ORANGE
Australia's Colour City

Orange Sustainable Settlement Strategy and Local Environmental Study

PB PARSONS BRINCKERHOFF
100 YEARS

Sustainable Settlement Strategy and Local Environmental Study

February 2004

Orange City Council

PARSONS BRINCKERHOFF

Parsons Brinckerhoff Australia Pty Limited ACN 078 004 798 and
Parsons Brinckerhoff International (Australia) Pty Limited ACN 006 475 056
trading as Parsons Brinckerhoff ABN 84 797 323 433

PPK House
9 Blaxland Road
Rhodes NSW 2138
Locked Bag 248
Rhodes NSW 2138
Australia
Telephone +61 2 9743 0333
Facsimile +61 2 9736 1568
Email sydney@pb.com.au

ABN 84 797 323 433
NCSI Certified Quality System ISO 9001

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Author: Greg New, Jeremy Blackwell, Fiona Court

Reviewer: Bruce Colman

Approved by: Bruce Colman

Signed: .....

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Abbreviations

Abbreviation	Description
AHD	Australian Height Datum
CBD	Central Business District
DIPNR	Department of Infrastructure, Planning and Natural Resources
DPWS	Department of Public Works and Services
EIS	Environmental Impact Statement
EP	Equivalent Persons
EP&A Act	Environment Planning and Assessment Act
ET	Equivalent Tenements
GPT	Gross Pollutant Traps
Ha	Hectares
IWCM	Integrated Water Cycle Management
kPa	kilo Pascals (i.e. 1,000 Pascals)
kV	kilo Volts (i.e. 1,000 Volts)
LEP	Local Environment Plan
LES	Local Environment Study
ML	Mega Litres (i.e. 1,000 litres)
OLALC	Orange Local Aboriginal Land Council
PAD	Potential Archaeological Deposit
PMF	Probable maximum flood
RTA	NSW Roads and Traffic Authority
SSS	Sustainable Settlement Strategy
TWP	Top Water Level
WSUD	Water Sensitive Urban Design
WTP	Water Treatment Plant
WWTW	Waste Water Treatment Works

Executive Summary

Need for a strategy

Orange City Council, as part of its charter to responsibly plan for the city's future, decided in 2003 to prepare a Sustainable Settlement Strategy. In response to developer interest in making more land available for urban residential purposes at the time, Council proposed an integrated approach of investigating the strategic urban growth and release issues and undertaking more detailed planning investigations over the land identified for future release by the developers.

Council therefore engaged Parsons Brinckerhoff to investigate the strategic urban growth and release issues for Orange and to prepare the strategy on its behalf. The preparation of such a strategy is important to the ongoing responsible management of land use decisions in the City, in that it:

- *gives landowners and investors greater certainty about the future;*
- *removes the speculative element in subsequent land use planning and settlement;*
- *informs landowners whose land falls outside the strategy release areas so they will be less likely to have false expectations;*
- *decreases conflict over land use decisions in the future;*
- *decreases wastage in public or private resources;*
- *increases good decisions made at the local environmental planning or development stages; and*
- *ensures there is enough land available to prevent large increases in land prices.*

Strategy purpose and objectives

The purpose of the Sustainable Settlement Strategy is to provide Council with a strategic plan to manage growth and to provide strategic direction for urban and rural residential land release in the City.

The objectives of the Sustainable Settlement Strategy are to:

- *undertake a strategic analysis into the supply and demand characteristics for urban and rural residential growth, investigating possible supply issues in land zoned for residential development that is yet to be developed;*
- *determine the infrastructure servicing constraints (in terms of provision, costs and sequencing) in the Sustainable Settlement Strategy study area;*
- *identify the appropriate direction and form for future growth in the City, including revisiting the role of the existing Rural Residential zoned land in the vicinity of Gorman Road and Murphys Lane; and*
- *the staging options for land release in the City.*

The study area for the Sustainable Settlement Strategy (or SSS) includes land to the south and to the north/north west of the City, as shown in Figure 1.1. The southern portion of the strategy area is approximately 973 hectares. The north/north western portion has an area of approximately 1,358 hectares. The boundaries of the SSS study area were identified by Council and represent its assessment of the likely maximum extent of urban residential land opportunities for the foreseeable future.

