	12	Braidwood 2014	2003	11	1
Mongarlowe	6	14	0	32	11	21	Braidwood 2014	2003	11	2
Nerriga	6	6	6	5	5	0	Ulladulla 2013	2003	10	0
Rossi	6	0	1	11	10	1	Braidwood 2014	2003	11	0
Totals		583	437	2006	1522	484				88

2.8.3 Supply of Rural Residential Lots in the E4 zones

An important component of resolving land use needs for future rural residential living in Palerang, is to gain an appreciation of current available supply. To do this the existing E4 and R5 zones have been surveyed to both estimate the current number of vacant rural residential lots and to estimate what realistic subdivision potential may remain in the larger lots.

There are qualifications on the accuracy of the data which are identified below but the overall conclusions as to available supply are considered sufficiently robust to make an informed decision on any further supply requirements for the coming 20 years. To further improve the accuracy of this data is beyond the resources of this Rural Land Study project but over time Council may be able to resource a more comprehensive land monitor.

2.8.3.1 Current vacant lots in the existing E4 and R5 zones

Council GIS information was utilised to extract the following table:

Table 22: Current vacant lots in the existing E4 and R5 zones

Locality	Current Vacant	Current Dwellings	All Lots
Araluen	36	35	71
Braidwood North	35	32	67
Braidwood South	8	21	29
Burra	88	404	492
Urila	10	41	51
Googong	1	0	1
Bywong	91	407	498
Wamboin	102	543	645
Lake George	1	8	9
Bungendore	4	32	36
Sutton	21	117	138
Carwoola	31	286	317
Hoskinstown	1	13	14
Manar	1	19	20
Mongarlowe	0	32	32
Nerriga	6	5	11
Rossi	1	11	12
TOTALS	437	2006	2443

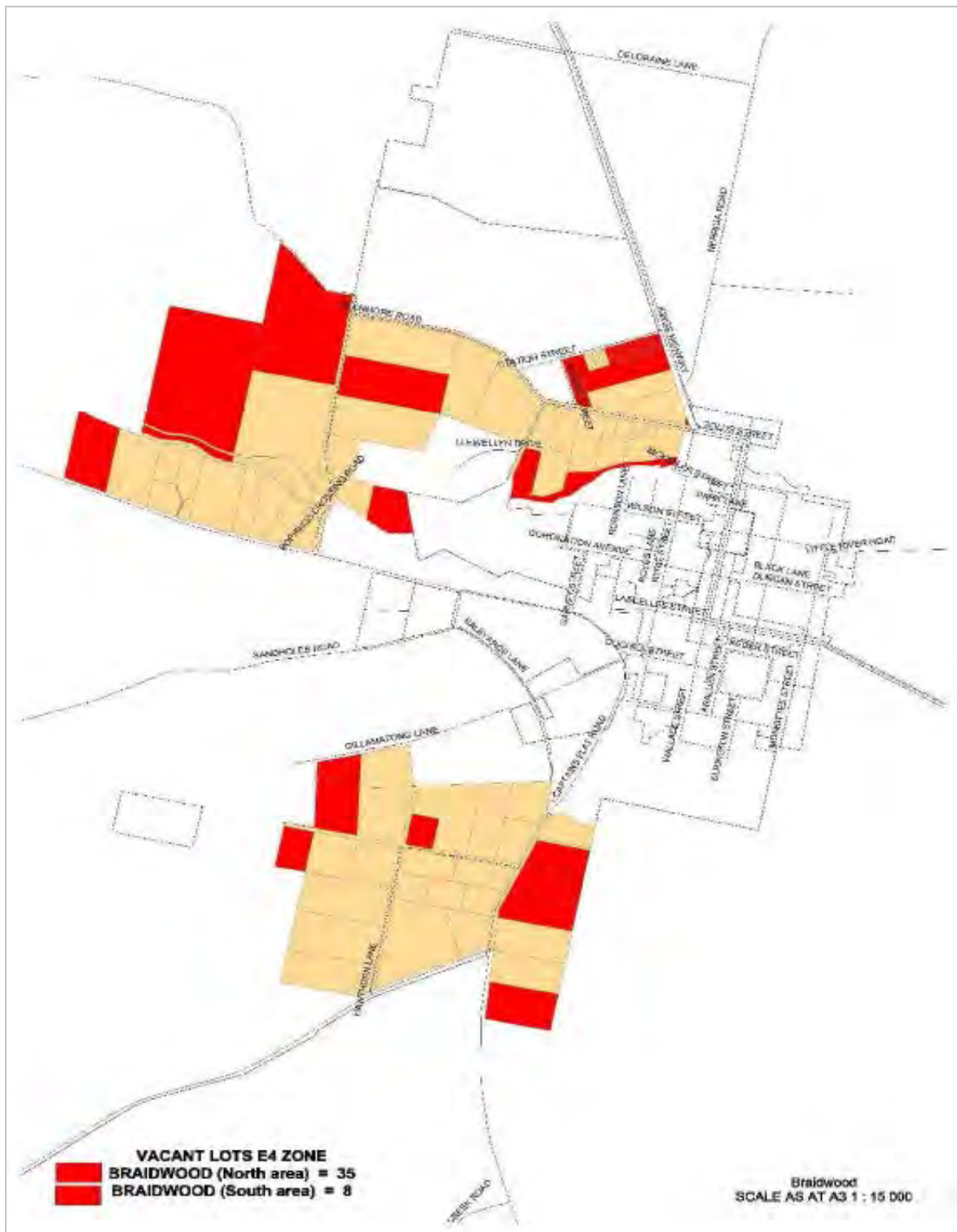
The table shows that there are currently 2,443 rural residential lots in the E4 and R5 zones of Palerang of which 437 are vacant lots zones and the remaining 2,006 other lots containing a dwelling. Many of the remaining vacant lots have access, bushfire and other constraints that lessen the real supply potential.

The dwelling locations were determined using aerial photography so have some limitations as to accuracy and miss most recent constructions of the past year or 2 given dating of the photography. To improve on this accuracy would necessitate a lot by lot inspection and will not greatly affect the supply conclusions at Council wide scale.

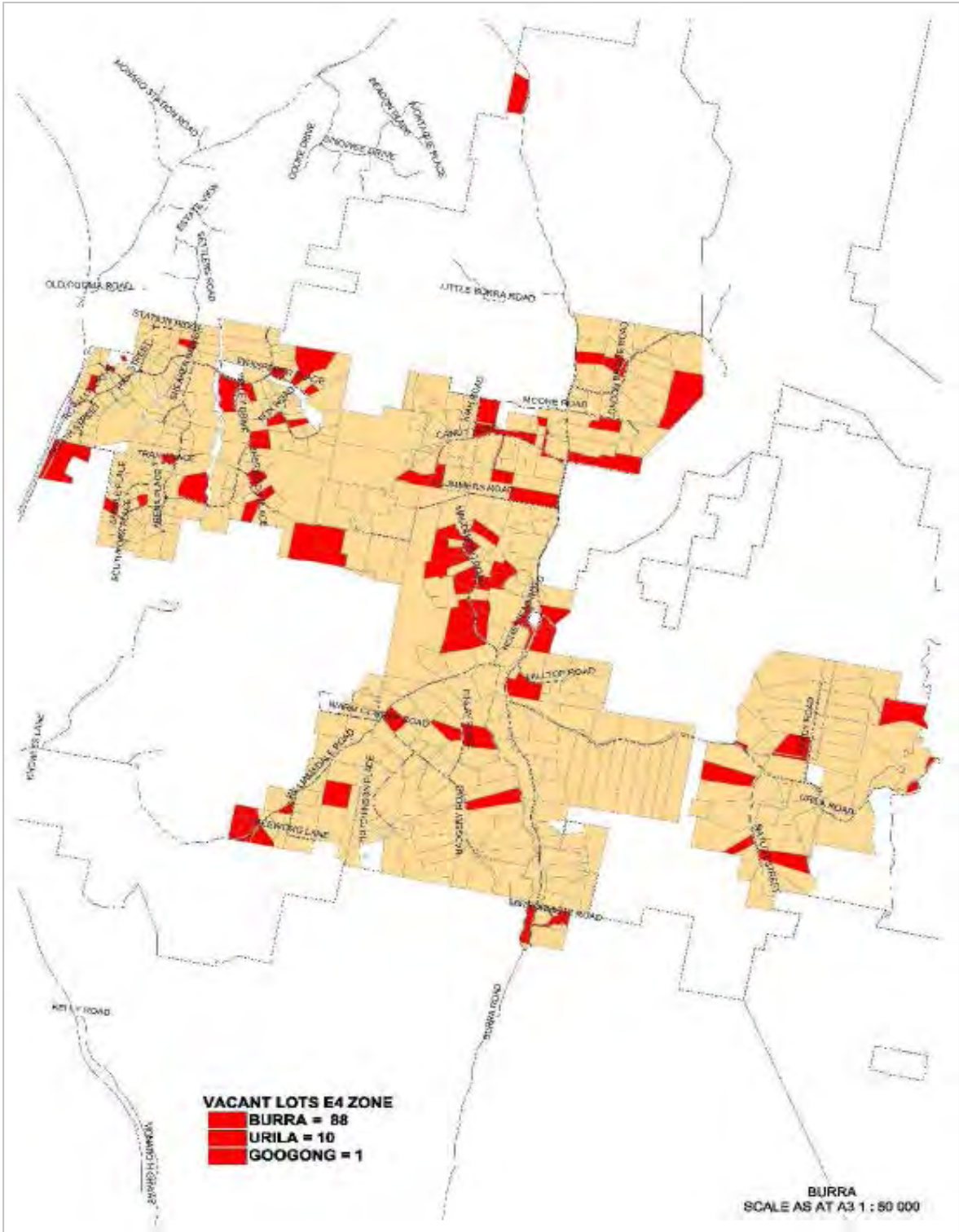
Mapping depicting the mix of vacant and developed lots in the current E4 zones is presented at the end of this section.

Observations and conclusions on supply and demand are provided in Section 3.1.

