

Orange Sustainable Settlement Strategy Update

Orange City Council

FINAL REPORT

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Prepared by



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Executive Summary

In 2004 Orange City Council commissioned the preparation of the Orange Sustainable Settlement Strategy (or SSS) to guide future land use planning decisions involving land on the fringe of the City's urban area.

In 2008 Council commenced preparation of a new local environmental plan (LEP) to replace Orange LEP 2000. With the new draft LEP due to be publicly exhibited, Council has decided to review the 2004 SSS recommendations and determine whether those recommendations remain relevant or need to be modified.

This objectives of this report, the SSS Update, are to:

- confirm the role of the SSS as an important planning tool for Council in providing a strategic (20 years forward) context for land use decisions;
- document planning and development decisions affecting the 2004 SSS land units that have occurred since the strategy was completed;
- document the latest information on urban and rural residential land supply and demand;
- document the latest information on urban infrastructure capacities, opportunities and constraints; and
- recommend any modification of Council's urban release areas strategy, including an updated Structure Plan.

Based on a review of planning, development, land supply and demand, and infrastructure issues affecting Orange, an Updated Structure Plan has been prepared.

Section 5 of this report contains the Updated Structure Plan.

Key recommendations and proposed modifications to the 2004 SSS Structure Plan are listed below:

- Removal of urban designated land in the vicinity of Burrendong Way due to environmental constraints.
- Confirmation of the Waratah release area as an existing urban area North Orange neighbourhood shopping centre.
- A new land unit – LU-13 - is a medium term employment area, reflecting Sub Regional Strategy recommendations.
- CSU and Leeds Parade / Narrambla areas should zoned and developed in accordance with Sub Regional Strategy recommendations.
- Approximately 500 ET sewer line capacity for land units west of Burrendong Way, subject to development being able to connect to existing carriers. In the short term Council should consider a planning proposal for LU-2 to determine optimum mix of urban and large lots in this area.
- In the short term, Council to consider reduction in minimum allotment size in Rural Residential zoned areas LU-2 (west), LU-3 (south) and LU-4 (east) to support large lots (i.e. 2,000 – 4,000m² minimum). However, a minimum 4,000m² is considered appropriate in the Broken Shaft Creek valley view catchment. Re-subdivision of LU-3 (south) is more likely to occur in the medium term given existing established housing and school in this area.
- Broken Shaft Creek valley (LU-4 (west) and LU-5) remains a long term development option.

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- Hospitals development and DPI land zoning decisions bring forward the staging of LU-11 and the Health Services and Recreation Precinct. Further urban development in the 'Southern Suburb' to be staged in an anticlockwise fashion and infrastructure analyses are required to determine optimum lot mix and development timing in LU-12 and LU-10.
- Other southern area land units not likely to be required for urban development purposes in the life of the Updated SSS.

1. Need for Sustainable Settlement Strategy Update

1.1 Background

In 2004 Orange City Council (Council) commissioned the preparation of a strategy to guide future land use planning decisions involving land on the fringe of the City's urban area.

This strategy was called the *Orange Sustainable Settlement Strategy and Local Environmental Study* and was prepared on Council's behalf in 2004 by Parsons Brinckerhoff. The strategy is hereafter referred to in this report as the 2004 SSS.

The 2004 SSS was undertaken in response to requests from land owners and developers to rezone land to cater for further urban residential development on the fringe – in particular, a proposal at that time to develop land in the Broken Shaft Creek valley located between The Escort Way and Molong Road in the north west of the City.

The purpose of the 2004 SSS was 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 2004 SSS were to:

- prepare a strategic analysis of urban and rural residential land supply and demand;
- understand infrastructure servicing constraints for candidate future urban areas;
- identify appropriate direction and form for future growth in the City; and
- recommend indicative staging of urban land release areas in the City

The preparation of the 2004 SSS was considered important to the ongoing responsible management of land use decisions in the City in that it:

- gave landowners and investors greater certainty about the future;
- could remove or reduce the speculative element in subsequent land use planning and settlement;
- informed landowners whose land fell outside the strategy release areas so they will be less likely to have false rezoning expectations;
- could decrease conflict over land use decisions in the future;
- could decrease wastage in public or private resources;
- provided a basis for good planning and development decisions; and
- ensured there was enough land available to prevent large increases in land prices.