Local environmental study

Council has received representations from owners of land within the SSS study area between The Escort Way and Mitchell Highway suggesting that the land has potential for urban development. Council has agreed to have the area investigated as part of the wider Sustainable Settlement Strategy investigations. A 'Local Environmental Study' must be prepared before land can be rezoned and it must consider the relevant influencing environmental factors before a council decides if the current land use and development potential should be changed. The study area for the Local Environmental Study (described in this report as the LES study area) is also shown in Figure 1.1.

The objectives of the Local Environmental Study are to:

- *undertake investigations to identify the constraints and opportunities and the capability and suitability for the LES study area for new urban and/or rural residential development;*
- *identify a preliminary potential development envelope for new urban and/or rural residential development;*
- *identify an appropriate form and pattern for new urban and/or rural residential development within the preliminary potential development envelope; and*
- *identify development principles and guidelines for new urban and/or rural residential development.*

Urban structure

Orange is a relatively prosperous inland city with a history of steady population growth. The city and surrounding region has a varied economic base underpinned by agriculture, service industries, retailing and tourism. These factors suggest that the city will continue to grow in the medium to long term.

The physical urban structure which supports economic activity in the city is based on a tight central square-mile grid of streets and lanes established in the nineteenth century. In the post World War II period, urban growth has continued beyond the grid toward the distributor road reservation.

Orange will continue to need more land to accommodated urban growth in the future. Key constraints to be considered in decisions about where growth should occur include:

- *water catchment areas affecting most of the land to the south and east of the city;*
- *fertile agricultural lands to the south and west of the city and buffer areas around agricultural activities;*
- *buffer areas around industrial areas (particularly those situated to the north and north east of the city);*
- *ridgelines, scenic quality areas and environmentally sensitive areas;*
- *areas which are either currently developed for residential or rural residential development, or which is required for institutional or special use purposes; and*
- *areas for which the cost of servicing would render urban development uneconomic.*

These constraints have been well documented in previous planning exercises and has led to urban expansion policies being focused to the north and north west edges of the city.

In the future, population growth could be accommodated by:

- *consolidation or infill development in the existing urban area;*
- *identifying new urban release areas; or*

- *a combination of both.*

Council, in planning for Orange's future, needs to balance the demands for growth, with the capability of the land to support desirable and sustainable urban development. Care needs to be exercised in the planning of new urban areas to avoid 'placeless' sprawl. This implies the creation of integrated and more 'self-contained' communities.

Planning context and framework

State, regional and local plans provide a well-documented framework for the key issues confronting Orange City Council in responding to urban growth and development issues. Many of the issues and objectives raised in the earlier plans for Orange's future development remain just as important today. These include:

- *protecting the viability of the local agricultural economy by quarantining highly productive agricultural lands from urban development;*
- *conserving the landscape character and scenic quality of Orange by sensitively accommodating (or avoiding) development on ridgelines;*
- *safeguarding Orange's drinking water supply by excluding urban development from the Suma Park Dam water catchment;*
- *facilitating urban development in the areas which allow urban infrastructure services to be provided in a cost-efficient manner;*
- *reserving land to facilitate the provision of key infrastructure which would be required by urban communities in the future;*
- *new urban areas should be unified neighbourhoods characterised by a 'community feel' with a basic level of services available locally;*
- *locating urban development away from areas affected by hazards, including risk of flood, fire, erosion, slip or subsidence;*
- *accommodating rural residential living opportunities on less productive rural lands and in locations which would not frustrate the cost-effective provision of urban residential living opportunities;*
- *maintaining the primacy and economic viability of the Orange CBD as the city's pre-eminent business centre;*
- *accommodating expansion in industrial employment in new industrial areas to the north of the CBD adjacent to the railway line;*
- *safeguarding important heritage and ecological assets in any land use and development decisions; and*
- *overall, to ensure that the development of land is carried out in as orderly and efficient manner as possible, with reference to the principles of ecologically sustainable development.*

Community and stakeholder issues

Stakeholder consultation was undertaken as part of the preparation of the Sustainable Settlement Strategy. The stakeholders involved in the liaison and consultation program for this strategy included directly affected and adjoining landholders, local community representatives, interested individuals, the general public, local service providers and key government stakeholders.