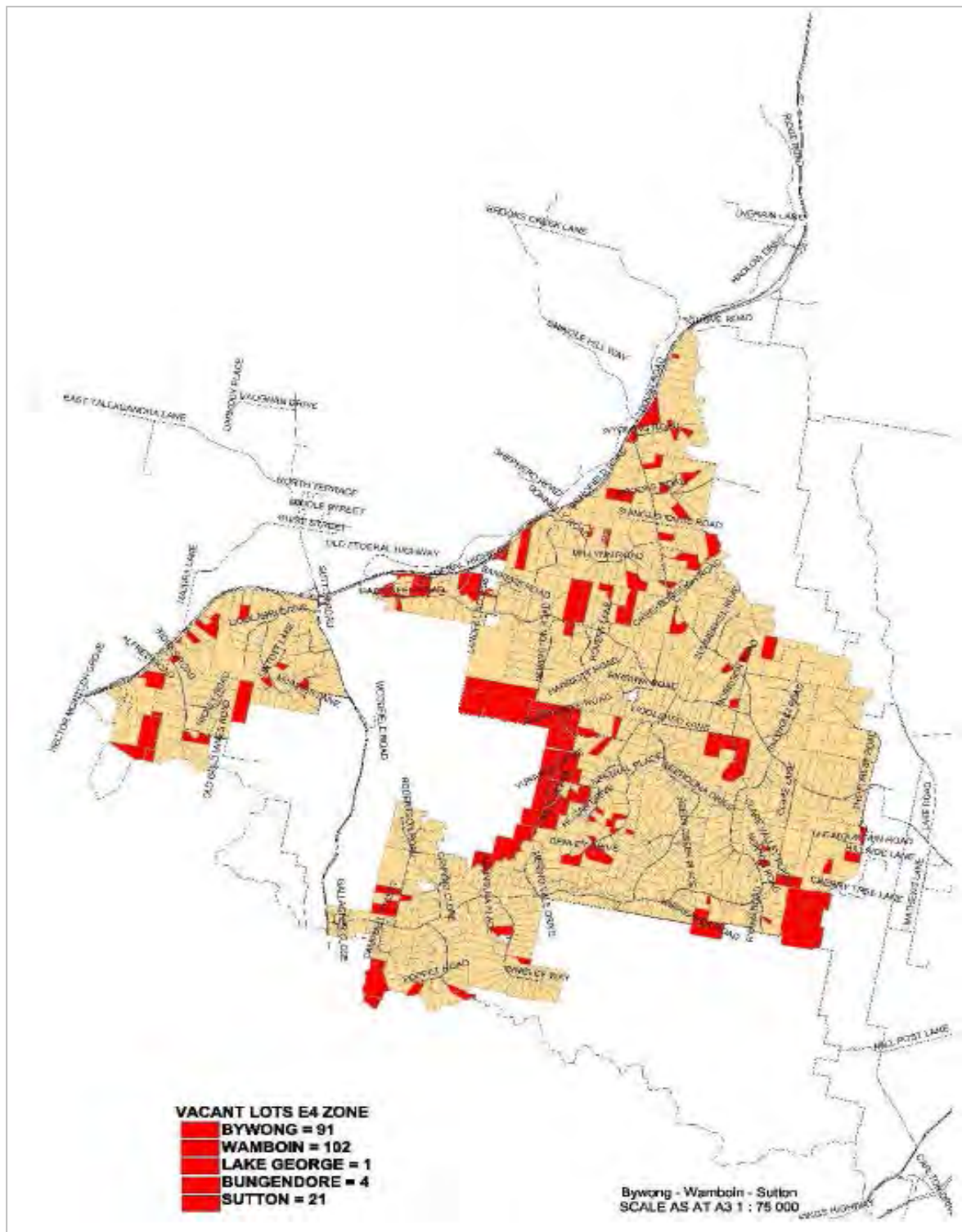
MAP 14: BRAIDWOOD E4 ZONE



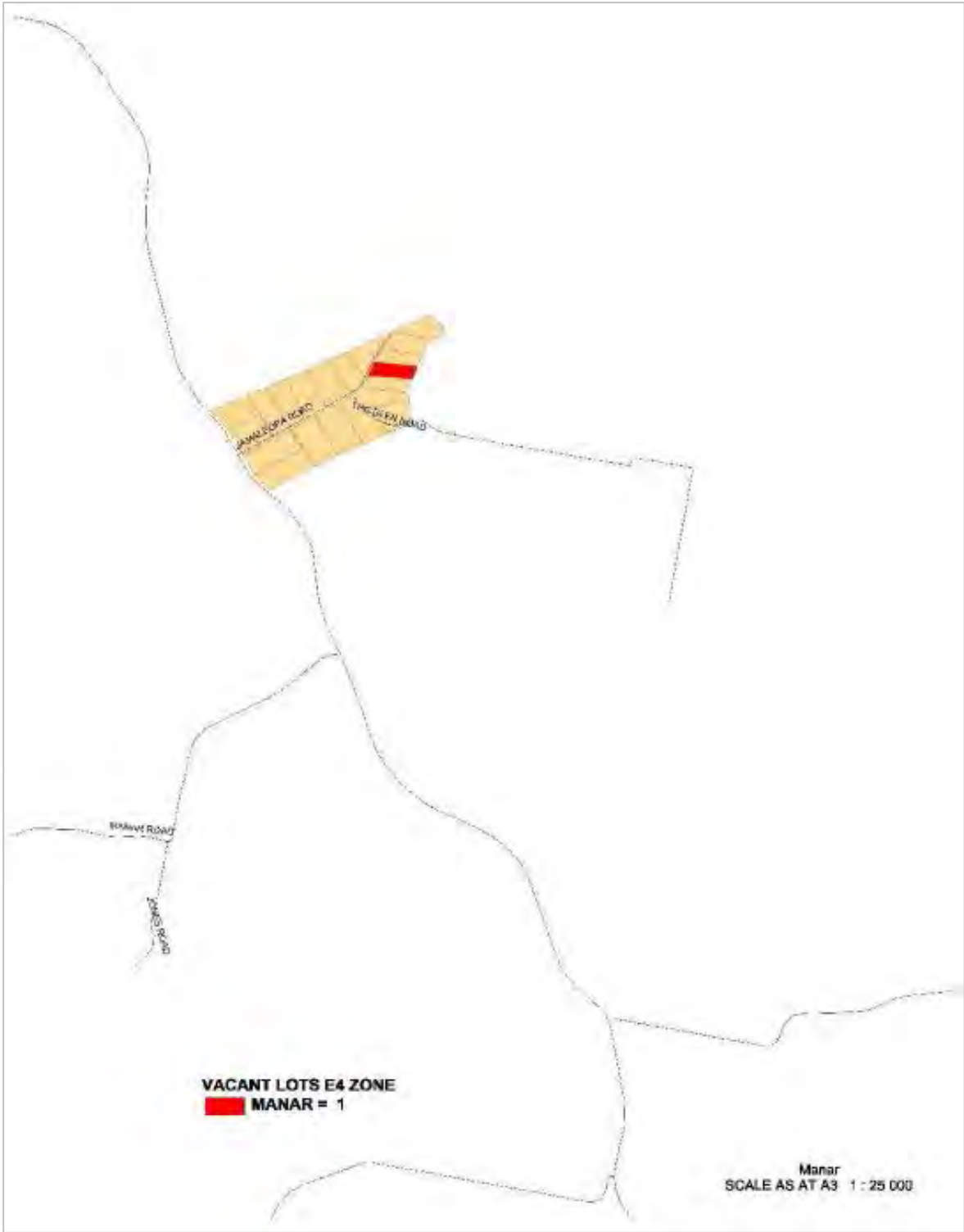
MAP 15: BURRA E4 ZONES



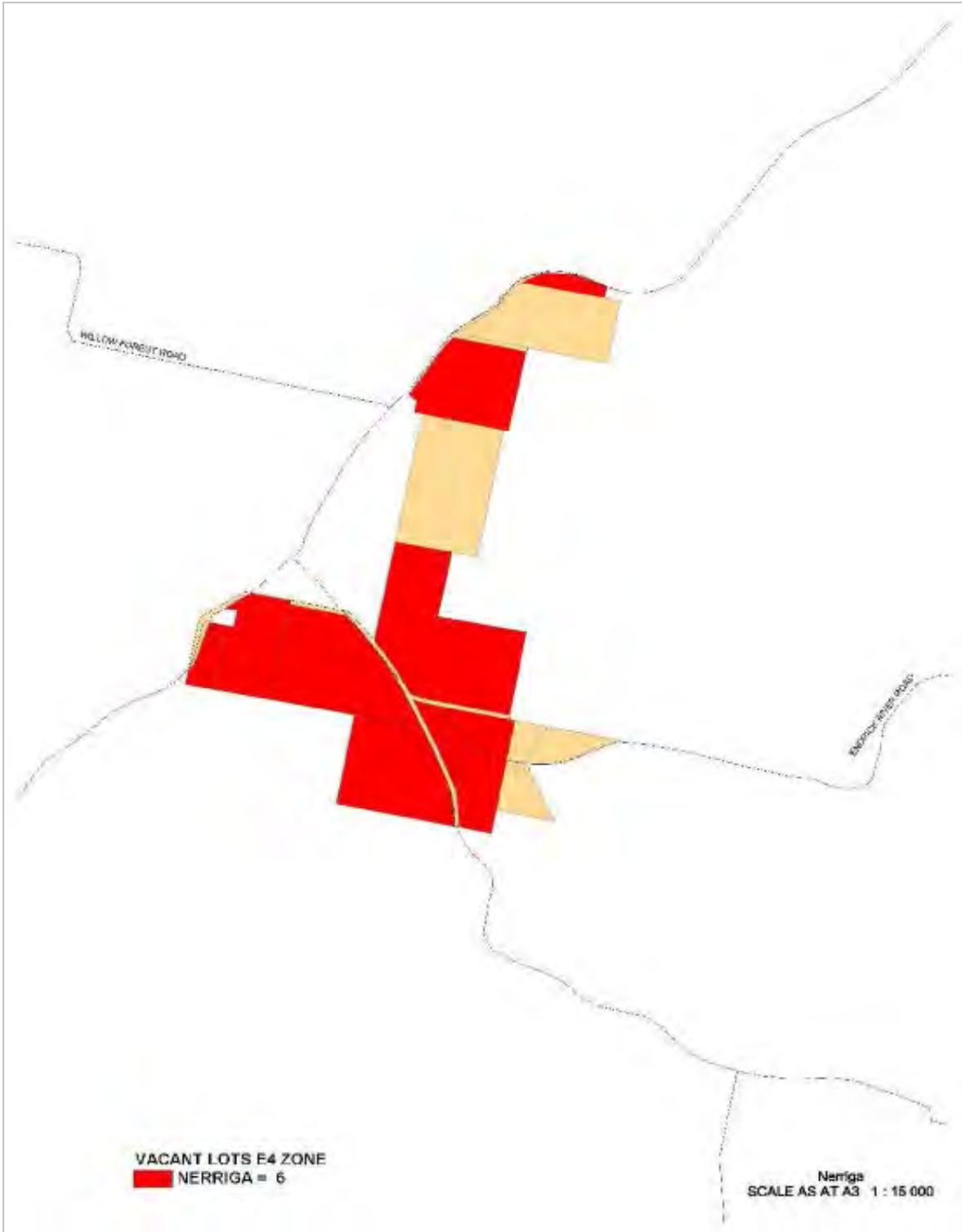
MAP 16: BYWONG/WAMBOIN/SUTTON E4 ZONES



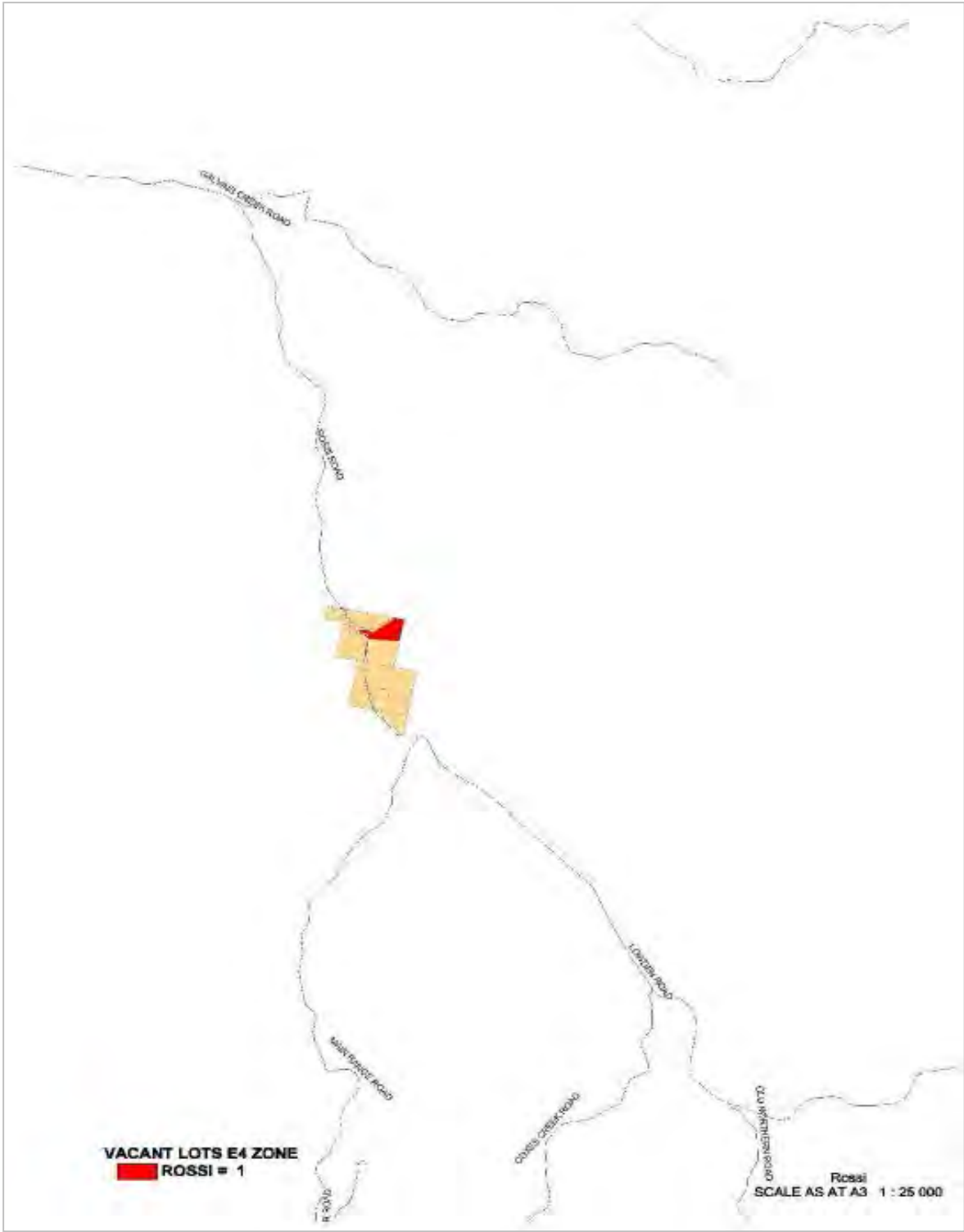
MAP 18: MANAR E4 ZONE



MAP 20: NERRIGA E4 ZONE



MAP 21: ROSSI E4 ZONE



2.8.3.2 Subdivision potential in current E4 zones

Most of the E4 zones have a lot size of 6 ha minimum average. So to be counted for potential subdivision, an existing lot would generally need to exceed 12 ha.

Hypothetically, this can give significant yield as many lots are over twice the lot size and the lot averaging provision allows easier subdivision as smaller lots can be clustered where servicing is cheaper. But the realistic yield will likely be significantly less due to several factors:

- A proportion of larger lots are residues from former subdivisions involving lot averaging and as such have no further subdivision potential. Unfortunately, Council currently does not hold ready statistics on which larger lots cannot be further subdivided and this is a further possible task for a land monitor program;
- There are many small ownerships and an unwillingness to subdivide;
- Access and topographic constraints;
- Bushfire requirements;
- Water and septic considerations; and
- Other DCP standards and considerations applying to DAs.

As such, both a hypothetical yield and our estimate of a more likely yield are shown in the table below.

Table 23: Estimating subdivision yield in the E4 zones

E4 Zone	Hypothetical yield	Likely yield
Sutton	73	30
Wamboin/Bywong	76	50
Carwoola	78	40
Lake George	8	5
Hoskinstown	1	1
Urila	27	10
Nerriga	16	12
Braidwood North	29	12
Braidwood South	33	10
Mongarlowe	40	25
Burra	170	50
Totals	551	245

2.8.3.3 Summing up current supply

The current E4 supply involves both the total current vacant lots and some reasonable estimation of subdivision potential.

The current vacant lot yield of 437 has reasonable reliability. It has been derived from aerial photo interpretation but some field tests have indicated about an 80 to 90% accuracy.

The estimate of subdivision potential of 245 lots from the above table is not highly reliable as the proportion of larger lots no longer able to be subdivided has yet to be summarised and requires some resources to determine.

An overall supply estimate of 682 is concluded from the above data but may have error margin of 100 to 200 lots. There is reasonable confidence in stating there would be 200 existing vacant lots and ready subdivision potential for 100 lots.

More recent uptake seems to be under 40 lots per year but patterns of demand have gone as high as 60 or more lots per year. It seems ready supply is now under 10 years and may lack numbers of higher quality lots. Subject to the community, Council and relevant State agencies seeing merit in continuing to supply E4 lots, it appears identification of further target areas in this Study for E4 subdivision, is warranted. But this also needs to be reviewed in the light of supply from other Council's surrounding Canberra.

2.8.4 Rural Residential Trends in the Region

From discussion with surrounding councils, it appears only Yass Valley has existing supply and possible potential supply under investigation of any significance with respect to proximity to Canberra and hence "competition" with Palerang.

Preliminary discussions with Yass Valley Council have identified that Council is currently reviewing its supply of vacant rural residential lands as part of its Demography and Spatial analysis program. Yass Valley has reviewed the subdivision potential of its current R5 and E4 zoned lands in the east of the LGA and advises:

- At Murrumbateman there is potential for about 50 rural residential lots of average area 2 ha.
- At Yass there is capacity for about 80 rural residential lots of varying sizes up to about 16 ha.
- Also at Yass are some larger un-subdivided parcels of E4 zoned land with capacity to yield around 250 lots of average size 8 ha.
- The estimated dwelling capacity for Gundaroo and Sutton across RU5, RU4, R2 and R5 zones is 50 lots.

The strategic intent at Yass Valley is to likely continue to supply more rural residential at rates comparable to the uptake of the past 10 years.

There would appear to be benefits in all the Councils surrounding Canberra to pool information on available supply and intentions regarding further rezoning. Essentially a combined land monitor might be considered?

3 ISSUE IDENTIFICATION AND PRELIMINARY EXPLORATION OF OPTIONS

3.1 SUPPLY AND DEMAND FOR RURAL SMALL HOLDINGS AND LIFESTYLE BLOCKS

3.1.1 Introduction to supply and demand discussion

Section 3.1 explores the issues and options for supply and demand for rural living and lifestyle blocks, both as estate style development in the E4 zones and as rural living or hobby scale agriculture in the RU1 and E3 zones.

There are qualifications on the precision of the data in this section and these are detailed where data is presented. To improve on the precision of this data is beyond the current resources of Council but may evolve as part of a land monitor program. The data gathered to date are considered adequate to make the strategic decisions about supply and demand needed for the coming 20 years. Future monitoring might feed into reviews and adjustments to supply at perhaps 5-10 year intervals.

3.1.2 Rural residential estate living – the E4 Environmental Living Zones

Council has adopted a position that the E4 zone will address the estate style rural residential needs of Palerang.

Some R5 (large lot residential) zoning exists and more may be planned as part of the urban fringes of settlements but as fully serviced estates. This study does not focus on urban issues so R5 type land supply is being addressed in Council's urban strategies.

3.1.2.1 Demand for E4 lots

Council is assembling data on past subdivisions and rates of building approval across the rural zones. But this is a substantial task and while of benefit as part of an ongoing long term land monitor, other approximations need to be made for current regional level planning across Palerang.

This report has used a mix of census data, available GIS records and aerial photography to draw the data from. (See Section 2.8.)

The following points relevant to small holding demand have been obtained from discussion with local real estate agents:

- Not a great number of the current vacant lots are “available” i.e. owners are retaining them as either long term investments or longer term sites to build on for their retirement or when affordable and so are not listing for sale.
- No real new estates left of any size or quality.
- There seems to be a resistance line beyond which demand for rural residential and hobby farms from those seeking to commute to work in Canberra/Queanbeyan drops markedly. It is suggested that line is within 40 minutes average driving time. This roughly equates with west of Captains Flat and about half way between Bungendore and Braidwood. There are exceptions but still a fairly dramatic drop in demand as evidenced by slow sales at Braidwood and east for other than the “weekender” market.
- The eastern areas of Palerang have a much higher proportion of weekender use and lower permanent living demand.

Projecting demand from past uptake

West of Bungendore/Captains Flat, the lot uptake over the past decade as estimated from Section 2.8.2, is about 80 dwelling lots per year.

In the E4 zones east of this line the uptake seems about 1-2 dwelling per year. (Most of the non-urban growth in this region is occurring in the RU1 and E3 zones on larger lots).

But those statistics include areas now in Queanbeyan City. Recent DA statistics suggest a LGA wide E4 building rate of around 30 dwellings per year.

There are a number of factors that may vary the projected demand for the next 20 years compared to the uptake of the past 10-20 years:

- The growth rate of Canberra/Queanbeyan may change, currently there is a focus on cost cutting in Federal public sector and this may slow demand if employment in this sector decreases significantly. Recent DA numbers seem to confirm this trend.
- The supply of the other LGAs that adjoin Canberra:
 - Currently only Yass Valley seems to be moving to some more E4 style supply of any consequence but from discussions with planning staff of that Council it seems the rate of supply will not be higher than it has been in the past 20 years.
- Demographic and other trends in the style of housing sought:
 - The ageing population may not seek as many rural residential style opportunities?
 - Living on a small rural acreage may become less fashionable?
- Past uptake commenced from a low base and now a mass of E4 housing stock is emerging from 30 plus years intensive development and the demand variables above can mean that stock at times may lessen demand. For example: a rise in existing dwellings for sale may result if the aging population

means larger numbers of retirees move out as they no longer can manage rural lifestyle property.

Issue 1: Demand for E4 style lots.

Possible strategy response to Issue 1:

The preliminary conclusion for discussion with the community is that it seems prudent to plan for similar uptake of E4 lots to that which has occurred over the past decade – at least for the next 10 years but to keep monitoring trends.

On that assumption about 30 lots per year might be taken up in the west while only 1-2 per year in the east. But there are also indications of higher demand in the periods a decade or more ago and it is possible a boom in demand may return in the next 20 years.

Summary of Demand issues (note more discussion on these issues is presented in Section 3.1.4).

1. What contribution would more E4 make to Palerang?

Possible positive contributions:

- Increasing rate base/income for Palerang.
- Community diversity – E4 people not reliant on agriculture and many employed securely outside of Palerang.
- Diversity in living opportunities.
- Possibly addressing regional demand/desire for rural living i.e. needs of Canberra.

Possible negative impacts:

- Demand almost exclusively in west 1/3 of Palerang. Perceptions of disadvantage and “2 communities” by people in central and east Palerang.
- Fragment more rural land into sizes less likely to have real commercial agricultural production.