The content of the 2004 SSS is discussed in various sections of this report.

The use of most land in the City of Orange local government area (LGA) is regulated under *Orange Local Environmental Plan 2000* (Orange LEP 2000). In 2008 Council commenced preparation of a new local environmental plan (LEP) to replace Orange LEP 2000. A key purpose of the new LEP is to adapt and consolidate the planning provisions contained in Orange LEP 2000 into the 'Standard LEP' format being implemented by the NSW Government.

With the new over-arching draft LEP due to be publicly exhibited, Council has decided to review the 2004 SSS recommendations and determine whether those recommendations remain relevant or need to be modified.

It should be stated that the new draft LEP is a consolidating planning instrument, whereas the 2004 SSS was designed to address strategic land use decision-making. That is, 2004 SSS was designed to inform zoning and other planning decisions to be made over the short, medium and long term¹, whereas LEPs will generally state the Council's land use planning policy at the time the LEP is made. This is an important distinction as the guidance provided by the 2004 SSS was meant to inform zoning decisions now and in the future, and not all land identified for future urban purposes in the strategy neither needed nor should have been rezoned at the outset.

1.2 Purpose and objectives of this report

This report, described hereafter as the SSS Update, documents the update and review of the 2004 SSS.

Specifically, the SSS Update looks at the areas (or 'land units') located on the fringe of the Orange urban area identified in the 2004 SSS and discusses the planning and development decisions and trends since 2004 that affect decisions regarding the future use and development of land in those areas.

Specific objectives of the SSS Update are to:

- confirm the role of the SSS as an important planning tool for Council in providing a strategic (20 years forward) context for land use decisions;
- document planning and development decisions affecting the 2004 SSS land units that have occurred since the strategy was completed;
- document the latest information on urban and rural residential land supply and demand;
- document the latest information on urban infrastructure capacities, opportunities and constraints; and
- recommend any modification of Council's urban release areas strategy, including an updated Structure Plan.

The SSS Update has been prepared using freely available information or information supplied by Council officers, and also draws on discussions held with Councillors.

The SSS Update does not consider in any detail areas additional to those identified in the 2004 SSS. There have been planning decisions affecting land in the Narrambla and Leeds Parade area that was not identified in the 2004 SSS and these areas are discussed and updated on the Updated Structure Plan.

1.3 Summary of the 2004 Sustainable Settlement Strategy

The 2004 SSS is a strategic planning tool designed to increase certainty about decisions concerning the future use of land on the fringe of the Orange urban area.

The 2004 SSS included a Structure Plan to guide land use decisions about various land units within the fringe area. A copy of the 2004 SSS Structure Plan is shown in Figure 1.1.

¹ In this report, references to 'short', 'medium' and 'long' term generally reflect 0-5 years, 5-15 years and 15+ years timeframes, respectively, from the date of the start of the Sustainable Settlement Strategy