Many issues and concerns were raised by stakeholders about the prospect of future urban growth in Orange. These are issues that all growing communities are likely to confront including:

- *addressing access and traffic management needs;*
- *urban design and the appearance of the new areas – do they reflect existing town character?;*
- *land value and rating issues in the transition to urban uses – will some people be disadvantaged?;*
- *supporting infrastructure (for example, sewerage) impacts and costs; and*
- *the potential impacts of development on the natural environment.*

However, the consultations elicited a particular concern which has echoed through investigations of the planning of Orange for the last thirty years – that of the urban/rural interface. Intensive agriculture and rural views and outlooks are viewed as special qualities of Orange. The particular rare combination of soils, climate and aspect of the Orange district make it unique and significant for agricultural activities such as orchards and grape growing. The relative health of the city hinterland's intensive agriculture is considered to have flow-on effects for the ongoing viability of another locally-significant economic activity – tourism.

Fears were raised that future higher density urban development would, because of its displacement of existing rural land uses, harm or destroy these features which are considered important to the overall prosperity of the city. The setting aside of land for future housing opportunities and urban development is seen by many as being subservient to supporting agricultural pursuits.

The second key debate was one where the norms of development in Orange were challenged. The issue of environmental sustainability was questioned:

- *Are rural residential lots a sustainable way forward for the community?*
- *Can the CBD accommodate high quality higher density residential structures? Can apartments and townhouses be on the agenda?*
- *Is the conflict between rural residential and agriculture destroying agriculture near the town of Orange?*
- *Should we ensure new urban development is compact, to reduce the impact on remaining rural residential and agricultural pursuits?*
- *Should those areas closest to Orange be developed first at reasonably high densities to avoid satellite suburbs being created that have their own character and a separate sense of place?*

Given these issues and debates which emerged, it can be concluded that there was a widespread view which was expressed among stakeholders that land should be developed as efficiently as possible, that integrated rather than separate communities be encouraged, and that the viable agricultural land and rural views should be maintained as much as possible.

Residential land supply and demand

An analysis of urban residential land supply and demand was undertaken for the strategy. The analysis used reasonably conservative growth assumptions and applied reasonable assumptions to the projected rate of household formation. The analysis concluded that, without further rezoning of land, shortages across some of the housing land price sub-markets may begin to be noticed sometime between 2008 and 2010, that is, four to six years from now.

The findings of this broad analysis suggest that Council should be undertaking a strategic assessment of further land development opportunities. Other reasons that Council should pursue this approach include the following:

- *there is a need to commence the land identification process well in advance of the allotments being created due to the protracted nature of the rezoning and development process;*
- *the community demands that decisions about future urban areas be made well in advance of development actually taking place. This is because prospective residents make their housing investment decisions based on information contained in Council's urban plans and policies; and*
- *Council needs to identify future city growth opportunities to provide choice in the land market. It is not enough to say that because there are a certain number of allotments remaining that there is a sufficient supply. Within Orange's residential land market there are a range of sub-markets in terms of price, size and perceived prestige of certain release areas, and some land is being withheld from the market by owners not ready to develop. A range of allotments needs to be maintained to suit these different markets at any one time, to maintain choice for the range of homebuyers in Orange, and to plan and fund infrastructure.*

Urban infrastructure

The provision of infrastructure is not a constraint to the development of any part of the SSS study area however capacities within the existing system give a preference for the staging of development.

In general, development of the SSS study area should seek to improve and augment the existing infrastructure.

Accounting for the Council's previous and planned investment in water, waste water, and transport provisions, from an infrastructure efficiency perspective, new urban development in the short and medium term should be facilitated in the existing Urban Residential and Urban Transition zoned lands in the northern part of the SSS study area.

There are significant infrastructure costs associated with servicing the west and south and to limit capital expenditure the Council should not encourage new urban development on too many fronts. After the north, development of the southern and western areas carries approximately equal preference.

Infrastructure matters to consider in balancing the relative merits of the western and southern areas include:

- *the timing of construction of the distributor road which is currently low priority through the south giving preference to the west; and*
- *the decision to expand the existing WWTW or delay the construction of a new facility would give preference to development of the south.*

Structure Plan overview

Considering the directions for future urban growth, based on broad investigations of land capability and land demand, and on community values articulated as part of this project, there are two short term strategies available to accommodate the urban growth demands of Orange. These are:

- *urban development should be facilitated in areas already zoned for that purpose. This includes all land zoned Urban Residential under Council's LEP – both vacant and developed areas. Opportunities for infill housing in the developed areas are already supported by LEP 2000. This policy should continue in order to provide greater housing choice for Orange residents close to existing services, in a demographic context of declining household sizes and an aging population; and*
- *the next front for urban expansion should be on land zoned Urban Transition to the north of the existing Orange urban area. The future use of this land for urban purposes has been supported by planning studies and planning instruments over many years. In addition, Council has programmed the delivery of urban infrastructure to support*

its future use for urban purposes and it makes economic sense for this infrastructure to be utilised when demand warrants.