2. What is the scope of Council’s role in controlling E4?

- Hypothetically if Council and Department of Planning and Environment agree, supply can be limited. For example, decisions can be made not to zone further land and to even reduce density provisions on current zones.
- In theory land use planning could adopt one of 3 models:
 - Let the market rule – basically keep rezoning to address uptake.
 - A more selective supply with environmental and social focus.
 - Constrain supply.

The next stage of the study process will allow Council and community exploration of these options.

- Currently there seems to be no specific regional strategy on supply/demand for either E4 or hobby farming. There is the overall DPI philosophy of protecting agricultural lands and containing rural residential expansion. But it currently does not have a precise expression at Palerang scale – one of the possible tasks for this Study.
- Pressure for rezonings is likely to be ongoing – it is profitable and demand is strong.
- The attitude and policy of other councils bordering Canberra will have external influences mostly outside Palerang control. Current indications are that only Yass Valley seems to be moving to provide more E4 style lots and possibly only at a similar scale to the past 20 years uptake.

3. *If more E4 is to be zoned where to place it?*

- There are water supply and quality issues emerging in catchments with significant E4 development.
- Sprinkle theory i.e. site clusters of perhaps 10 or 15 small E4 style lots amongst larger lots – targeting fragmented areas. This may have some positive rural living advantages in contrast to the “sprawling estates”. For example, more rural vistas compared to the semi-urban feel of large areas of “2 ha” lots. Clusters could utilise existing roads and services and contribute funds towards road upgrade backlogs in areas already fragmented.
- If the rate of past uptake is to continue for the next 20 years there would seem to be no need to zone more E4 supply for over 10 years in the east and perhaps 5 years in the west but perhaps deliver around 1,000 further lots in the west between years 5 and 20. There may be a need to focus on undeveloped water catchments but then the adverse catchment impact spreads to the new catchment(s).
- If the uptake of E4 in the west continues at the rate of the past 20 years, a situation may evolve where suitable land to add to E4 becomes difficult to find. This is especially so if planning issues such as catchment protection, landscape conservation and retaining larger agricultural properties are to be addressed.

3.1.2.2 Supply of E4 lots

General E4 supply discussion

This discussion on E4 supply focuses on establishing a position as to current supply and location. The quantum and location of future supply required in Palerang for the 20 year projections of this strategy will flow from resolution of the issues and options in the demand section above and Sections 3.1.3/3.1.4.

E4 supply issues

3.1.2.2.1 E4 Supply Issue 1: Count of vacant existing lots

The data for vacant existing lots relies on aerial photo identification and as such will have an error rate but not considered to be beyond perhaps +/- 5% as tested by field sampling a few areas.

There is a reasonably large supply of existing vacant lots in the E4 zones.

Of a total of 2,443 existing lots, **437 or 18% are vacant.** (See Section 2.7.3.1).

Location of this supply is also relatively even. Most western localities, where demand is higher, have vacancy rates between 10 and 15%. Bywong, Wamboin, Sutton and Carwoola total 245 vacant lots currently. From the demand analysis in Section 3.1.2.1 above and in 2.8, the annual average uptake of lots has been approximately 80.

More easterly, there is evidence from agents and Council subdivision certificate dates of only slow uptake, Braidwood north and south have 43 vacant lots out of a total of 96 or 43% vacancy. These subdivisions have only seen 18 lots built on in 10 years which would seem to indicate 15 to 20 years supply.

Comments on the data:

A percentage of the vacant lots might be classed as less attractive or as having significant development costs and challenges. This percentage could be estimated with some precision but would require several days of GIS mapping and field survey to resolve.

Vacant lots are not all available to the market. A significant percentage would be lots not on the market as they are either being held longer term for speculation or for some ultimate residential development by the current owner. There is a way to resolve this figure with some accuracy but that would require some modelling from sale transfer notices of the number of transfers of E4 lots per year and could take several days to develop from Council transfer records.

A conclusion is still drawn that there is not a short term (5 year) supply problem issue for E4 rural residential style lots, but it is noted there are few new estate subdivisions either developed or approved. Most of the vacant lots are scattered and ones currently listed for sale are generally resales of lots created some time ago. There is likely unsatisfied demand for some new subdivision areas in the west of Palerang – especially if lots were of high quality given the relatively high income levels of most new settlers in this region of Palerang.

3.1.2.2.2 E4 Supply Issue 2: Current subdivision potential and impact of minimum averaging

There are few lots left in the existing E4 zones which are both large enough and suitable for profitable further estate subdivision of more than 1 or 2 lots.

Realistic supply is made more difficult to project given the impact of minimum averaging on lot size. Many residue lots over twice lot size cannot be further subdivided as they are the residues of former subdivisions. Current data on how many larger lots are barred from subdivision are limited.

Most of the E4 is lots sized 6 ha but also has a minimum averaging clause (for explanation of minimum averaging – see Section 3.3).

Therefore, many existing lots of area twice or more than the lot size have, in theory, some subdivision potential (i.e. in most E4 zones 12 ha or greater).

A high proportion of existing lots have small frontages compared to depth and in the absence of averaging, many would not easily be further subdivided. But lot averaging allows a mix of small lots and larger rear residues and greatly increases the potential supply.

The work in Section 2.8.3.2 summarises that there is a hypothetical maximum yield of additional lots in the order of 425 in the western “commuter” existing E4 zones and about 126 lots in the north central and eastern localities where demand seems lighter and commuting lessens. But this hypothetical yield will never be realised given the following factors:

- A proportion of existing lots more than twice lot size are residues from previous lot averaging subdivisions and, if the total allowance was reached in that past subdivision, then the lot cannot be further subdivided under current LEP provisions. Unfortunately, resource limitations have not enabled Council to resolve a conclusive data base on these constrained residue lots to date.
- Some existing lots have high development costs for further subdivision so are ruled out indefinitely on economic grounds. This grouping might be estimated but would require a quite detailed lot by lot survey.
- Some land owners have no desire or are even opposed to further subdivision in their area. This group cannot easily be quantified but could be a substantial proportion and indicators can only be estimated from monitoring subdivision activity.
- Some lots will be difficult to justify for further subdivision based on adequacy of areas for effluent disposal, bushfire hazard, threatened species and other natural constraints such as proximity to watercourses. This grouping could be identified but would require several days of desktop evaluation which is not currently budgeted for.

We have approximated a deduction for the three above reduction factors and offer the following:

Western E4 zones	180 potential lots
Lower demand areas	64 potential lots
Total subdivision estimate for existing E4 zones:	244 potential lots

If resources exist to develop a land monitor, these figures could be more accurately quantified over time by a more detailed lot by lot appraisal including constraint mapping and servicing needs.

The current lot size (6 ha in most E4 zones) seems generous given minimum averaging but if there is good DCP control detail then perhaps the density impacts can be controlled. This issue will be further explored in the strategy development phase.

Issue 2: Need for a Land Monitor?

Possible strategy response to Issue 2:

It seems desirable that Council develop a rural land monitor program so the above issues surrounding accuracy of current supply of vacant lots, rates of housing construction, subdivision and subdivision capacity of vacant lands, can be more accurately understood.

There would seem to be merit in all Councils adjoining Canberra maintaining and sharing a monitor given all supply some of Canberra's needs.

3.1.2.2.3 E4 Supply Issue 3: Is more supply needed of E4 style development?

While there seems to be a reasonable potential for supply from the current E4 zoned lands, it is almost all from infill and resale of existing vacant lots. If growth rates of the past 20 years were to continue for the next 20, then there is a need to zone more land. If the community view is to welcome growth then probably the uptake of the past 20 years needs to become the supply target.

Issue 3: How much supply of E4 lots for the coming 20 years?

The preliminary conclusion is there is not a supply problem for E4 style lots in the short (5-10 year) term.

But there does seem to be a shortage of new estate areas and lots of higher aesthetic appeal i.e. many remaining vacant lots are of lesser quality/have constraints that lower appeal to the higher income section of the market which is pronounced in the west.

Assuming Council and the community wish to continue to supply demand and that the pattern of the past 20 years continues, then the current supply estimate of E4 lots under current zoning is (437 existing lots + 244 potential lots =) 681 lots, and the annual uptake is about 30 to 40 lots which indicates over 15 years supply on hand.

But if demand levels returned to those of the start of the century and before, then the supply could exhaust under 10 years. Also, a proportion of the remaining lots are of lesser quality and hence supply of quality lots may be much less.

Possible strategy response to Issue 3:

No additional E4 supply seems needed in the east for at least 10 years as there are over 80 existing small vacant lots in this part of the LGA and still prospects of further subdivision.

But west of Bungendore there is currently uptake of around 30 dwellings per year and there has been up take of 80 lots per year over the wider area in the previous

decades. Capacity in Queanbeyan to supply further E4 lots is limited. Other than Palerang, only Yass Valley of the councils bordering the ACT has any significant supply of vacant lots and the current Yass Valley proposals indicate only a continuum of modest supply at past rates. It seems appropriate to plan for several new estate areas – perhaps 500 lots capacity, but there seems no urgency to actually rezone further supply under 5 years and better, more detailed land monitoring seems advisable as part of the rezoning investigations.

3.1.3 Dwelling Lots in the RU1 and E3 Zones

3.1.3.1 Demand issues in the RU1 and E3 zones

As with the discussion above on E4 lot supply, Council faces resource limitations on the ability to develop a comprehensive monitor of supply and demand in the short term. Such a monitor is a desirable longer term goal but in the interim sufficient data has been drawn from sources such as ABS data, Council's GIS system and aerial photography to enable strategic decisions to be made.

It is intended to improve the demand statistics as resources permit by:

- Completing the mapping of existing holdings;
- Progress the identification of lots below the minimum lot size with dwelling rights; and
- Interrogation of rate and transfer notice data and building approvals to plot lot uptake and dwelling development of the past 20 years.

Discussion with the local real estate agents drew the following issues:

- A shortage of supply in hobby farms. 40 ha lots sell very well but there are few available.
- The process for determining the permissibility of a dwelling is complex and time consuming.
- DA requirements for some lots appear excessive – especially requirements for access and this constrains many lots.
- As discussed in 3.1.2.1, there is a limit to how far people commuting to Canberra/Queanbeyan for work, will reside into the east of Palerang and the east has much higher proportions of weekender activity and absentee owners.

3.1.3.2 Supply issues in the RU1 and E3 zones

Issue 4: Development monitoring to improve supply statistics.

The data in Section 2.7 is qualified by a number of estimations with sizable variables.

While the supply conclusions reached of around **3,000 potential dwelling lots** from existing provisions are a good guide for the Study and can be used to set direction,

more reliability is desirable for monitoring supply and demand over time and fine tuning trigger points for supply actions such as rezonings.

Council has embarked on a program to accurately map all the vacant Existing Holdings in the area but resource constraints may not see this concluded for a year or more.

It could also be possible to review all approved lots below lot size and map which are permissible for a dwelling. Similarly, the subdivision potential under current lot size could be greatly refined by a more rigorous desktop review of all properties twice lot size or greater. But these two tasks also require substantial commitments of resources and could take many person weeks to complete.

The review of subdivision potential will of course be influenced by what lot size Council ultimately resolves for the RU1 and E3 zones.

Possible strategy response to Issue 4:

Over perhaps 2-3 years Council might implement a land monitor and once these backlog supply assessments are complete the task of monitoring both current supply and demand should lessen to regular updates.

From the ABS and DA data analysed in section 2.7.3.3, the last decade or more has seen new dwelling approvals average around 30 per year.

Issue 5: What supply targets should Council set for the RU1 and E3 zones?

Possible strategy response to Issue 5:

From the mapping of the location of vacant rural residential lots and hobby farms in the RU1 and E3 zones, as detailed in Section 2.7, it is clear there is quite limited supply west of Bungendore and Captains Flat but adequate supply elsewhere certainly for at least 10 years.

The strategy issue is probably more one of control and guidance of rural living and small lot farming to areas of acceptable impact within the RU1 zone.

3.1.4 Impacts of and issues surrounding rural residential development

Issue 6: Water and catchment impacts.

Possible strategy responses to Issue 6:

Water harvesting by dams and bores is having a detrimental catchment impact on water quality and volume.

- New areas may need to be selected in catchments where the existing and proposed impacts are not excessive.
- Lot sizes might also need to be set higher to lessen density? Lot averaging would still allow a mix of lot sizes.
- Controls on further dams, beyond those currently imposed at State level, may be required in Council's LEP or DCP to stem the significant catchment flow

reductions identified in Council environmental monitoring to date. However, the water legislation limits Council's powers at the current time.

- Proliferation of small bores currently seems outside of Council's ability to regulate but is possibly still a growing concern for long term water accessibility. The boundary between State and Local Government responsibility for groundwater regulation and protection seems blurred. There seems a case to both better identify groundwater resources and better plan allocation.
- Council may have to encourage a very high water conservation philosophy/focus for further rural residential estates:
 - Low water consumption gardens;
 - Perhaps a Council managed truck in system for dry periods when rain storage runs low;
 - Enforceable planning controls to achieve water conservation and lessen bores and dams have limitations and education would probably achieve more?
- Outwardly, few people interviewed have raised water as a major issue linked to rural residential, but it was an issue in some of the submissions on the draft LEP. And environmental monitoring by Council is identifying worrying trends in catchment flow reductions and a need for very high rigour in Council monitoring of the numerous on site sewerage management systems. The tendency for "reafforestation" of many rural residential estates has bushfire issues which also then generates further water storage needs for fire suppression.

Issue 7: Benefits and costs of "commuter" residents to Palerang.

Growth in rural residential living in Palerang over the past two or three decades has now reached a point where the majority of rural residential residents in Palerang work and/or have a high percentage of their recreation, commercial (especially shopping) and cultural focus outside the Palerang area in Canberra/Queanbeyan.

There are socio economic issues for Palerang in continuing to allow growth of "rural residential commuter suburbs" for Canberra and Queanbeyan. There are positive and negative implications:

On the negative side:

- In large, new residents relate, interact and spend time mostly outside of Palerang – hence creating two types of Palerang residents:
 1. Those (generally more in the east) with a community of focus in Palerang;
 2. Those whose community interest is more external. Relatively few of the western E4 residents would regularly use services of Palerang townships and businesses. There is some evidence of recreational and educational use within Palerang.

From interviews, the former group already have concerns that they are being numerically consumed by the latter “western blockies” – with a common claim east of Bungendore that Council’s focus is Bungendore and west. Census data on the location of employment also tends to support the position that there are now more residents with an external focus than internal focus.

- Residents of the western rural residential clusters naturally seek some Council services close to their settlements and as they are the areas of most growth, this does pull Council’s resource focus westwards.

On the positive side:

- The growth of rural residential in west Palerang is by far the biggest stimulant to the Palerang economy.
- The growth of a rate base is one way NSW councils can mitigate the income degeneration effect of the State Government’s pegging of rates.
- There do seem to be aspects of current Palerang services that are used by the “commuter” areas. For example, equestrian activities are very popular across these areas and businesses servicing those needs seem numerous and thriving in Palerang. A proportion of students below tertiary level use the area schools with associated benefits of drawing parents to Bungendore.
- Rural residential development can contribute to a critical mass – allowing for a broader range of businesses to establish in and around Bungendore.

There are limits to what land use planning can do to address this issue:

- Council might curtail further supply in the west and seek to focus more on rural residential closer to Bungendore and Braidwood but implications of such a policy might be:
 - Much slower/lesser uptake of lots as there seems a limit how far people will commute to Canberra and Queanbeyan. This would also have impacts on the rate of population and economic growth for Palerang. From exhibition submissions on the LEP, some residents seem to feel Palerang has reached or should define the remaining rural residential “carrying capacity” of West Palerang.
 - The land types close to Bungendore are less suitable for rural residential – the topography is flatter and there are good quality agricultural holdings that should be conserved.
 - Bungendore and Braidwood currently have a very clear, crisp and attractive urban/rural interface which would be lost if there was a large nearby supply of rural residential land.
- Council might plan one or more “new villages” centred in the western rural residential areas as service centres. This generally would seem to go against the State philosophy of consolidating and strengthening existing urban areas.
- Other Local Government areas adjoining Canberra also have significant supply potential – particularly Yass Valley. This may add to some natural

break to demand as commuting distance pushes out in Palerang. Conversely, Palerang has some “marketing advantages” over the other Councils:

- It straddles the route to the coast and the coast is a strong settlement draw factor.
- Overall, it perhaps has more interesting landform to attract rural residential settlers – more rolling, diverse landscapes and scenic quality?

Whether or not a point has been reached where Council and the State Government feel there needs to be a change in the direction of the settlement model for Palerang seems unclear and possibly as much a question of community desire as a land use problem of current magnitude that warrants an urgent solution?

To the extent there is a regional planning need to ensure adequate rural residential supply for Canberra/Queanbeyan, there are also many opportunities across several Local Government areas. Hypothetically, Palerang could constrain supply and other LGAs could easily address demand.

Possible strategy responses to Issue 7:

An informed community discussion on the benefits and negative impacts of commuter resident growth seems important as part of this Study. Ultimately, the land resources for rural living within current commuting distances is finite and continuing to increase population in this area has advantages and disadvantages for groups within the community and prospective community.