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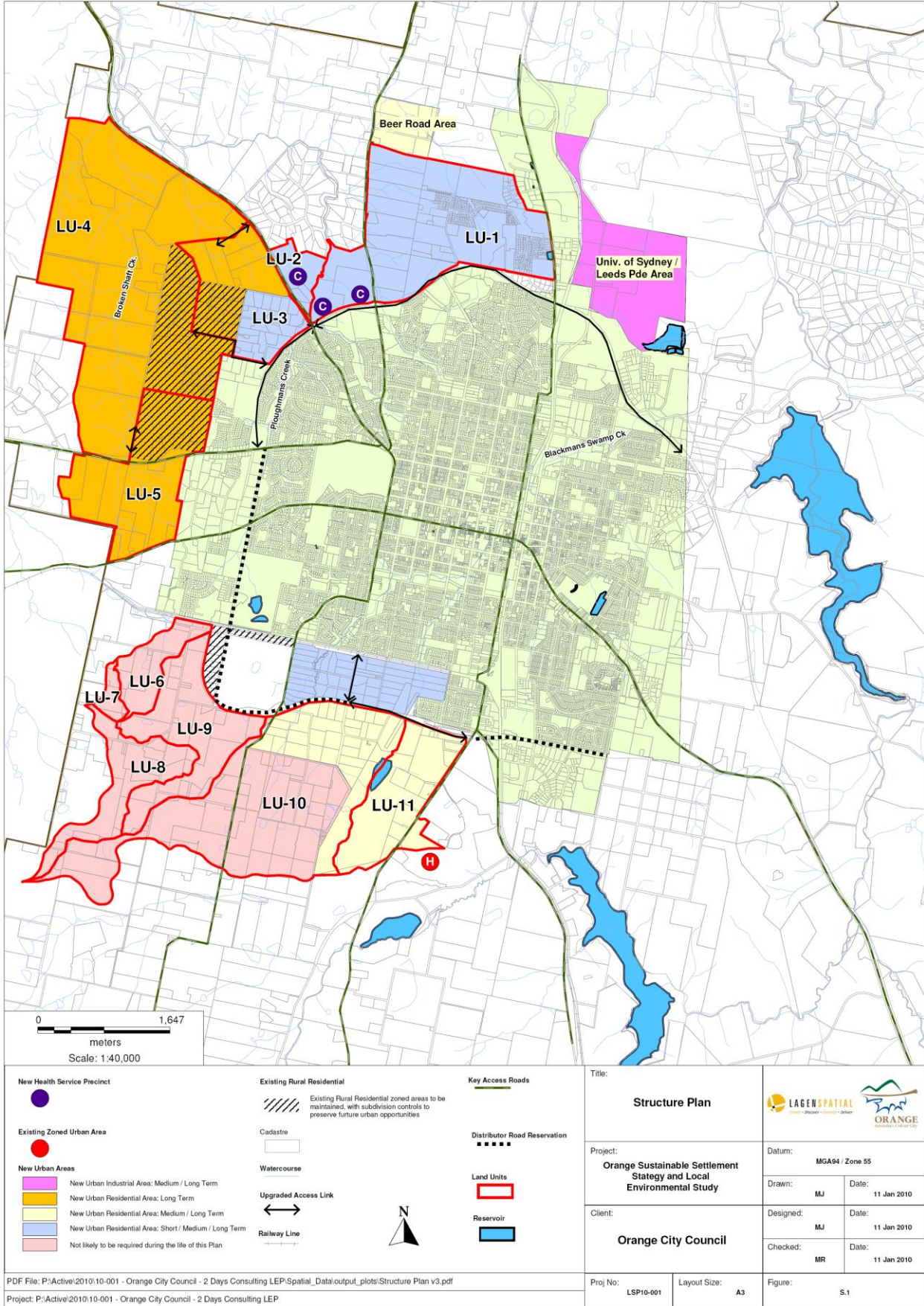


Figure 1.1 2004 SSS Structure Plan

Community values

The 2004 SSS was based on an extensive community values-definition process, and included a set of the community's development and conservation objectives for the future City of Orange.

For example, the 2004 SSS documented a widespread community view that all 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.

Council considers that the community values and objectives established in the 2004 SSS have not significantly changed. The SSS Update and its recommendations therefore uphold those established values objectives.

Urban development strategy overview

The 2004 SSS recommended that there were two short term strategies available to accommodate the urban growth demands of Orange:

- urban development should be facilitated in areas already zoned for that purpose. This includes all land at that time zoned for residential purposes and continued encouragement of infill development; and
- the next front for urban expansion should be on land zoned Urban Transition to the north of (at that time) the existing Orange urban area. This approach reflected both historic planning strategies prioritising urban release to the north, and the investment that Council had already made (and was planned to make) in infrastructure to support north area development.