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

- *the future plans associated with key institutional sites (such the NSW Agriculture Research Station and the University of Sydney lands) which, although once relatively remote from the city, could in the future play a role in accommodating urban expansion.*
- *the ability for certain under-utilised areas (from an urban development perspective) on the very fringe of the current urban area to be more efficiently subdivided to help cater for urban expansion.*
- *choices for the Council and community in terms of balancing whether to:*
  - *directing new urban development towards the south, which has the advantage of being closer to the CBD and other facilities and services (including the proposed base hospital); or*
  - *direct urban growth to the Broken Shaft Creek valley, which has the advantage of having land in which ownership is less fragmented, and where the agricultural versatility of the land is more limited, than in the south.*

Urban planning policies and development phasing activities for the various areas covered by the structure plan should be in accordance with the potential development roles and planning priorities established in Table S.1 and Figure S.1.

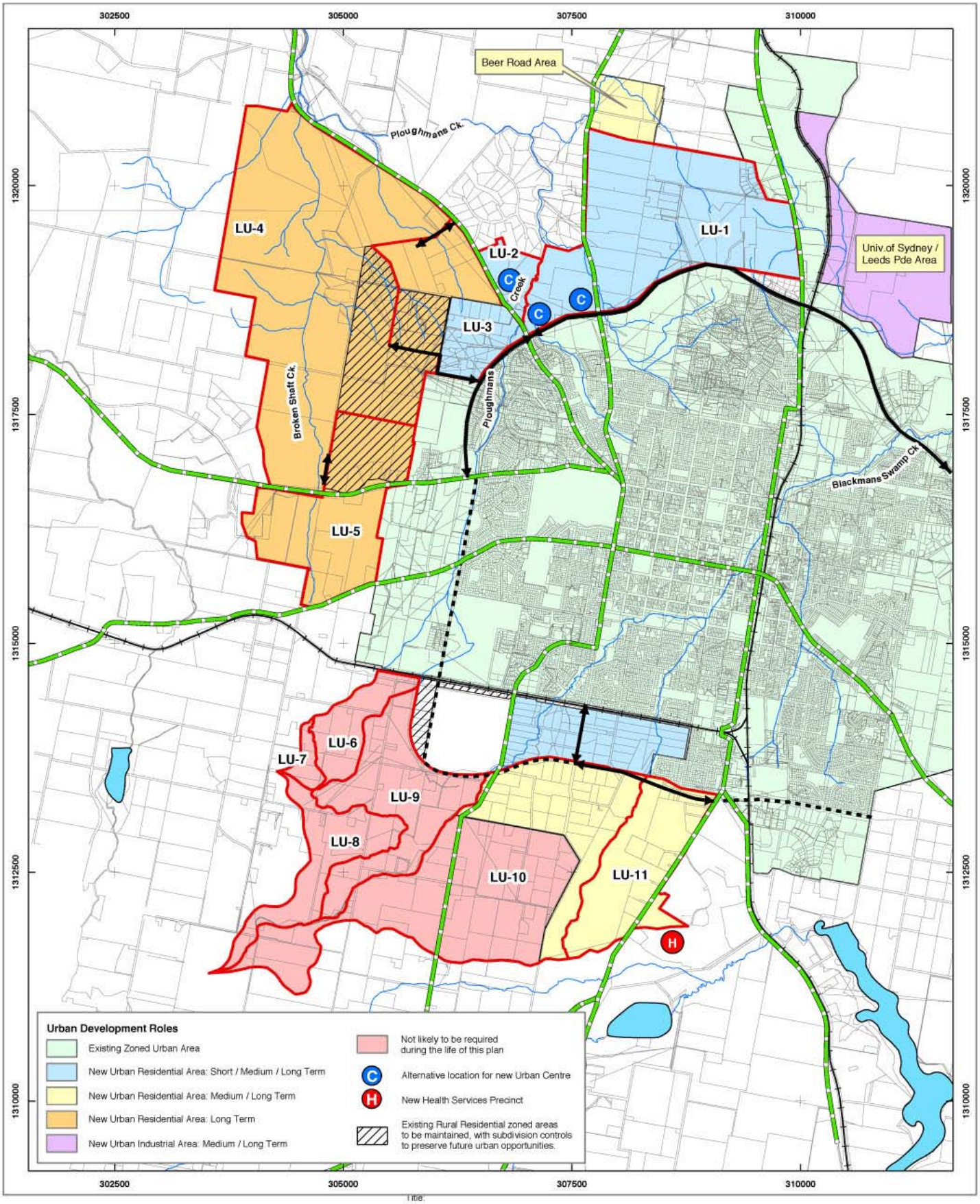
Table S.1: Potential Development Roles for Structure Plan Areas