Looking to the 20 year horizon of this strategy, there seems to be sufficient, suitable undeveloped lands in the western half of Palerang to accommodate a continuation of the growth that has occurred over the past 20 years, and subject to sufficient sensitive planning to accommodate that growth within reasonable environmental and social impacts.

Issue 8: Economic value/impacts of rural residential and hobby level farming.

The analysis of gross rural production in Palerang suggests there has been some lessening of value but possibly more due to wider regional/national agricultural trends than “waste of farmland” due to rural residential and hobby scale development.

The overall figures on rural production in Section 2 and views expressed from interviews of persons involved in agriculture suggests rural production from hobby farms may not be significantly less than similar areas in professional farming use, but it is highly likely inputs are more and net returns less.

True rural residential estate areas do seem to have low levels of agricultural output compared to the farms they replaced. But in the main these areas were more marginal agricultural lands formerly used for fine wool or low density stocking of beef cattle.

Given there is currently a 40 ha lot size over much of the better agricultural lands of Palerang, this may have potential to see undesirable break-up of professional farms.

But many of the “easy” 40 ha style subdivisions or sales of existing titles to form “40 ha” ownerships may have already occurred in west Palerang given the demand pressure. Cost challenges relating, in particular to access, may be creating a quite effective break on further fragmentation of remaining larger agricultural holdings.

Possible strategy response to Issue 8:

Provided further rural residential (E4) development is channelled to lower quality agricultural lands, the impact of rural residential growth on the area’s agricultural economy would not appear to be significant.

It seems desirable for Council to constrain the 40 ha style of settlement where it affects productive agricultural lands and suggestions are made in Section 3.3.

3.2 RURAL INDUSTRY PROTECTION AND ENHANCEMENT

3.2.1 Splitting Commercial Agriculture from Hobby Farming

The work from the Commercial Agriculture discussion paper (GBPS and Breckwoldt 2015) and Section 3.3 concludes that there is a vague line between where true hobby farming stops and commercial agriculture starts.

Generally, any ownership over 100 ha with some quality of agricultural land would generate some modest part-time income. But there are many exceptions. There are properties of several hundred hectares, all bush and with negligible agriculture and at the other extreme, occasional 40 ha intensively developed properties might be making a little part-time income for the owner once annual operational costs are deducted.

The ABS records 432 commercial farms which seems to indicate many people with holdings below 200 ha are recording themselves as professional farmers. And it is likely many even below 40 ha still consider they make a positive contribution to LGA agricultural production.

Issue 9: Defining commercial agriculture and measures to protect it.

Possible strategy responses to Issue 9:

It seems inappropriate for Palerang to set lot size controls based on a “full-time income”.

Many properties from 100 ha up make some agricultural contribution and even a few of less area.

Map 9 demonstrates that ownerships below 40 and below 200 ha are scattered across the rural landscape but also shows “clusters” of properties over 200 ha and these clusters possibly warrant conserving as a commercial production mass.

Possible techniques to achieve such protection are explored in Section 3.3.

There is also a need to contain pressures for expansion of the road and power networks. Sensitive rationalisation of lot sizing, seeking market level contributions for dwellings with service impacts and possibly even transfers of dwelling rights out of constrained areas, might be investigated as tools to contain expansion of road and power services.

3.2.2 Weed Control

Weed invasion and control is identified in the Palerang SOE reports of 2010, 2011 and 2012 as significant issues.

“Weed invasion continues to pose a significant threat to the environment and economy of the Palerang area. Council commits significant resources to weed control and enforcement of legislation, however, the threat of new incursions

including those assisted by rising temperatures is a major ongoing concern.” SOE 2012.

Fireweed and Cape Broom are identified as weeds of major concern and requiring weed eradication.

There is a widely accepted view that serrated tussock cannot be economically eradicated from Palerang with available technologies and available budgets and is now a weed where the objective is control – especially on better lands.

Weed inspections are carried out every 5 years at 100 commercial properties, 1,400 hobby farms and 4,200 lifestyle holdings.

Issue 10: What can Council do to control weeds?

Possible strategy response to Issue 10:

Council is required to administer the noxious weeds legislation. It has a well-managed program within limited resources and facing major weed challenges. There are extremely wide views on the solutions to the weeds issues. Perhaps Council is doing the maximum its resources allow but perhaps it also needs to try to get that message out further to the rural community.

There are limits to what land use planning can assist with regarding weed control. There is not clear evidence that smaller land owners are necessarily worse at weed control as a group. Some Council's impose a condition on subdivision approvals that current weed infestations on the land be brought under control before a subdivision certificate is issued. However, there is some reservation as to whether such controls are enforceable through the *EPA Act*.

3.2.3 Importance of sunrise and boutique agricultural industries

Conventional beef and sheep operations generate 77% of the gross agricultural production value of Palerang and are not likely to reduce significantly as a proportion of overall agricultural value in Palerang over the next 20 years. (See Table 15).

But new broader initiatives like organic products, grass fed beef, etc., have some growth potential and may influence the styles of beef and sheep production. But overall there is little evidence to suggest in the next 20 years these activities will greatly alter the proportion of agricultural production value away from the 70 plus % of the rural economy currently dominated by traditional sheep and beef operations.

There is clear and increasing interest in boutique agricultural activities and a general growing consumer interest in the “providence” of food (i.e. mapping out to the consumer where food products come from and how they are produced).

Issue 11: What is the role for land use planning in fostering emerging agricultural opportunities?

Possible strategy response to Issue 11:

- Current operators and people establishing boutique agricultural businesses have asked for clearer planning guidelines on exempt and low scale development and for a streamlining of planning process/facilitation of agricultural diversity. Perhaps a planning guide to small agriculture business is warranted which also addresses related legislation such as pure food requirements and some further DCP detail to streamline requirements where DA is required for small rural businesses.
- Permissibility for wide opportunities for sale of locally produced goods is requested. Council has approved markets and more might be approved.
- Care is needed regarding increasing flexibility for rural advertising of produce, roadside stall permissibility and “farm door” sales. Council already permits (with consent) roadside stalls and cellar door sales across the RU1, R5 and E4 zones and home industry is also permissible – which allows for “on farm” produced and value added products to be retailed “farm door”. Council also permits business identification signs subject to development consent, and is developing sign controls in the DCP for rural signs.
- LEP provisions seem appropriate and DCP requirements are under development. Perhaps some further guidelines of a promotional nature for “appropriate” small rural business may assist?

3.3 SUBDIVISION LOT SIZING IN THE RU1 AND E3 ZONES

3.3.1 General discussion on the lot size issue

The lot size map in the LEP 2014 defines the area needed before a dwelling is permissible on RU1 or E3 zoned lands. There are exemptions as discussed in Section 2.7.

The lot size also controls the size of new lots proposed to be created through subdivision.

The current lot sizes are mostly 40 or 80 ha. 40 ha applies to the former Tallaganda Shire area and 80 ha to the rest of the Palerang area, although the area of the former Yarrowlumla and Cooma-Monaro Shires within Palerang, also enjoy lot averaging provisions. (See discussion below on averaging).

There seems to be sufficient evidence from Section 2.7.4 to show some issue of concern regarding fragmentation of larger viable farms due to the relatively small lot sizes of 40 and 80 ha across the RU1 and E3 zones.

But it seems also clear that the rural land values across all of Palerang have long ago factored in the potential for 40 or 80 ha subdivision. And given Palerang's proximity to a large Australian city complex, demand for such lots is real and has some land value above the raw rural land value that would exist in the absence of such demand.

As such land owners would likely be concerned at a proposal to just go to a lot size more equating with "commercial" farm size as that size would certainly be larger and lessen existing subdivision and dwelling opportunities unless coupled with other "compensatory provisions such as minimum averaging or similar. The work in Sections 2.5.2 and below indicates that at least 800 ha of good land and likely over 1,200 ha of class 4/5 land might be needed for an average full-time commercial farm operation in Palerang – if the DPI goal of a "full-time income" was to be met.

It may be an advantage for long term agricultural production in Palerang to try to lessen splits of larger holdings into 40/80 ha lots if the goal is to keep larger properties from being fragmented. Map 9 indicates many clusters of larger properties and these might be the target areas to restrict fragmentation – perhaps with lot averaging trade-offs to "compensate" landowners for a higher lot size?

Lot Averaging in tandem with Lot Size controls may be the best available solution.

Council has previously explored this issue with its discussion paper *Comparison of Minimum Lot Size and Average Lot Size Provisions in General Rural Zones*, Planning and Environmental Services Division, 2009.

The 2009 report explains the concept of Lot Averaging where a mix of lot sizes can be created from a property twice lot size or greater. The minimum lot size is divided into the property area and this number is the total number of lots that might be created. But the averaging provisions allow a mix of lot sizes provided the average does not fall below the specified minimum LEP lot size for the land.

It is common with Lot Averaging provisions to specify a minimum area for any small lots. Take an example, a property is 100 ha, the lot size is 50 ha and the LEP has an averaging provision specifying a minimum lot size of 2 ha. Dividing 50 into 100 gives 2 potential lots, one could be 2 ha and the residue lot 98 ha.

More elaborate averaging provisions might also restrain the total number of small lots that can be created and might also impose maximum lot size for all but the residue lot – especially if the small lots contain land of agricultural value or high biodiversity.

Clause 4.1A(3)(c) of the Palerang LEP 2014 is an example of the restriction of the number of small lots – it limits averaging lots below lot size to 5.

The Palerang LEP 2014 averaging provisions in the RU1 and E3 zones currently only applies to those parts of Palerang comprising the areas of the former Yarrowlunla and Cooma-Monaro Shires. This needs review in the interests of standardisation and simplified administration.

Then there is the need to look at supply/demand analysis for smaller lot sized properties. Preliminary work points to demand being stronger than available supply in the third of Palerang closest to Canberra. This needs to be assessed in the light of the mix and type of supply that may be provided. The options include formal rural residential and small lot farming estates and scattered rural living and smaller lot farming options.

3.3.2 Factors influencing the lot size decision

Section 2.6.2 details the current policies of the Department of Primary Industries. In particular, guidelines are supplied on how DPI considers Lot Sizing should be resolved.

Essentially, the DPI position is to attempt to protect “viable commercial agriculture” through ensuring the lots size in the primary production areas equates with the “family living area”.

The challenge in any rural LGA is defining:

- What is a reasonable net income for a family farm?
- What are the impacts of:
 - Debt servicing;
 - Farm succession planning;
 - Varying land quality;
 - Varying management skills; and
 - The perennial problems of the wide seasonal and commodity price variations associated with Australian agriculture?

The DPI position is reasonably easy to apply in LGAs remote from large population pressures, but is very complex when areas like Palerang are to be considered.

The Commercial Agriculture discussion paper (GBPS and Breckwoldt 2015), accompanying this report draws some interesting and thought provoking conclusions. The following is a summary, mixed with some additional observations:

- The (already) high cost of larger properties and the large number of small holdings means that Palerang is unlikely to be regarded as an important location for corporate agricultural investment. Nor is Palerang affordable for establishing farmers unless they have significant capital and/or off-farm income to service debt.
- The cost of a cow and calf production units is estimated at \$11,000 to \$13,000 on larger commercial operations in Palerang. The same production unit in the north-west slopes of NSW costs between \$4,000 and \$6,000.
- So land values in Palerang have long ago passed a point where they represent “value” for standard agricultural production return per ha and the land value of even current large holdings is heavily influenced by:
 - Speculation/demand caused by proximity to Canberra/Queanbeyan and to some extent the coast.
 - Lifestyle pressures, including higher wealth in the region giving power of living choice.
 - Tax concessions and related advantages of higher income earners owning rural properties.
 - A high demand for part-time farming – fuelled by a significant source of off farm employment:
 - The ABS estimate of 432 “commercial” farms means many registering as commercial for tax or census purposes must be well below a property size capable of generating “full-time family farm income”. There are only 67 assessments listed in Councils data as being over 800 ha, 201 assessments over 400 and a total of 402 over 200 (see Table 25). So over half the 432 ABS “commercial farms” must be less than 400 ha which is not an area likely to produce more than a part-time income. (See discussion below on property earning capacities).
 - The ABS data indicates these 432 farms have an average gross annual return of \$70,000 which must mean considerable off farm income for the smaller section of the 432.

Some observations are also made from the position of land carrying capacities and the most common agricultural enterprise, beef cattle farming.

Extrapolation of Local Land Service data and the research for these reports indicates a cow and calf carrying capacity of somewhere between 3 and 6 ha to the cow.

Using this range the following possible stocking rates and gross annual returns are derived:

Table 24: Estimated gross return for various property sizes

Ha	2 ha per Cow/Calf	6 ha per Cow/Calf	Gross return @ \$400/weaner	Gross return @ \$600/weaner
50	25 cow/calf	8 cow/calf	From \$3,200 to \$10,000	From \$4,800 to \$15,000
100	50	17	\$6,800 to \$20,000	\$10,200 to \$30,000
200	100	33	\$13,200 to \$40,000	\$19,800 to \$60,000
400	200	67	\$26,800 to \$80,000	\$40,200 to \$120,000
800	400	133	\$53,200 to \$160,000	\$79,800 to \$240,000
1,000	500	167	\$66,800 to \$200,000	\$100,200 to \$300,000

Net return is influenced by numerous variables, e.g.:

- Skill of farmer.
- Site specific operational costs, e.g. bad access.
- Larger operations have economies of scale.
- For this example debt servicing is excluded but has major implications.

However, it is likely that most holdings below 100 ha, even with good land and good prices do not make anything like a serious part-time income, once even just annual operating costs are deducted.

That over 200 ha of good land would be needed for something approaching a serious part-time income and that excludes debt servicing and optimum return on overall value of investment.

Probably 800 or more ha of productive land would be needed to have prospects of returning a good full-time income and some debt servicing capacity.

Further research is also needed on the work in Yass Valley relating to its current Planning proposal to take the LGA general rural lot size from 80 to 40 ha. (See discussion in 2.7.5.)

Some conclusions for Palerang:

- It is doubtful a single lot size would address the significant production variables given diversity of land quality. This is a major preliminary option for further exploration in the coming strategy – to introduce a range of lot sizes (see Section 3.3.2). There is also diversity in the spectrum of demand including demand for:
 - Rural residential estates;
 - Small farm estates;
 - Scattered rural living sites; and
 - Scattered small farms in the commercial farming landscape.

- If a full-time family income, provision for debt, etc., is required even on average land quality, then properties of 800 or more ha would seem to be needed.
- There are only 67 assessments left over 800 ha in Palerang. (See Table 25.)
- Probably a lot size of 100 ha or greater would be needed for prospects of some modest part-time income and as a break on fragmentation of remaining larger holdings in the land classes under DPI class 5.
- Some interesting arguments and counter arguments on lot size relevant to Palerang are made in the reports and Government Agency submissions on the Yass Valley Planning Proposal as outlined in 2.7.5. These arguments and the data from the Yass Valley work warrant close review as the Palerang Strategy develops.
- What are the environmental and servicing consequences of lot size changes?

Issues are now explored in the following subsections:

Issue/Option 12: What if the lot size just stays the same? (i.e. 40 or 80 ha)

- The mapping of properties in Map 9 shows quite a number of larger properties still exist in good land quality areas (Ag classification 3/4). Fragmentation of some of these into 40 or 80 ha lots seems likely in time.
- Conversely, the provisions have been around a long time and as such many of the easier and more profitable 40/80 ha subdivisions have been completed. The remaining larger properties, even in good land type areas, often have access and other development costs currently constraining subdivision.
- But assuming land demand for hobby farming close to Canberra remains strong, and for the 20 year horizon of this strategy there are no indicators of a major drop in such demand, then a shortage of supply may push prices such that access and other costs become affordable and splits of remaining larger properties within the commuting range continue.
- Land holders would retain their hypothetical subdivision potential (or similar potential to sell off existing lots above lot size) – even if for many it is not economic in the short term given services or site constraints. Current Council provisions such as road standard requirements, developer contributions, protection measures for vegetation and bushfire, etc., are natural economic constraints on general rural zones type subdivision. The reality is, while current lot size provisions are small in Palerang by comparison to many Councils, subdivision requirements are a considerable brake until prices rise markedly.
- The current 40 and 80 lot size areas in Palerang are based on historical events rather than any argued land use logic and the “no change” option would see this anomaly continue.

Possible strategy response to Issue/Option 12:

The preliminary conclusion is that alternatives to low lot sizes in the RU1 warrant further investigation and at least the anomaly of the 40 and 80 ha lot sizes warrants review.

Issue/Option 13: Increase the lot size without averaging.

- As detailed above this immediately provides a break on fragmentation especially if a lot size of 400 ha or more was imposed.
- Such a measure would be resisted by many landowners although the number of remaining landowners with real economic potential for subdivision in perhaps the next 20 years is likely much lower than most owners appreciate. It would take a substantial lift in price for “40 ha” style parcels to fund the servicing costs of much remaining potential or to push demand significantly to the east.