The 2004 SSS stated that beyond these strategies, 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);
- 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; and
- 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 Orange CBD and other facilities and services (including the proposed Bloomfield 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.

Key developments that have occurred since the 2004 SSS was prepared and that impact upon this urban development strategy include:

- development approvals and commencement of construction of health facilities at Bloomfield;
- rezoning of Department of Primary Industries land (including the NSW Agriculture Research Station) and subsequent lodgment of a Concept Plan application for residential and non residential development at Bloomfield; and
- planning proposals for land north east of the City at Narrambla and Clergate Road (for industrial and business park purposes), at Leeds Parade (for student housing, employment and residential purposes).

These developments have been addressed in this SSS Update and in the Updated Structure Plan included in this report.

1.4 Draft Orange Local Environmental Plan

A purpose of the SSS Update is to support the public exhibition of the new consolidated draft Orange LEP.

The draft LEP will:

- consolidate and updated existing town planning provisions contained in Orange LEP 2000; and
- implement, through inclusion of appropriate zoning and other planning provisions, the development priorities contained in the Updated Structure Plan.

The NSW Government requires all councils within NSW to prepare a new comprehensive Local Environmental Plan (LEP) in a standard instrument format. Orange LGA has been identified as priority area for the preparation and making of a new LEP in this format.

The draft LEP has been under preparation since 2007.

The preparation of the draft LEP has been informed by the following:

- the 'Standard Instrument';
- Orange LEP 2000;
- the 2004 SSS;
- relevant State Environmental Planning Policies;
- section 117 Ministerial Directions;
- Legal considerations provided by Parliamentary Counsel;
- *Orange Business Centre Strategy Review*;
- *Councils of Blayney, Cabonne and Orange City Sub-Regional Rural and Industrial Land Use Strategy*; and
- *Orange 2020*.

Once made, the draft Orange LEP 2009 will comprise the principal statutory planning instrument within Council and will replace Orange LEP 2000. It will provide for the future direction and management of all land uses within the City.

The draft Orange LEP relates to Council's urban release areas strategy in the following key ways:

- It formally implements Council's key short and medium term planning policies for the urban fringe areas.
- It zones land in accordance the strategies contained in the Structure Plan.
- It includes planning provisions that support Structure Plan strategies (for example, permissible and prohibited uses and minimum allotment sizes).

2. Planning and Development Update

The following section reviews key development decisions made, planning initiatives, and trends that have been evident since the completion of the 2004 SSS, and which are relevant to the review of the 2004 SSS.

2.1 Key planning and development approvals and proposals

2.1.1 Hospitals

Construction of a new base hospital has commenced on a site adjacent to the existing Bloomfield Hospital complex on Forest Road in South Orange. The projected completion date for the new hospital buildings is 2011.

The development builds on the existing mental health facilities at Bloomfield and includes:

- construction of a new purpose built general hospital building with helipad at roof level;
- construction of a radiotherapy unit;
- construction of an acute mental health facility building;
- construction of a secure mental health unit building; and
- associated landscaping, access, car parking and structures

Approval has also been issued for a new private hospital in the same area. Approval for Concept Plan and two Project Applications have been granted for the proposed Orange Private Hospital on a site on Forest Road at Bloomfield.

The approved project comprises:

- a three-level building comprising new private hospital complex, comprising 10,350m² of inpatient, operating, pathology, cancer care and pharmacy facilities, medical consultation suites and
- an 80-room 'Medi-Motel' and 9 consultation suites
- short and medium-term accommodation for hospital staff and students
- a future precinct for residential dwellings and or apartments
- a lodge/hostel for patients and families of patients
- ancillary retail, child care and fitness activities
- provision for 487 car-parking spaces

The current development of the hospitals on adjacent sites initiates significant intensification of land use on land immediately to the south of the City of Orange. With these developments there will be consequent investment in infrastructure to support them, including roads, sewer and water supply services. The hospital developments, together with the DPI site development, therefore provide impetus for Council to revisit its urban release strategies for the southern areas of the City. The 2004 SSS identified the southern areas as potentially accommodating urban development in the medium to long term. The investments currently underway in the area suggest that it may be appropriate for timing of urban development generally in the south to be brought forward.