Land Unit	Potential Development Role^		Comments / Actions
	Short Term	Medium to Long Term	
Existing Urban	Urban residential	Urban residential	Council to continue to implement policies which encourage infill housing throughout the city.
North			
LU-1	Urban residential	Urban residential	Also consider need for and location of new centre.
LU-2	Urban residential	Urban residential	
North West			
LU-3			
Ploughmans Creek catchment	Rural residential	Urban residential	Urban endorsed because of the need to use housing land on the fringe of the urban area more efficiently.
Other land	Rural residential	Rural residential*	Structure plan assumes that urban development in Broken Shaft Creek valley would have a lower priority than South areas.
LU-4	Rural and rural residential	Rural and rural residential*	
LU-5	Rural and rural residential	Rural and rural residential*	Building siting and subdivision controls should be implemented which allow urban residential development to displace rural residential development when Council decides that Broken Shaft Creek valley should be developed for urban purposes.
South			
LU-6	Rural	Rural	Unlikely to be required for urban development during the life of the plan.
LU-7	Rural	Rural	Unlikely to be required for urban development during the life of the plan.
LU-8	Rural	Rural	Unlikely to be required for urban development during the life of the plan.
LU-9	Rural	Rural	Unlikely to be required for urban development during the life of the plan.

Land Unit	Potential Development Role^		Comments / Actions
	Short Term	Medium to Long Term	
LU-10	Rural	Urban residential for northern area Rural or rural residential for southern area	Part of a South urban growth strategy. Urban development in the north subject to further planning and feasibility studies. Desirable to retain southern portion for rural and residential land uses.
LU-11	Rural+	Urban residential	Part of a South urban growth strategy. Urban development dependent upon Crown land activities being removed or relocated – discussions with agencies need to be commenced.
Supplementary Areas			
Land north of LU-10	Rural residential	Urban residential	Part of a South urban growth strategy. Comprises land generally east of Towac Park Racecourse. Urban development subject to further planning and feasibility studies.
Land north of LU-1 'Beer Road Area'	Rural	Urban residential	Comprises land west of the ridgeline, either side of Beer Road. Urban development subject to further planning and feasibility studies.
Land east of LU-1 'U.Syd and Leeds Pde Area'	Special uses (University)	Urban industrial	Urban development dependent upon university's future plans for their facility.

^ short, medium and long term are generic descriptions of periods relating to the scope of a 20 year structure plan horizon
* assumes that controls are implemented to preserve opportunities for urban development in the long term
\+ may be a limited urban role in the short term associated with base hospital development

Detailed actions and strategies to effect the proposed development roles are contained in Section 7.7 of the SSS.



Cadastre
Watercourse
Upgraded Access Link
Railway Line
Key Access Roads
Distributor Road Reservation
Land Units
Reservoir

N

0 500 1,000 1,500 m

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Title: Structure Plan

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		Datum: ISG66 / Zone 55_3	Scale: 1:40,000
Project:	Orange Sustainable Settlement Strategy and Local Environmental Study	Drawn: SWD	Date: 05 Feb, 04
Client:	Orange City Council	Designed: GN	Date: 05 Feb, 04
Proj. No. 2116298A	Layout Size: A3	Checked: GN	Date: 05 Feb, 04
GIS Proj:	O:\A353-Environmental\Nov02-Oct03\Projects\2116298A_2049a_Structure_Plan_A3.mxd	DWG. No: 2116298A_2049a	Figure: S.1

Local Environmental Study

Results

Environmental attributes within the LES study area were assessed and mapped. The environmental constraints affecting the study area identified in Section 9 were mapped. The constrained areas identified as having a 'high' rating were sieved and a preliminary urban development capability map was produced.