Possible strategy response to Issue/Option 13:

The preliminary conclusion is that there are better alternatives to just increasing the lot size.

Issue/Option 14: Moderate increase in lot size but with averaging provisions.

Say for discussion the lot size moved to 100 ha with a minimum averaging provision. There is some evidence properties over 100 ha with a reasonable proportion of class 4 or better land are likely to be professionally used.

- Land owners in the current 40 ha lot size between 80 and 200 ha would lose any subdivision potential and hypothetical maximum yield for owners over 200 may be reduced.
- Landholders in the current 80 ha lot size with properties between 160 and 200 ha would lose any subdivision potential and those over 240 may have yield reduced.
- Economically viable yield may increase compared to current lot sizes as averaging creates more opportunity to create small lots in a section of the property that is unconstrained and economic to service.

Possible strategy response to Issue/Option 14:

The preliminary conclusion is for the remaining study work to explore further this option of a mix of larger lot sizes and lot averaging.

Issue/Option 15: Detailed rural lot sizing plus averaging.

Detailed review of properties and site by site planning might be linked with variable lot sizing across the general rural zones to try to achieve:

- Some equity regarding current realistic subdivision potential.
- Direction and clustering of additional lots to areas where services are adequate.

Possible strategy response to Issue/Option 15:

The preliminary conclusion is that this may be the most beneficial option in terms of retaining agricultural production (or at least larger rural holdings) and reasonable land holder equity, while reducing the uncontrolled impact of lot averaging or small lot sizes which permit lots to be scattered across the landscape with little servicing control or agricultural protection.

3.4 INTENSIVE HORTICULTURE

Araluen Valley

From discussion with LLS, there are evidently only three orchardists left in Araluen of commercial scale.

The problem for Araluen is competition from Qld and Northern NSW early ripening varieties, which were one of the strengths of Araluen peaches. This competition may impact negatively on future growth.

Araluen fruit tends to be sold at Canberra farmers markets and smaller outlets – not supermarkets.

Araluen orchards are being replanted with new varieties. But early, boutique and Christmas coastal tourism markets seem to be the main commercial advantage of Araluen. The relative isolation and distance to markets is a disadvantage to entering the low cost, bulk scale markets.

Council has requested the option of an RU4 zone (Primary Production – Small Lots) be investigated for Araluen stone fruit lands. Preliminary indication is that there is no real threat to the horticultural area and the present 40 ha minimum likely provides adequate protection of the horticultural land resource and some capacity for spray drift buffers.

An RU4 zone with smaller lot size may actually work against protection of the stone fruit lands of Araluen in the current time of static or possibly even retracting markets, as it may create a form of rural small holding zone instead of intensive horticulture. The Standard Instrument allows dwellings on lots above lot size, subject to consent, in the RU4 and while the zone objectives might be focused towards horticulture, that may not stop general rural residential take-up.

Should the review of lot size for RU1 result in a larger general lot size, then perhaps an RU4 zone might be appropriate for the better potential stone fruit lands of Araluen with perhaps 40 ha lot size.

Horticulture Elsewhere In Palerang

There are mainly scattered, niche market horticultural activities across the rest of Palerang with no significant horticultural district. There are some larger areas of extensive scale cropping or fodder growing but this type of horticulture seems to fit well within the existing RU1 objectives.

There are some established vineyards in west Palerang and a small cider industry at Braidwood but no discernible area that seems to warrant a specific horticultural zone such as an RU4 zone.

The effect on neighbours of spraying activity in orchards and vineyards was identified as a potential conflict issue by Council staff but evidently complaints have not been significant to date.

Issue 16: Is rezoning needed to protect horticulture in Palerang?

Possible strategy response to Issue 16:

If lot sizes are to increase significantly, there may be justification in defining some specific horticultural zones around existing and potential horticultural industry.

Some Councils have agricultural buffer requirements in their DCPs to ensure some protection of existing horticultural or more intensive agricultural practices, when siting new dwellings or creating further lots for rural residential purposes. Some buffer clauses from other Council DCPs are offered for Council's consideration in the preparation of the new area wide DCP.

3.5 FARM SUCCESSION

The issue of family farm succession was raised in some of the community feedback from the LEP exhibition process.

Issues assisting successful farm succession where more junior farming family members can transition to management/ownership of the family farm include the following:

- Financing the buy-out or retirement needs of the senior family member.
- Whether on site accommodation can be provided for several generations.
- The ability to assemble additional land to support an extended or multigenerational family farm.

Land use planning has limitations in furthering these issues.

Council's current LEP provisions for the RU1 zone already cater for dual occupancies, farm worker dwellings and secondary dwellings. As such there is adequate provision for additional dwellings if several generations of family farm members require accommodation.

Lots of any size for agriculture without a dwelling are also currently permissible as a method of farm rationalisations and assembling more land without having to pay for the value of existing dwellings. (See LEP clause 4.2.)

The lot size issue in Palerang may have an influence on land values and the pressure from the Canberra region and to a lesser extent the coast for small holdings would definitely see a price creep factor throughout rural land of Palerang.

This would make it more expensive to assemble additional hectares for farm build-up or to pay out retiring family farm members at market value. The alternatives to current lot size presented in Section 3.3 may provide some flexibility and lessening of price if certain lands can be planned without dwelling potential, but probably all of Palerang already contains a factor in its rural land value which makes it more expensive per hectare than lands of similar productivity in parts of other tableland LGAs like Cooma-Monaro or Bombala where there is no real competition for the commercial agricultural use.

Issue 17: What role for Council in facilitating succession planning in agriculture?

Possible strategy response to Issue 17:

The role of Council in protecting options for succession planning are likely limited to controls on fragmentation and more extreme land speculation where it impacts on larger holdings. The issue of succession needs to continue to be part of the lot size research.

3.6 AGRICULTURAL VIABILITY

(See also Section 3.3 for a discussion on lot sizing and the links to agricultural viability.)

While niche agricultural activities are emerging and may provide part-time income for smaller lot owners and stimulate food related tourism, it seems highly probably the bulk of commercial agricultural activity in Palerang over the next 20 years will revolve around conventional “broadacre” sheep and cattle production.

Distance to abattoirs, regional scale sales centres and to feed supplies is an issue adversely affecting the rate of return for conventional beef and sheep farming. Conversely, trends to organic, food providence and world trade demand for food may see some lift in the net return per ha for commercial beef and cattle operations in Palerang over the coming 20 years.

The research to date including Sections 2.4.3 and 3.3 and the Commercial Agriculture Discussion Paper appears to point to both part-time and full-time commercial farming having economic value and even that larger hobby farms have an element of agricultural production.

The break-up of what constitutes a commercial farm and what is a hobby farm or mostly rural residential use, as devised by Council’s Environmental Services Section seems sound (see Section 2.4.3).

Map 9 depicts the location of the various ownership sizes in the RU1 and E3 zones and table 25 below shows the property size breakup.

Table 25: Breakdown of property sizes in the RU1 and E3 zones

Property size	No. of properties
Below 5 ha	335
5 to 40 ha	968
>40 to 100 ha	958
>100 to 200 ha	318
>200 to 400 ha	201
>400 to 800 ha	134
>800 ha	67

This work, the interviews with industry players and review of sizes of existing assessments points to most commercial scale agriculture occurring north west of captains Flat, around Bungendore and around Braidwood and to its south.

Section 8.4 in Council’s 2008 discussion paper noted that minimum of 600 ha of average Palerang carrying capacity land may be required to approach some

threshold for viable commercial agriculture, without the need for substantial off farm support income.

The 2008 report considered an enterprise to be commercial when 50% of income was derived from the land and developed an argument that the holding needed to be greater than 300 ha of at least average carrying capacity to have prospects of achieving this.

Similarly, the work to date in this report and the accompanying Palerang Commercial Agriculture discussion paper (GBPS and Breckwoldt 2015), identifies that likely in excess of 800 ha would be needed to support a family without significant off farm income and be able to service some debt. From Table 25 it appears there are only 67 single properties left in the LGA of this size and only approximately 200 properties over even 400 ha. There are also some farmers operating several separate parcels of land that don't adjoin, but the point still seems valid that 800 ha may be required be it in one or several holdings.

But using the area needed to generate a “full-time income” as a basis for lot size or protection of commercial agriculture is quite debatable especially in an LGA with the diversity of settler interest of Palerang. There is evidence that productivity from part-time farms in the range of 100 to 600 ha is as high per hectare as a “full-time farm” – often with comparable stocking rate and net per ha return. The proximity of much of Palerang to off farm employment further increases the argument that part-time farming can make an important contribution to Palerang rural economy.

Issue 18: Agricultural viability and lot size.

Possible strategy response to Issue 18:

While hobby farming can also generate agricultural production, most properties below 100 ha would likely struggle to net commercial scale returns and are likely to see owners supporting the operation with higher off farm capital inputs – just to address annual operating costs.

Section 3.3 deliberately does not conclude any preferred lot size at this point in time and makes several suggestions for development in the coming strategy.

3.7 WATER CONSERVATION

Issue 19: What strategic actions could Council consider regarding conserving water in the rural zones?

Possible strategy response to Issue 19:

Further investigation may be desirable as to the need for formal buffers for bore fields such as those supplying Bungendore.

Catchments such as that of Googong Dam, Shoalhaven and Captains Flat warrant limits on further development and Clause 6.5 of the 2014 LEP applies such controls. Limitations on more intensive residential development such as further E4 type zones in the drinking water catchments seem advisable.

Water harvesting via dams in the current E4 zones appears to be having adverse impacts on catchment flows. Future rural residential areas should be selected in catchments not already constrained by numerous dams. Council may need to constrain or require approval for all further dams below sizes and requirements regulated at State level. Lot size and other density controls may need to be raised for future E4 zones to limit catchment impacts. Alternatively, small lots may be set in small clusters, surrounded by larger lots in fragmented areas.

Underground water supplies may also be being stretched but there is a lack of hard data on groundwater intake areas, reserves and impacts of current draw downs. A base of groundwater resource data needs to be developed coupled with ongoing monitoring with possible greater regulation of new bores if water table falls are being experienced.

A more formal water cartage system may be appropriate to top up E4 supplies in dry periods.

Water saving measures may be further encouraged in new development.

Climate change impacts are not likely to be overly significant in the 20 year life of this strategy but longer term predictions are for more violent weather and dryer conditions. Long term water conservation plans perhaps need to be commenced now.

Sydney Water has requested a range of zonings for its extensive holdings. This will be reviewed in the next phase of the Study.

3.8 EXTRACTIVE RESOURCE PROTECTION AND MANAGEMENT

Section 2.1.6 details the mineral resources audit of Palerang recently completed by the Mineral Resources Branch of NSW Trade and Investment.

A detailed map has been provided by the Branch. (See Map 5.) It is important the community plan to protect the identified extractive resources.

Issue 20: Protection of extractive resources.

Possible strategy response to Issue 20:

The next phase of the Study might bring forward recommended rural buffers for known deposits and ensure proven resources are not included or are in close proximity to any proposals for more intense land use.

3.9 LANDSCAPE AND HABITAT PROTECTION

The Aboriginal community have long placed great cultural and spiritual significance on elements of the Palerang landscape. Ongoing protection of the essential values of that landscape is still of great importance to the Aboriginal community.

Palerang has many quality rural landscapes in its area and these form a cornerstone of the community's sense of place and enjoyment of living in Palerang. They are an important factor in attracting visitors to the area.

The diversity of landscapes is high and spans from pure native forest, mixed landscapes of remnant vegetation and pastureland to long modified landscapes with some English character and interspersed with heritage buildings. The rolling topography intensifies the diversity of views and vistas as one travels around Palerang.

Time constraints did not permit a general clause in the 2014 LEP regarding maintenance of scenic/cultural landscapes. Council has introduced wider DCP controls in the new DCP 2015 based on the former Yarrowlumla LEP measures, such as controls on ridgeline development. These DCP controls might be monitored for effectiveness before a decision is needed as to whether a formal LEP landscapes map is desirable.

The Aboriginal cultural heritage mapping project may result in a cultural sensitivities layer for the DCP or as part of an LEP landscape overlay.

While the State Government is currently reviewing the *Native Vegetation Act*, current provisions exclude Council from any direct role in rural management and regulation of native vegetation, other than where vegetation is directly impacted by development requiring Council consent. The new DCP picks up controls and guidelines where development needing Council consent also involves native vegetation.

In addition, the State manages all National Parks and State Forests in Palerang.

So in large measure, the conservation of the vegetation that is such an important aspect of the Palerang rural landscape, is currently the responsibility of the State Government. However, the NSW Government currently has all biodiversity legislation under review and one of the recent suggestions is for a larger local government role (see Section 2.6.12.3 for background).

Council's powers and role in rural landscape protection and enhancement are limited to controls on siting of new development such as new buildings, roads and subdivision patterns. Council can also assist with planning of corridors and habitat re-establishment as part of subdivision and dwelling requirements.

An extract from the Bega Valley Shire DCP 2013 landscape controls is presented below as part of a possible model.

Extract from some of the Bega Valley Shire work.

What do we mean by scenic and cultural landscapes?

Scenic landscape amenity is a composite of two factors – scenic preference (the community’s liking for scenery) and visual exposure (the extent to which a place in the landscape is seen from important public viewing situations).

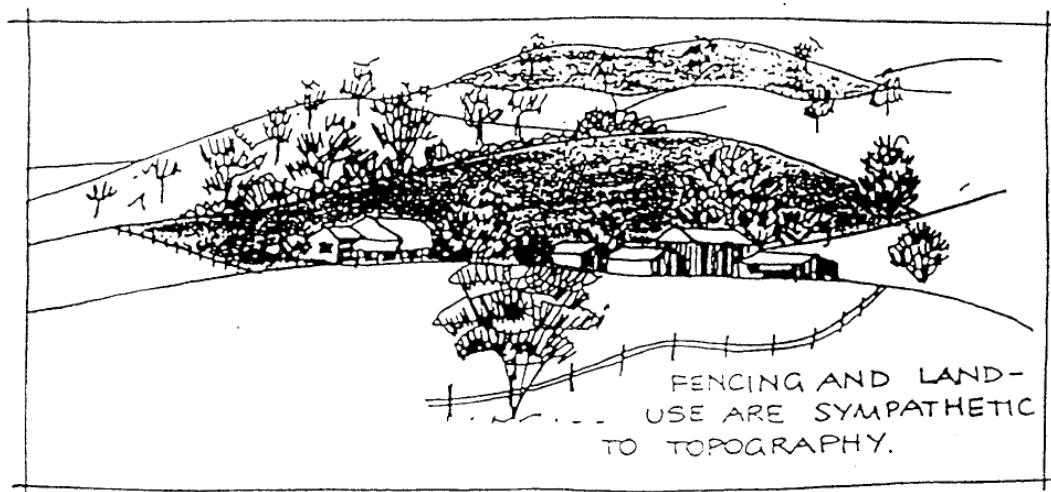
Cultural landscapes, within the context of this strategy are considered as physical areas with natural features and elements modified by human activity that have resulted in land use patterns layered in the landscape, which give a place its particular character, reflecting human relationships with and association with that landscape.

Aims

- *Preserve and conserve the scenic values of the rural landscape as seen from regionally or locally significant view situations.*
- *Ensure the appropriate siting and design of development, buildings and works to preserve the rural landscape and heritage values of significant cultural or scenic landscape units.*
- *Protect and recognise the importance of natural forest verges and remnant native forest stands and exotic plantations to the landscape character of significant cultural or scenic landscape units.*
- *Protect and recognise the importance of the historic buildings and settlement form to the scenic and cultural landscape value of significant cultural or scenic landscape units.*

General requirements

- *New buildings in the rural landscape must be in a style (design, height, scale, bulk, materials and external colours) sympathetic to the landscape character.*
- *Buildings must be constructed from a non-reflective material and must blend in with locality landscape.*
- *Visibility of new buildings from regionally or locally significant public roads and vantage points must be minimised by planting trees and shrubs between the view sites and the structure and immediately adjacent to the structure. Landscape planting must reflect existing landform and natural vegetation. Buildings can be partly set into the natural surface on slopes and/or be split level.*
- *Roads, driveways and other excavations visible from regionally or locally significant public roads and vantage points must follow contours and natural vegetation lines and not be at right angles to contours. Excessive cut and fill is to be avoided.*



- *The erection of a building on a ridgeline is discouraged if the building would be visible from a regionally or locally significant public road or vantage point and appears as a skyline structure from that location.*



The following strategies are considered appropriate to reduce negative impacts of development on scenic values:

- *Design modification following the above requirements*
- *Increasing the distance between the development and significant public roads or vantage points*
- *Locating the structure on a site that is partly or fully hidden from significant public roads or vantage points*
- *Siting development in less prominent areas such as on the side slopes and in the natural depressions*
- *Reducing the height and width of the structure that presents to the public road or vantage points*

- *Planting and maintaining screening vegetation as ongoing performance conditions of consent.*

Where landscape planting is an important part of the mitigation strategy for any development, Council will impose ongoing performance conditions for the land owner to achieve and maintain the intent of the provision.

Issue 21: How can Council protect and enhance the rural landscapes and biodiversity of Palerang?

Possible strategy response to Issue 21:

- Council might affect further landscape appraisal and introduce more elaborate guidelines and controls. Council might try to partnership with State and Federal Governments to seek funding for landscape enhancement and nature corridor expansion. State Government draft proposals for biodiversity may alter Council's roles and powers. This State Government review of biodiversity will continue to be monitored.
- The last two or three decades have seen a move by some new land owners in purchasing lands for primarily nature conservation and private retreat/recreation purposes. Council might identify target areas where natural values predominate and use development incentives or performance conditions of consent to encourage habitat protection.

3.10 EXISTING HOLDINGS AND DWELLING LOTS

As detailed in Section 2.7.3 these provisions apply in the RU1 and E3 zones. They allow consideration of a dwelling, subject to development consent, on some land below lot size. There are two different provisions.

Clause 4.2A(6) defines what land can be considered as an existing holding. A full, intact existing holding retains a right for consideration for a dwelling. A development application is still required and a suitable dwelling site needs to be proven on its merits.

We estimate there are currently around 800 vacant Existing Holdings in Palerang. This estimate will be refined once Council completes its more detailed review of all Existing Holdings.

Secondly, there are lots approved under former planning schemes that may not meet lot size today but nonetheless, because they were lawfully created before the current 2014 LEP as lots where a dwelling was permissible, they retain the right to be considered for a dwelling under Clause 4.2A(3)(c) and (d).

We estimate there are about 400 lots below lot size where a dwelling is permissible subject to consent. This figure may also be refined if Council progresses a full land monitor as resources allow.

Many of these existing dwelling options on land below the minimum lot size are in separate ownerships where the owner has a (legitimate) expectation to be able to apply for consent for a dwelling and because of this the land has added value.

3.10.1 Future of Existing Holdings and Dwelling Lots

The origin of Existing Holdings goes back to the initial establishment of rural planning controls in the 1960s. To protect the rights of existing land owners to have a dwelling, usually the date of the coming into effect of restrictions on dwelling permissibility in rural zones was also selected as a date where ownerships at that time would retain the right to be considered for a dwelling.

As time has moved on the provision has rolled over from planning instrument to new planning instrument and determining what constitutes an Existing Holding, has grown in complexity with historic ownership searches often being needed using old rate books or historic land transfer data.

Some Councils are moving towards a map to demonstrate what land parcels below lot size may be considered for a dwelling. While preparation of such a map has resource implications, on completion, there are long term resource savings for Council and much simpler resolution for the community of where dwellings are permissible on property below lot size.

To assist Council with its Existing Holding mapping task, recourse might be had to the NSW Land and Property Information Service's new historical searching tools which allow a more streamlined review of ownership history.

The current LEP retains the 5 different existing holding dates from the former councils that made up Palerang. This adds significantly to the complexity of managing this provision and further reinforces the desirability of replacing the 5 dates with a simple map.

Issue 22: How to better manage/address existing holdings and dwelling lots below lot size?

Possible strategy response Issue 22:

It is desirable to replace the complicated existing holding and small dwelling lot provisions with simple (lot size) mapping to denote all permissibility.

3.11 SPOT REZONING REQUESTS FROM THE 2013 LEP PROCESS

The Council has received a number of requests for the rezoning of rural land as part of the exhibition of the Draft LEP in 2013. Council deferred a decision on these individual requests pending a coordinated review as part of this Study process. The following land will be assessed and recommendations included in the Strategy.

Table 26: Spot rezoning requests from the 2013 LEP Process

Number	Lots	DPS	Referral Notice	Report Ref	Referral Notes
1	1	456367	South Royalla	68	Review for possible rural residential use
2	2	456367	South Royalla	68	Review for possible rural residential use
3	2	131294	South Royalla	68	Review for possible rural residential use
4	1	1067259	South Royalla	68	Review for possible rural residential use
5	53	774754	Federal Highway Extension	69	Review for possible rural residential use
6	54	774754	Federal Highway Extension		Review for possible rural residential use
7	55	774754	Federal Highway Extension		Review for possible rural residential use
8	56	774754	Federal Highway Extension		Review for possible rural residential use
9	11	1058499	Llewellyn Drive	70	Reconsider RE2 Zoning
10	162	754873	Lake Road - Bywong	71	Permissible for dwelling?
11	97	754915	Lake Road - Bywong		Permissible for dwelling?
12	73	754882	Woodfield Road - Sutton	72	Seek second lot
13	13	727614	Urila Rd - Urila	74	Request E4
14	1	219747	Urila Rd - Urila		Request E4
15	1	378941	Wirrenada Rd - Wamboin	75	Request E4
16	1154	136392	Tarago Rd - Lake George	76	Permissible for dwelling?
17	9	754867	Boro Rd Boro	77	Permissible for dwelling?
18	152	821705	Burra Rd	78	Permissible for dwelling?
19	56	754915	Cherry Tree Lane - Bungendore		Request E4
20	1	1171081	Hector Mcintosh Rd - Sutton	79	Request E4
21	1	731998	Sutton Rd Sutton		Request E4
22	11	1118681	Sawyers Ridge Rd Reidsdale		Request 2 Lot Subdivision

Source: Palerang Council

3.12 BUSHFIRE PROTECTION

Palerang has significant areas of bushfire prone land. Map 22 depicts the bushfire categories.

Over 3,000 sq km or approximately 60% of the LGA is vegetation category 1 which has some forest or similar vegetation of higher fire risk.

Even most grassland rural areas can carry a serious wild fire in extreme conditions.

As such fire planning is an important aspect of Palerang's rural strategy – particularly in planning safe new development.

Many of the current rural residential areas of Palerang are experiencing varying levels of regeneration of native vegetation as residents support a philosophy of enhancing biodiversity. While this has positive aspects, it is also seeing a rise in bushfire threat across much of the E4 zones.

Some earlier estates have poor emergency egress with long cul de sacs common. This is limiting fire planning strategies to those of evacuate very early or stay and be prepared.

The role of land use planning for fire protection in existing estates is largely limited to controls on a development for new dwellings and enforcing bushfire protection conditions of consent on past dwelling approvals.

Other community protection plans are available or can be developed by Council and the Rural Fire Service (RFS).

New subdivision development will need to comply with current RFS provisions which now gives greater attention to fire strategy planning as part of the requirements before bushfire prone land is zoned for further residential use.

Many agricultural forestry applications are handled under NSW State legislation and can result in new plantations being located close to rural lifestyle developments resulting in unforeseen increased fire risk. Good coordination is needed with State agencies to ensure future rural residential areas are buffered from plantation forestry.

Climate change issues detailed in Section 3.13 warrant a more precautionary approach to future bushfire protection planning.

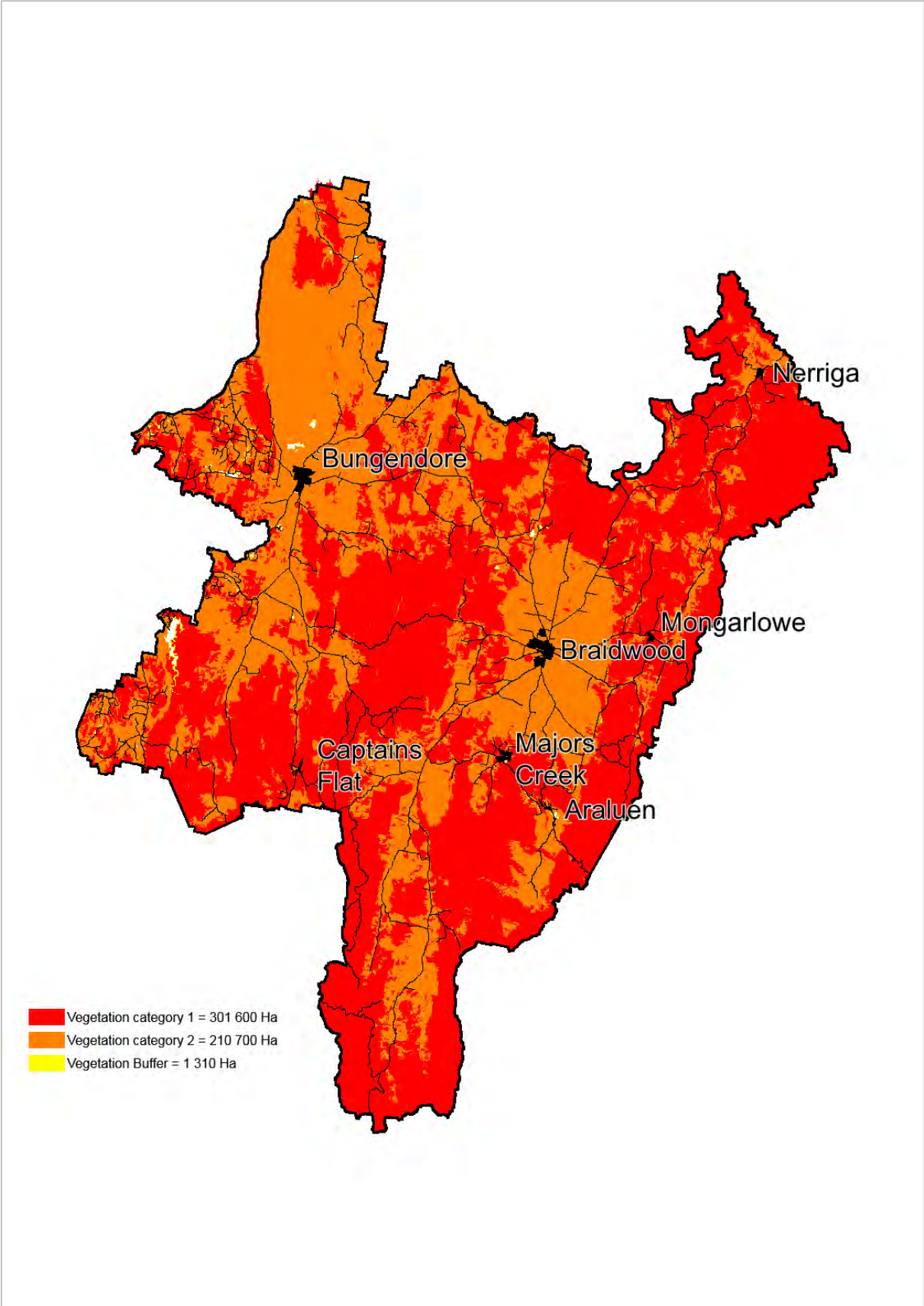
Issue 23: Bushfire protection looking forward 20 years.

Possible strategy response to Issue 23:

Some improved fire access and emergency planning may be warranted in existing rural residential subdivisions.

Requirements for rezoning and DAs for new rural housing and subdivision development should address at least the minimum Rural Fire Service requirements plus some additional precautionary measures to address increased fire risk likely to evolve from climate change.

MAP 22: BUSHFIRE PRONE LAND



3.13 CLIMATE CHANGE

Section 2.1.4 summarised what is probably the best current scientific view on the possible impacts of climate change for the Palerang LGA:

- Increased number of extreme weather events.
- More pressure/competition on water resources.
- Increased chance of bushfires.
- As the number of very hot days (above 35 degrees Celsius) increase, the number of illnesses and heat-related deaths could more than double, with the elderly particularly vulnerable.
- Change in flora and fauna location and type. A need to plan for species retreat corridors and similar as habitats face accelerated modification.
- Changes in water availability, temperatures, bushfires and changes to the distribution of pest species will impact on natural environments.
- The projected changes could directly affect the productivity of Palerang agricultural industries.

The major impacts seem to be mostly beyond the 2035 horizon of this Study, but all indications are that serious consideration of the implications needs to be under way now. For example, while average catchment runoff is predicted to decline by around 10% by 2030, by 2070 the estimates range from at least 25% to 50%.

Agriculture and rural living are heavily dependent on this run-off for all aspects of their operation – from stock and domestic water to bushfire protection – and bushfire frequency and intensity is predicted to rise.

Strategy planning implications for Council:

While Council and the Palerang community can play a small part in reducing greenhouse gases, that aspect is really a response for national and international government and processes.

But overall, a more precautionary approach by Council to land use and planning is well justified. The main climate issues and possible responses are listed below for community discussion:

Issue 24: Increased number of extreme weather events.

Possible strategy responses to Issue 24:

Council disaster management plans need to factor in more extreme floods and fires and the scale of preparation and response that requires.

Land use planning controls to specify bigger buffers from areas of higher flood or fire risk.

Issue 25: More pressure/competition on water resources.

Possible strategy response to Issue 25:

Overall, Council and the community need to plan for a loss of available water. There is evidence that some catchments are heavily utilised now. No easy response is currently evident. Palerang area is all upper catchment and there are the implications for downstream users if Palerang responds merely by collecting more of the scarce run-off.

Control of consumption is possible using all possible water conservation devices and strategies.

New development to be planned so the density and dam numbers are less over the immediate catchment.

Issue 26: Increased chance of bushfires.

Possible strategy response to Issue 26:

A general more precautionary approach to fire protection measures. Prepare for more and more intense fires. New development to have buffers larger than current requirements and more stringent enforcement of ongoing performance conditions of consent relating to fire protection works. Possibly specify more fire planning detail in specific DCP maps for new areas.

Issue 27: As the number of very hot days (above 35 degrees Celsius) increase, the number of illnesses and heat-related deaths could more than double, with the elderly particularly vulnerable.

Possible strategy response to Issue 27:

Council and health authorities may need more elaborate response strategies for peak temperature days – including servicing requirements for rural residential areas where the population will continue to have a large proportion of aged/vulnerable.

Issue 28: Change in flora and fauna location and type. A need to plan for species retreat corridors and similar as habitats face accelerated modification.

Possible strategy response to Issue 28:

Protecting and enlarging vegetation corridors will be essential for long term prospects of survival for many species and even to ensure retention of farm shade for stock. Council can require improvement to connectivity as part of DA and rezoning conditions. The new DCP attempts some corridor protection but this can only be applied to actual DA areas where Council consent is required. Given State Government (currently) controls most rural clearing, Council may need to lobby for a clear corridor strategy across the LGA and landowner incentives to progress it. Federal tax concessions could be a powerful tool.

Issue 29: The projected changes could directly affect the productivity of Palerang agricultural industries.

Possible strategy response to Issue 29:

Agriculture would face more extreme seasons and overall more dry ones. Some loss in carrying capacity seems likely – more so by about 2050. There are few direct actions for Council. Perhaps Council could plan further rural residential so density and location do not further lessen runoff to the better agricultural lands.

3.14 INFRASTRUCTURE

Council has no proposal to provide reticulated water or sewerage to rural development or rural residential development.

The density and potential for further increased density due to lot averaging provisions in the E4 zones, places a requirement on Council for rigorous policing of on-site sewerage management Approvals. Monitoring may reveal a need to perhaps move to lower density E4 style development – see the suggestions on small clusters.

Council is responsible for 720 kilometres of gravel pavement roads and quite a number of even sealed roads are below optimum formation and pavement standards for current use especially to cater for large rural transports that service commercial agriculture.

While it is relatively easy to require new rural residential estates to provide sealed road infrastructure as part of the rezoning and DA processes, the uncontrolled nature of Existing Holdings and lots approved for dwellings under past schemes below lot size create many opportunities for new dwellings on land with frontage to existing gravel pavement roads and overloaded sealed roads.

In some areas this increased density can raise demands for road improvement and Council has limited powers to ensure adequate contributions from this form of development to fund the road upgrades.

The relatively low lot sizes of 40 and 80 ha across much of the RU1 zone also see subdivision pressure on gravel standard roads and limitations on contributions that can be imposed.

The review of development contribution plans currently under way by Council may allow some capture of additional funds from this form of development and further refinement of condition requirements for road frontage improvements might be considered in a future DCP review. But Existing Holdings, approved small lots and low lot size development are by nature unplanned in their location and scattered across the rural landscape. This low density nature of settlement does not allow for sufficient contributions to take roads to sealed standard.

While Council has many timber bridges and insufficient funds for maintenance/replacement, little potential funding seems possible from scattered rural development. Some timber bridges have cultural and heritage values, Majors Creek is given as example.

Like roads, it is inefficient to reticulate power to scattered residential development across the RU1 landscape. While energy authorities attempt to seek capital works recovery for new connections, the low density network has high maintenance burdens that are spread across the wider power consumers.

There are gas pipelines traversing parts of the LGA. It may be worthwhile for Council to investigate as part of economic planning the potential for connection of large rural based industry utilising this resource?

Issue 30: Implications of further rural living on road and power infrastructure.