The environmental constraints which are critical in defining the development envelope of the study area include:

- *areas essential for the achievement of water quality and quantity objectives;*
- *areas of high archaeological significance;*
- *areas of high ecological significance and corridors to link these areas;*
- *buffer areas required to maintain feasible agricultural land use on adjoining lands; and*
- *broadly contiguous areas with significant slopes (in this case, a benchmark of 15 percent is used).*

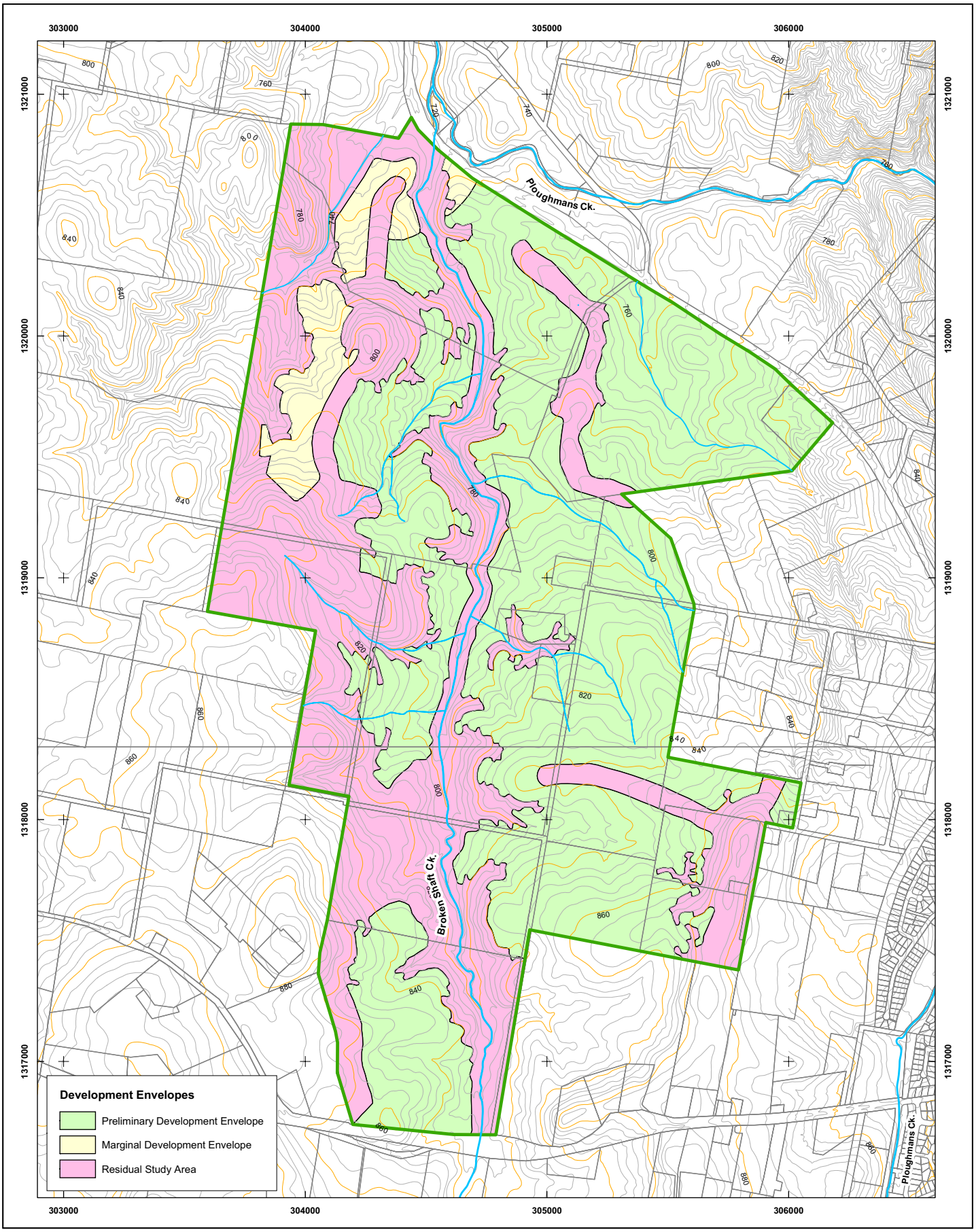
Mapping of these constraints combine to produce a preliminary development envelope (refer to Figure S.2), which could be considered as candidate areas for future urban residential or rural residential development. Further detailed studies may be carried out in the future which provide a more accurate picture of which areas should or should not be developed. Other environmental issues and constraints, including salinity, contaminated land, visual quality, infrastructure, landscape treatment of minor watercourses, flood levels and bushfire hazard, remain important site development issues to be considered in the future, but are not included at this stage to impose additional significant constraints on the development of the land.