Possible strategy responses to Issue 30:

- Review development contribution plans to ensure a reasonable contribution to roads and possibly use as a brake on poorly accessed development. However it is noted that contributions are currently capped at \$20,000 by the State Government.
- Possibly revise lot sizes to lessen development on poor roads. The preferred response may be to have a variable lot sizing across the landscape that targets areas in need of control for agriculture and service reasons through application of larger lot sizes in these target areas.
- Possibly work with land owners in some areas to trade off dwelling rights to better serviced lands.

3.15 THE INFLUENCES OF CANBERRA/QUEANBEYAN AND THE COAST

The impact of Canberra and Queanbeyan on demand for rural living is very significant as detailed in previous sections.

But the nearby presence of a regional city complex has wider impacts on rural land use:

- Farmers markets and other providence food development in Palerang have a far larger potential market than just the resident population.
- Short stay tourism has a large potential market.
- Palerang straddles the Kings Highway – the main route from Canberra/Queanbeyan to the Coast. This sees a high flow of travellers through the area and adds to the viability of activities like restaurants at Braidwood.
- Water demands on the catchments of Palerang.

Issue 31: Tapping the benefits of Canberra/Queanbeyan.

Possible strategy responses to Issue 31:

- Facilitate a diversity of short visit tourism opportunities in the rural areas. Current controls have some flexibility. Are more needed?
- Facilitate diversity in local food production – markets, road side sales, flexibility for small business start-ups.
- Don't duplicate what Canberra supplies – complement?

Issue 32: Limiting the adverse impacts of proximity to a large urban complex.

Possible strategy responses to Issue 32:

- How much more rural residential? Council and the current community have choices and a detailed engagement is warranted (no priority order):
 - significantly constrain supply of more rural residential;
 - seek to capture all the growth possible;
 - mid-ranged growth targets.

Whatever target, detailed planning of the location of new zones and possible better guidance of RU1 zone development seems called for.

- Plan well in advance with ACT on joint issues such as water sharing and infrastructure generally. Siloing responsibilities within administrative boundaries has many inefficiencies and exposes the smaller bodies like Palerang to being overlooked in issue resolutions for the ACT. Palerang is part of the Capital region and alliances seem the way forward be it in infrastructure, land use planning or almost any of Council's functions.

3.16 IMPLICATIONS OF A MAJOR URBAN COMPLEX IN PALERANG

This section relates to Section 3.15. Bungendore has a range of growth options not available to many smaller rural towns because of its location relative to Canberra. State strategy is not against a larger Bungendore (or for that matter Braidwood but distance is a constraint).

Water seems a governor for Bungendore. Resolution of size has some implications for rural land, e.g. conserving water catchments and bore-fields. A new storage to supply a bigger Bungendore may impact a whole catchment.

Issue 33: Urban growth options and impacts on rural land.

Possible strategy responses to Issue 33:

The urban scale issue is a matter for Council's urban strategy but regardless, a rural planning review may be needed of land uses near the main settlements and for conservation of urban expansion options and protection of water sources.

3.17 IDEAS FROM AND TRENDS OF OTHER COUNCILS

There is considerable diversity in rural planning and land management approaches across NSW and other states. Research will continue on this aspect as the Strategy develops but some observations can be listed:

- The approach to lot sizing in general rural zones varies considerably. Some councils such as Yass Valley are seeking to lower lot size while others are raising it considerably. Simple options on lot size do not seem to be best for Palerang and a more sensitive, variable lots size and averaging mix seems worthy of investigation.
- There are many rural residents in all Councils surrounding Canberra but only Yass Valley and Palerang seem to have vacant stocks of any scale and to be contemplating further supply at this time. Is this good, bad or optional and where should Palerang go from here – constrain, continue as in the past or aggressively capture?
- The LEPs and DCPs of other Council's offer some specific innovations or extra provisions and Sections 3.18 and 3.19 outline two such provisions.

3.18 AGRICULTURAL VIABILITY CLAUSE?

Some Councils are adding an agricultural viability clause to their Standard Instrument based LEPs. Such a clause allows an applicant by detailed agricultural submission to establish a dwelling house is justified on land otherwise not planned for dwellings. It is normally necessary for the applicant to demonstrate the property agricultural operation can support a serious part-time business as a minimum.

The value of such a clause is debatable while the lot sizes are low. But should Council propose to increase lot sizes, such a clause may increase in importance to allow legitimate intensive agricultural operations on smaller properties.

But the current provisions already contain many options for rural dwellings and most people seeking to establish a legitimate small intensive agricultural operation have a wide range of sites with dwelling rights to choose from.

Like the concept of “rural workers dwelling” and minimum commercial farm size, establishing an objective test for agricultural viability is very difficult. A particular net income might be specified but proving the development can generate it often is quite subjective.

Issue 34: Is an agricultural viability clause needed?

Possible strategy response to Issue 34:

Not considered needed unless lot sizes increase significantly – and then would need a careful specification of a test of viability.

3.19 BOUNDARY ADJUSTMENT CLAUSE?

The Department of Planning and Environment has recently developed a standard clause to allow more flexibility in boundary adjustments where existing dwellings are involved. Standard Instrument based plans without this additional clause have very limited option to allow boundary adjustments if any existing dwellings are involved.

But cases exist where land swaps between commercial farmers are desirable for farm consolidation and provisions that allow excision of an existing dwelling provided no further dwelling opportunities are created, can have merit.

Such a clause is recommended and a copy of the model clause forms Appendix 3.

3.20 PERMISSIBLE USES IN THE E4 ZONE

The rural residential zones of the planning schemes that preceded LEP 2014 have been converted to the E4 Environmental Living Zone.

Issue 35: There has been concern expressed by some landowners in the E4 zone that the permissible uses in this new zone are more restrictive.

Possible strategy response to Issue 35:

Most of the land uses prior to the change to E4 zoning have been preserved. The potential to perhaps slightly widen the range of small businesses that might be permitted will be further explored in the Strategy.

Also, the State Government may issue new directions on the use of E zones (see Section 2.6.12.3). The State review will continue to be monitored.

3.21 POSSIBLE CHANGES TO STATE LEGISLATION AND POLICIES

Issue 36: Impacts of proposed changes to legislation and policy by State Government.

As detailed in Section 2.6.12, the NSW Government currently has a number of reviews in train:

- Proposals for a new Planning Act;
- A major review of all biodiversity legislation; and
- Possible directions and guidelines to issue on the use of Environmental Zones and overlays.

All of these three reviews have the potential to influence the final direction and range of options available to Council to implement its rural vision. At the time of exhibition of this report, no final decisions have been made by the NSW Government and some of the recommendations from the various reports may not be implemented.

Possible strategy response to issue 36:

The Council and the Consultant team will continue to closely monitor the NSW Government draft proposals and adjust strategy options should legislation or policy options alter from current requirements.

4 TOWARDS A RURAL STRATEGY FOR PALERANG

4.1 CONSULTATION ON THIS DRAFT RURAL LANDS STUDY REPORT

Community consultation is an important component of each stage of this project.

The project is being guided by a Committee consisting of all nine Councillors, two Council staff, and representatives from the NSW Office of Environment and Heritage, the Department of Primary Industry, and the Department of Planning and Infrastructure.

This exhibition draft has had input from some rural based community groups, rural business, government and non-government agencies, councillors and council staff. A mix of face to face interviews, telephone interviews, and committee meetings have been used.

Public comment is now being sought on this draft Palerang Rural Land Study Report which has been released by The Rural Land Study Committee for public exhibition. **It is stressed the draft does not at this stage of its development represent any agreed position of Council – it is a draft prepared by consultants to stimulate input from the whole community on the future of rural Palerang.**

To assist community members with information and on how to make submissions, a series of community forums will be held across Palerang in 2015. The exhibition, forum venues and dates will be widely advertised. The localities for the community forums are listed below:

1. Araluen;
2. Braidwood;
3. Bungendore;
4. Bywong;
5. Burra;
6. Nerriga;
7. Carwoola; and
8. Wamboin.

Each forum will be in the form of an open house. There will be 4 stations at each venue:

- GRAFFITI WALL – write your thoughts up on the wall in response to the posted questions.
- MAPPING/DISPLAY AREA – draw on the maps/displays (what you like to do, the planning issues), check out the information provided.

- **GROUP THINK TANK** – at each open house there will be a small group session discussing key planning issues. These will run at a pre-scheduled time at each workshop.
- **CUP OF TEA** – have a cup of tea and chat with the consultants and staff.

The submissions from the consultation will be reviewed and the refined options for problem land use issues and any additional issues raised by the community, will inform the subsequent preparation of the draft Palerang Rural Lands Strategy.

4.2 CONSULTATION ON THE STRATEGY

Once the Draft Palerang Rural Lands Strategy has been prepared it will be exhibited along with the final draft Palerang Rural Lands Study Report in the following manner:

- Notice of exhibition will be placed in the Bungendore Mirror and Braidwood Times once prior to commencement of exhibition and once during exhibition;
- The Draft Strategy will be exhibited for 6 weeks and public submissions will be sought on each component of the draft strategy;
- Community forums will be held in the 8 locations as described above;
- Exhibition documents will be placed in the foyer of Council's offices and the libraries. A computer will be available for members of the community at the Bungendore and Braidwood Council offices;
- The documents will be available on Council's website;
- Appointments can be made with strategic planning staff during the exhibition period;
- CDs and USBs will be prepared for community members (to be provided on request);
- Staff will print hard copies in formats (for example larger font) as requested.

All submissions will be summarised and documented. Planning recommendations contained in each submission will be analysed and the subsequent *change* or *no change* to the Draft Strategy reported (with justifications attached).

Following consideration of submissions, Council will finalise and adopt a Rural Strategy with a 20 year horizon.

4.3 ISSUE RESOLUTION AND OPTION REFINEMENT

The two rounds of community consultation and several input sessions of the Study Committee will give scope for the options to be identified, refined, debated and resolved into preferred options. The final strategy is a vehicle to state how the preferred options can be implemented and their timelines.

5 CONCLUSIONS

This exhibition draft purposely does not draw conclusions to allow the community to advise of further issues and to comment on options without specific positions already being fixed in this report.

6 REFERENCES

- ACIL Allen Consulting (2013), *Greater Capital Region Strategy, Part 2: Skills And Training Gaps Strategy*, Report To RDA Act, Canberra.
- ACT Planning and Land Authority (2007) *Canberra Spatial Plan*.
- Australian Bureau of Statistics * (Dec 2012) - *Australian Social Trends*, Cat no 4102.0:
<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features10Dec+2012#back2>.
- Australian Bureau of Statistics *Value of Agricultural Commodities Produced*, Australia, 2010-11, Cat No. 7503.0.
- Beavis S., (2011). *Draft Water Resources Report*. Unpublished. The Fenner School of Environment and Society, Australian National University. Canberra.
- Carroll L., (2011). *Provision of population information to inform the population pressures report: a report prepared for Palerang Council*. Unpublished. Marsden Jacob Associates. Melbourne.
- Commonwealth Department of the Environment “*Climate change impacts in the Australian Capital Territory*” <http://www.environment.gov.au/climate-change/climate-science/impacts/act>).
- Donaldson S., (2015). *Description of cultural landscape - Palerang LGA* Paper produced for Garret Barry Planning Services Pty Ltd.
- Elton Consulting and Strategic Economic Solutions (2012) *Greater Capital Region. Strategy Stage 1: Economic Opportunities Scanning Project*.
- Garret Barry Planning Services Pty Ltd and Roland Breckwoldt (2015) *Commercial Agriculture in Palerang LGA* (A discussion paper to accompany the draft Rural Lands Study Report)/
- Greater Metropolitan Region Unregulated River Water Sources plan
<http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/Plans-commenced/Water-source/gmr-unreg/default.aspxsource/gmr-unreg/default.aspx>.
- Holloway S., (2011). *Water Quality Snapshot for Western Palerang*. Palerang Council. Bungendore.
- Mineral Resources Branch - Land Use Assessment, Department of Trade and Investment (2014) *Mineral Resource Audit, Palerang LGA*.
- NSW Department of Planning (2006). *The Sydney-Canberra Corridor Regional Strategy 2006-2031*.
- NSW Department of Planning (2007) *SEPP Mining, Petroleum Production and Extractive Industries*
http://www.austlii.edu.au/au/legis/nsw/consol_reg/seppppaei2007924/.

Palerang Council (2006) Braidwood Settlements Discussion Paper.

Palerang Council (2006) Bungendore Settlements Discussion Paper.

Palerang Council (2006) Palerang Settlements Discussion Paper.

Palerang Council (2007) *A Snapshot of the Burra Valley Locality*.

Palerang Council (May 2008) *Palerang Rural, Rural Residential and Environmental Areas Discussion Paper*.

Palerang Council (2011) *Palerang State of the Environment Supplementary Report 2010-11*.

Ploughman S., (2008) *Thematic History Land George, Molonglo Valley and Burra-Palerang Council NSW*.

Palerang Council (2012) *Palerang State of the Environment Supplementary Report 2011-12*.

Profile.id.com.au/Palerang.

SGS Economics and Planning (April 2014) *Industry Investment Attraction Framework Project Final Report - Greater Capital Region Initiative*.

Strategic Economic Solutions (2014) Palerang Economic Profile 2014.

The Peoples Voice - *Australian Community History Online*.
http://peoplesvoice.gov.au/stories/nsw/braidwood/braidwood_c.htm.

Water Sharing Plan for the Murrumbidgee Unregulated and Alluvial Water Sources
<http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/Plans-commenced/Water-source/Murrumbidgee-Regulated-River/default.aspx>.

Water Sharing Plan for the Deua River Unregulated and Alluvial Water Sources
<http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/Plans-on-exhibition/Exhibitions-closed/Deua-River>.

Wild-River S., (2011) *Climate Variability in Western Palerang*. Unpublished. Econtext. Canberra.

Wild-River S., (2012) *Basin Strengthening Priorities*. Unpublished. Econtext. Canberra.

Wild-River S., (June 2012) *Snapshot on Sustainability Report on water management, institutions and issues for Palerang*, Unpublished. Econtext Canberra.

Appendix 1

VEGETATION COMMUNITIES AND THREATENED SPECIES IN THE PALERANG AREA

Appendix 1: Vegetation Communities and Threatened Species in the Palarang Area

Vegetation Communities
Araluen Scarp Grassy Forest in the South East Corner Bioregion
Bangalay Sand Forest of the Sydney Basin and South East Corner Bioregions
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
Lowland Grassy Woodland in the South East Corner Bioregion
Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps Bioregions
Natural Temperate Grassland of the Southern Tablelands of NSW and the Australian Capital Territory
River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions
Tableland Basalt Forest in the Sydney Basin and South Eastern Highlands Bioregions
Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions
White Box Yellow Box Blakely's Red Gum Woodland

Recorded threatened species, populations or communities

Common Name	Scientific Name
Eastern Bentwing-bat	Miniopterus schreibersii oceanensis
Michelago Parrot-pea	Dillwynia glauca
Budawangs Wallaby Grass	Plinthanthesis rodwayi
Black Gum	Eucalyptus aggregata
Bombay Bossiaea	Bossiaea bombayensis
Kydra Dampiera	Dampiera fusca
Araluen Zieria	Zieria adenophora
Small Purple-pea	Swainsona recta
Superb Midge Orchid	Genoplesium superbum
Dwarf Kerrawang	Rulingia prostrata
Tarengo Leek Orchid	Prasophyllum petilum
Nerriga Grevillea	Grevillea renwickiana
Araluen Gum	Eucalyptus kartzoffiana
Mongarlowe Mallee	Eucalyptus recurva
Buttercup Doubletail	Diuris aequalis
Thick Lip Spider Orchid	Caladenia tessellata
Mauve Burr-daisy	Calotis glandulosa

Source OEH web page 2015.

Recorded threatened species key management sites

Bombay	Bombay Bossiaea (Bossiaea bombayensis)
Bells Creek	Araluen Zieria (Zieria adenophora)
Rowes Lagoon area	Dwarf Kerrawang (Rulingia prostrata)
Williamsdale	Small Purple-pea (Swainsona recta)
Tralee-Williamsdale Railway easement	Small Purple-pea (Swainsona recta)
Mount Budawang	Budawangs Wallaby Grass (Plinthanthesis rodwayi)
Mount Currockbilly	Budawangs Wallaby Grass (Plinthanthesis rodwayi)
Morton NP	Nerriga Grevillea (Grevillea renwickiana)
Nerriga/Oallen Ford	Superb Midge Orchid (Genoplesium superbum)
Charleys Forest Rd, Mongarlowe	Superb Midge Orchid (Genoplesium superbum)
Nettletons Creek	Nerriga Grevillea (Grevillea renwickiana)
Majors Creek State Conservation Area	Araluen Gum (Eucalyptus kartzoffiana)
Majors Creek area	Araluen Gum (Eucalyptus kartzoffiana)
Drum Cave	Eastern Bentwing-bat (Miniopterus schreibersii oceanensis)
Captains Flat area	Tarengo Leek Orchid (Prasophyllum petilum)
Collector	Buttercup Doubletail (Diuris aequalis)
Mongarlowe	Mongarlowe Mallee (Eucalyptus recurva)
Warri	Bombay Bossiaea (Bossiaea bombayensis)
Deua National Park	Kydra Dampiera (Dampiera fusca)
Braidwood area	Thick Lip Spider Orchid (Caladenia tessellata)
Bendoura area	Black Gum (Eucalyptus aggregata)
Back Creek Travelling Stock Reserve	Black Gum (Eucalyptus aggregata)
Nadgigomar Nature Reserve	Michelago Parrot-pea (Dillwynia glaucula)
Nettleton's Creek	Michelago Parrot-pea (Dillwynia glaucula)
Back Creek Travelling Stock Reserve	Mauve Burr-daisy (Calotis glandulosa)

Source: OEH web site 2015.

Appendix 2

SOME BACKGROUND ON ABORIGINAL HISTORY

Appendix 2: Some Background on Aboriginal History

Description of cultural landscape – Palerang LGA – version 2

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An Aboriginal land tenure system has existed across Australia for many thousands of years. Whilst Aboriginal social organization across what is now the Palerang LGA can be described according to types of groupings including tribal, sub-tribal, clan and linguistic, religious and economic values determine how features of the natural world are utilised, valued and maintained.

According to local Aboriginal creation mythology *Daramulan* gave form to the land and waterways, created animals [including totems] and humans, gave power to ‘clever people’ and defined the overarching Aboriginal Lore [Rose, James, Watson 2003]. Sadlier recorded a mythological story about Wunbula the Bat and his two wives relating to the Monga area [see Organ 1990]. Another mythological story place in the study area is Dithol [Pigeon House Mt] as described by Mackenzie in 1874 [see Organ 1990]:

‘.....Men, or Kurrakurria [sort of little birds] were playing. The eel starts out of a hole. They ran down to spear him. Went all the way to Pundutba. Thence to Pulinjera. Thence all the way to Moruya, found the deep water. Then all the men and women went along the bank, all the way to Biriry and Yirikul. News went over then to Mirroo, where the two Jea [Fishing Hawk]. Then those two went thence up to the sky. Then those two saw the fish; then those two stuck the spear into him. Then went into the water, then up the beach, fetched out the eel. Men and women were glad, took the eel then and roasted him. They slept, the eel was burning. The pheasant came out and put him in the jukulu [bark off the excrescence of a tree, used as a vessel for holding honey or other food], took the eel out of the fire and carried it away to Didthul. The men and women got up. ‘Where’s that fish belonging to that pheasant?’ They fought for that fish. The pheasant cut off the eels head and stuck it up, then called it Didthul....’

The term ‘totem’ is used to describe the complex inter-relationship between people and the natural world, the two providing mutual benefits to each other through a spiritual, yet tangible inter-dependency. Although the term ‘totem’ is not widely used in this region, the relevant cultural practise does [Elkin 1938; Rose, James and Watson 2003; Donaldson 2012]. Totems can stand for or represent an aspect of the natural world as well as provide kinship links between the people or group whom identify with a particular totem, as well as kinship links to the natural world. Accordingly, totem species become part of a koori person’s extended family, a relationship develops between a person or group and a totemic species which allows for mutual protection and assistance through ongoing environmental interactions. Overarching each of these facets is the need to teach each generation the value of respect and obligation in relation to totems [Rose 2003]. Accordingly, cultural teaching places are integral components to the cultural landscape in relation to totem species and their habitat [Donaldson 2012].

On a linguistic level, the eastern extent of Palerang LGA is usually associated with the *Dhurga* [Thoorga/Durga] language region with Ngunawal across the west and Ngarigo across the south [Wesson 2000:118]. Tribal groups recorded as being associated with the area now comprising the Palerang LGA include the Ngunawal in the west, north west; the Walgalu in the central west; the Ngarigo in the south west; the Walbanga in the east; and the Wandandian in the north east [Tindale 1974; Series AA338/15].



Aboriginal tribal boundary map, south east detail. Tindale 1974.

Movement across the landscape was common for economic, ritual and social reasons; in the case of the tribal groups associate with Palerang LGA connectivity with the Snowy Mountains and South East coast was maintained. The coastal area was tribally affiliated with the *Yuin* (*Murring*) people recorded by Howitt in 1904 as extending from the Shoalhaven River in the north, to Cape Howe in the south and west to the Great Dividing Range. In 1844 Robinson and later Howitt [1904] and Mathews [1904], recorded a number of intermarrying groups across the south coast and nearby mountain ranges. They found that the Kudingal [Katungal] 'live by the sea coast by catching fish' and the Paiendra [paie = tomahawk] live in the forest and source food by climbing trees. The Paiendra were also called 'waddyman' by early settlers in reference to their practise of climbing trees in search of game for food [Howitt 1904]. The territory of this later group would have extended into what is now Palerang LGA, whilst the Katungal would have been their regular visitors.

A further exogamous division was recorded between Cape Howe and the Shoalhaven; the *Guyangal* [guya = south] occupying the southern area between Mallacoota and the Moruya River, and the *Kurrial* [[kurru = north] who occupied the northern area between the Shoalhaven and the Moruya Rivers, including the Braidwood district [Clark 2000].

A number of smaller named sub tribal or clan groups were recorded during the early contact period across what is now the Palerang LGA, as collated by Wesson [2000]; Arralooin [Flanagan 1883], Munkata [Sadleir 1841] associated with the Braidwood region, Jineroo [Elrington 1833] near Mt Elrington, Molongla [Elrington 1833] associated with the Molonglo River and Majors Creek, Nammitong [Robinson 1844] associated with the Murrumbidgee Limestone Plains, Mudbury [Ryrie 1834] associated with Curraduckbidy, Yarererlumler [Robinson 1844], Tugerrernong [Robinson 1844] and Currowan [Oldrey 1842]. Many of these terms have been adopted as place names today.

Whilst interactions between Aboriginal people and Europeans in the region began with Cook's 1770 observation of 5 Aboriginal men standing on the shore north of Batemans Bay, white settlement did not take hold until small portions of land were granted in the 1820. Andrew Badgery was guided to the Araluen area by an Aboriginal person and had established a cattle run by 1828 [Ellis 1983:48]. Wilson then established the Braidwood Farm in the 1830s and the 1850s gold rush drew newcomers into the Araluen River and its

tributaries. This increase in population put strain on the use of natural resources and gave new meaning to the landscape beyond Aboriginal religious values.

The term 'King', or 'Queen' was often bestowed along with a metal plaque known as a 'gorget', 'king', 'breast' or 'brass' plate in honour of Aboriginal people who were considered to be leaders by the non-Aboriginal population in Australia during the nineteenth and early twentieth century. Today 'gorgets' represent both the effect of the European culture on the Australian Indigenous population, and a link to the land and history of specific Indigenous groups in Australia [Troy 1993]. A breast plate was made for 'Jack the Traveller, King of Bendora Bellevue and Jembicumbane', presumably in the late nineteenth century. Bendora Bellevue is likely to have been Bendora Station on the Shoalhaven River and Jembicumbane is what we know today as Jembaicumbene Creek [Troy 1993: 78 – 79]. A kangaroo is engraved on the right horn, and an emu on the left horn. A man holding a rifle is engraved in the centre of the plate [Edmund O Milne collection 1985.59.371].



Breast plate for 'Jack the Traveller, King of Bendora Bellevue and Jembicumbane', Edmund O Milne collection 1985.59.371 / NLA.

The life of 'Jack the Traveller' and the precise cause of death and subsequent burial of 80% of the Aboriginal population across the south east between in the late 1900s remains unknown.

Early records of tribal meetings also tell us about the importance of certain localities and the pathways linking them. In 1740 hundreds gathered at Bendethera from coastal and tribal lands; in the 1830s approximately 800 Aboriginal people from the south coast and Monaro met at Apple-Tree Flat near Araluen to resolve a dispute [Kennedy 1978:21]; in 1831 Lieutenant McAllister met a group of Aboriginal people at Jembaicumbene at discuss a dispute [Organ 1990:170]; in 1850 hundreds journeyed from across the region to Mumbler Mountain near Bega, including 279 from Queanbeyan and 205 people from Braidwood, 227 from the Shoalhaven and over 200 from Moruya and Broulee; in 1853 Aboriginal people from the south coast camped at Weedy Flat at Araluen and fought with the Monaro tribe [Kennedy 1978:21]; in 1859 a large gathering took place at Queanbeyan; in 1860 more than 200 Aboriginal people walked from Maneroo to the Clyde and met up with tribal people from the Murray River; and in 1872 a large corroboree was held on the Braidwood gold fields, with representations from Broulee, Shoalhaven and coastal districted attended [Wesson 2000: 163].

In 1840 the NSW Land and Emigration Commissioners concluded that 'moderate reserves' should be set-aside for Aboriginal people to 'enable them to live, not as hunter-gatherers, in which case no good would be done, but as cultivators of the soil'. The Land Act of 1842 enshrined these views and allowed Crown land to be reserved from sale for the use of Aboriginal people (Goodall 2008:52). This Act reflects a protectionist legacy of the NSW state government towards Aboriginal people from the 1840s until around the 1940s.

Following the passing of the 1861 Lands Act Aboriginal demands for secure land tenure increased, as supported by Church groups, and leading to the 1859 protests by the Aboriginal people of Cummeragunja on the VIC/NSW border and the establishment of 32 new reserves across NSW between 1861 – 1884 (Goodall 2008:100). Similar demands were heard across all of NSW and in 1881 a Protector of Aborigines was appointed who recommended that land be reserved from sale throughout the state and that Aboriginal people should be encouraged to move to these ‘reserves’. In 1883 the Aborigines Protection Board was established to manage reserves and control the lives of Aboriginal people across New South Wales. By the 1940s there were over 180 Aboriginal reserves gazetted across New South Wales, and almost 300 by 1970. One such reserve was gazetted on the 15/4/1893 on Currowan Creek in the Parish of Currawan, County of St. Vincent. Records show that the 60 acre reserve was frequented by Aboriginal families and was revoked in on the 9/5/1956.

Other Aboriginal reserves established across the region during this era include one at Mongarlowe in 1879, one at Tomakin in 1884, two at Moruya between 1883 and 1885, a large one at Wallaga Lake in 1891 and one at Batemans Bay in 1902. As a result, many of the people associated with the Paiendra tribe, found themselves in Katungal country surviving ‘by the sea coast catching fish’. Over the years all of the reserves were revoked and reverted to other tenure types now under public and private ownership.

Other connections recorded between people and places across the region relate to conflict caused by grouping many tribes together and the subsequent Diaspora from the Braidwood/Majors Creek area. As described by Egloff et al [2004] Braidwood became a ‘melting pot of Aboriginal groups from Goulbourn, Bungonia, Jembaicumbene, the Shoalhaven and local people’. Either as a result of colonial upheaval or in accordance with routine tribal conflict resolution, an intertribal battle took place between the Braidwood and Moruya tribes in the 1830s in the Kiora area, on the Deua River [Goulding and Waters 2005] and in 1846 it was reported that many Braidwood ‘blacks’ were driven to the seacoast where they remain [Allan in Egloff 2004: 46].

The movement of people from the ranges to the coast occurred over a number of years. Jane Brown seems to have left Braidwood by 1835, Walloo alias Mr Hunt who was a ‘full blood initiated man who had his upper incisor removed’ was in Braidwood at least until 1834; in 1872 after being declined the gazettal of a reserve for Araluen Billy, Mondalie alias Jack Bond moved to Moruya; Mary O’Brien was born at the Majors Creek goldfield in 1860 remained in Braidwood until 1880 and Margaret Bryant was recorded as being at Mongarlowe Reserve in 1885. By 1890 there were only four Aboriginal women and two children remaining in Braidwood and by 1900 there were no Aboriginal people in the Braidwood although the Bond family returned to Majors Creek in 1881; and Mary Ann Willoughby was still at Mongarlowe with her children in 1902 before shifting to Majors Creek and Sydney, and the Thomas family lived at Jembaicumbene until at least 1909 [Egloff, Peterson and Wesson 2004].

Whilst a diversity of traditional, historical and contemporary cultural attachments across the region have developed in response to the specific historical context, the land, waters and people are connected through kinship, totemism, and the ingrained cultural responsibility of caring for country today as in the past.

References

- Clark, I.D., (ed.) 2000. The Journals of George Augustus Robinson, Chief Protector, Port Phillip Aboriginal Protectorate, Volume 4: 1 January 1844 – 24 October 1845. Heritage Matters, Ballarat. (ML).
- Tindale, N. 1974. Aboriginal Tribes of Australia. Canberra: Australian University Press. Series AA338/15 - Maps - Expeditions, field work and personal research.

- Wesson S 2000 An Historical Atlas of the Aborigines of Eastern Victoria and Far South-eastern New South Wales, Monash Publications in Geography and Environmental Science # 53, Monash University, Melbourne.
- Mathews, R.H.. 1904. 'Ethnological Notes on the Aboriginal Tribes of New South Wales and Victoria: Part 1', Journal and Proceedings of the Royal Society of New South Wales, Vol. 38, pp.203-381.
- Troy, J 1993 King Plates: A history of Aboriginal gorgets. Aboriginal Studies Press.
- Organ, M. 1990. A Documentary History of the Illawarra and South Coast Aborigines. Aboriginal Education Unit, Wollongong University.
- Egloff B, Peterson N and Wesson S (2004) Biamanga National Park and Gulaga National Aboriginal Owners Research Report, Report to the Office of the Registrar (AIATSIS).
- Goodall H 2008 Invasion to Embassy. Sydney University Press: Sydney.
- Goulding M and Waters K 2005 Eurobodalla Aboriginal Cultural Heritage Study. South Coast New South Wales. Report to Eurobodalla Shire Council.
- Howitt 1904 (1996) The Native Tribes of South-East Australia, Macmillan & Co London.
- Edmund O Milne collection 1985.59.371 / NLA. <http://trove.nla.gov.au/version/51394133>
- Ellis N 1983 Braidwood Heritage: Historical photographs. Braidwood and district historical society, Braidwood, NSW.
- Donaldson S. 2012 Exploring ways of knowing, protecting & acknowledging Aboriginal totems across the Eurobodalla Shire Far South Coast, NSW. Report to the Eurobodalla Shire Council, Moruya, NSW.
- Elkin, A. P. (1979) [1938]. *The Australian Aborigines*. Angus & Robertson. Sydney, NSW.
- Rose D., James D., and Watson C. [2003] Indigenous Kinship with the Natural World in NSW, NSW NPWS.

Appendix 3

DRAFT BOUNDARY ADJUSTMENT CLAUSE

Appendix 3: Draft Boundary Adjustment Clause

4 Boundary changes between lots in certain rural, residential and environment protection zones

- (1) The objective of this clause is to permit the boundary between 2 or more lots to be altered in certain circumstances, to give landowners a greater opportunity to achieve the objectives of a zone.
- (2) This clause applies to land in any of the following zones:
 - (a) Zone RU 1 Primary Production,
 - (b) Zone RU3 Forestry,
 - (c) Zone RU4 Primary Production Small Lots,
 - (d) Zone R5 Large Lot Residential,
 - (g) Zone EI National Parks and Nature Reserves,
 - (h) Zone E2 Environmental Conservation,
 - (i) Zone E3 Environmental Management,
 - (j) Zone E4 Environmental Living.
- (3) Despite clause 4, development consent may be granted to the subdivision of 2 or more adjoining lots, being land to which this clause applies, if the subdivision will not result in any of the following:
 - (a) an increase in the number of lots,
 - (b) an increase in the number of dwellings or dual occupancies on, or dwellings or dual occupancies that may be erected on, any of the lots.
- (4) Before determining a development application for the subdivision of land under this clause, the consent authority must consider the following:
 - (a) the existing uses and approved uses of other land in the vicinity of the subdivision,
 - (b) whether or not the subdivision is likely to have a significant impact on land uses that are likely to be preferred and the predominant land uses in the vicinity of the development,
 - (c) whether or not the subdivision is likely to be incompatible with a use referred to in paragraph (a) or (b),
 - (d) whether or not the subdivision is likely to be incompatible with a use on land in any adjoining zone,
 - (e) any measures proposed by the applicant to avoid or minimise any incompatibility referred to in paragraph (c) or (d),
 - (f) whether or not the subdivision is appropriate having regard to the natural and physical constraints affecting the land,
 - (g) whether or not the subdivision is likely to have an adverse impact on the environmental values or agricultural viability of the land.
- (5) This clause does not apply:
 - (a) in relation to the subdivision of individual lots in a strata plan or a community title scheme, or
 - (b) if the subdivision would create a lot that could itself be subdivided in accordance with clause 4.1.