The preliminary development envelope comprises land mainly to the east of Broken Shaft Creek. Areas east of the creek (in addition to an area in the south and located west of the creek near The Escort Way) also provide the most opportunities for the provision of contiguous land units of sufficient size which would lend them to development staging. The constraint mapping suggests that if any development is to be allowed apart from rural uses, rural residential development may be the most appropriate for lands within the disjointed envelope west of the creek.

The envelope suggests a location for the site and buffer area required for a future wastewater treatment plant to service new urban areas. A location for this facility could be found within the ecological corridor/agricultural buffer area in the north west corner of the site, with limited impact on the development envelope east of Broken Shaft Creek.

There is also an area of marginal development potential within the preliminary development envelope. This area is also shown in Figure S.2 and acknowledges:

- *that a wastewater treatment plant may be situated in the study area;*
- *the arrangement of ridgelines in the north western part of the study area (and beyond) and their importance in contributing to visual quality; and*
- *a precautionary approach to providing ample separation wherever possible between agriculture and rural residential/residential development (that is, a buffer in excess of that discussed in Section 9.1).*



LES Study Area

Cadastre

Topographic Contours

4 m

20 m

N

0 200 400 600 m

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Title:

LES Study Area
Preliminary Development Envelope

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ORANGE

Datum:	ISG66 / Zone 55_3	Scale:	1:15,000
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GIS Proj: O:\A353-Environmental\Nov02-Oct03\Projects\2116298A_2047_Preliminary_Development_Envelopes_LES_Area_A3.mxd		DWG. No: 2116298A_2047	Fig. No. S.2

LES study area development strategy

The recommended development strategy for the LES study area should respond to the strategic directions established by the Sustainable Settlement Strategy (Part C of this report). The Strategy provides a basis for preserving the options for the LES study area to meet the long term urban growth needs of the City of Orange. It applies in the circumstance where the Council decides that urban residential development in Broken Shaft Creek valley should proceed.

Assuming that Council decides to support urban development in the future in the LES study area, the recommended development strategy may be summarised as follows:

- *the continuation of stock grazing and other rural pursuits until Council decides that such land should be made available for development for either rural residential or urban residential purposes;*
- *providing for urban residential development generally east of Broken Shaft Creek and in an area adjacent to The Escort Way, in the areas located within the preliminary development envelope identified in Figure S.2;*
- *the new urban community being supported with the establishment of a centrally located cluster of urban support services including a primary school and local shops. The size and location of this cluster to be addressed in the preparation of the Master Plan for the development;*
- *provision of appropriate facilities for the supply of water and sewer services to be the subject of further detailed study. In the interests of maximising options for the efficient and cost-effective provision of infrastructure, investigations should be commenced to find a suitable site for a new sewage treatment plant to service the new urban community in the study area; and*
- *vehicular access to the development being provided by two primary access points to the arterial road network – one to the Mitchell Highway and the other to The Escort Way. The optimum location for the intersections being the subject of further detailed assessment. The opportunity to provide a third primary access point via Gormans and Manning Roads to the proposed distributor road (whether for all vehicles or buses/cyclists/pedestrians only) should be preserved.*
- *Preparation of infrastructure servicing plans addressing the development defined in the Master Plan for the site, including the preparation of a development contributions plan to address the provision of local public facilities and services.*
- *Staging of the development would depend on the optimum sewage servicing solution for the development. Assuming that a new sewage treatment plant is required on or adjacent to the study area, development should proceed generally from north to south.*

Detailed development principles are contained in Section 11.2.