2.1.2 DPI site

Land to the west of Forest Road at Bloomfield, and known as the DPI site, has been rezoned to permit urban development. There has also been a Concept Plan application lodged to carry out the urban development of the land.

On 11 February 2008, pursuant to Clause 6 of the Major Projects SEPP, the Minister for Planning formed the opinion that the proposed development constitutes a Major Project and also authorised the submission of a Concept Plan for the site. In doing so the Minister also formed the opinion that a State Significant Site Study be undertaken to determine whether to list the site a State Significant Site in Schedule 3 of the Major Projects SEPP.

The State Significant Site Study was prepared and on 9 April 2009 the Minister for Planning listed the site as State Significant in Schedule 3 of the Major Projects SEPP. The land is now zoned as:

- R2 Low Density Residential
- B4 Mixed Use
- SP2 Infrastructure

A plan showing the zoning of the site is shown as Figure 2.1.

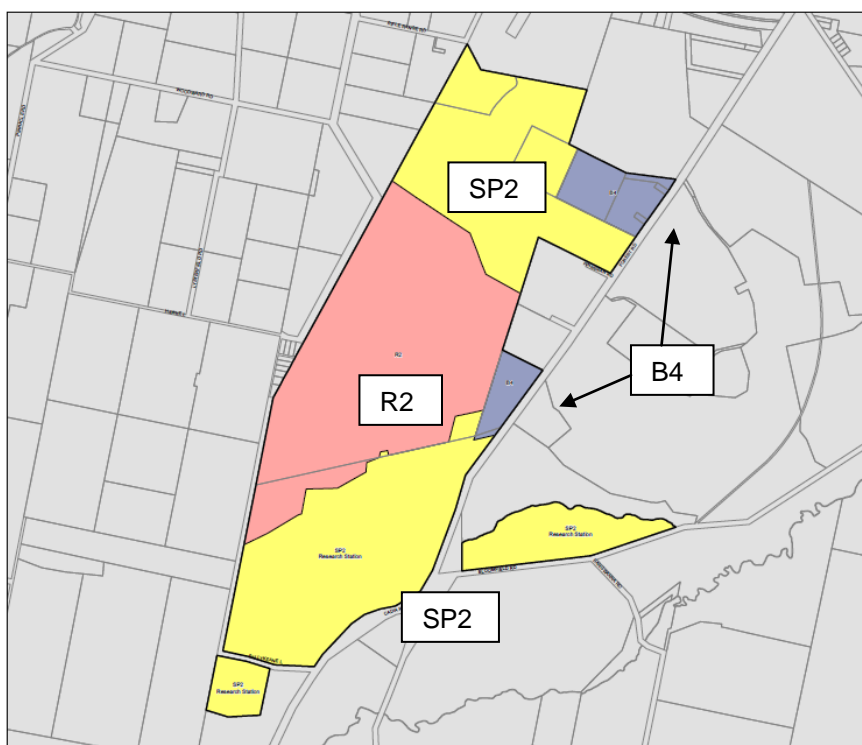


Figure 2.1 DPI site zoning

A Concept Plan application has been lodged with the Minister for Planning for the development of the land zoned R2 Low Density Residential and the B4 Mixed Use Zone. The Concept Plan is the next step in the development of land on the DPI site.

The proposal includes:

- Residential subdivision of the land zoned R2 Low Density Residential and associated infrastructure including access onto Forest Road, water, drainage and local open space

facilities. The approximate yield for the residential development is 550 lots. This includes lots mostly in the 800 to 850m² range with a depth of 35 metres.

- An increase of the retail component on 'Area 2' in the B2 Mixed Use Zone from 1,500m² to 3,500m².
- Access is also proposed from Forest Road in the northern part of the site zoned SP2. The road will connect to the residential area to the south and it allows road access for the Orange Agricultural Institute to monitor its landholdings to the north.

2.1.3 Orange base hospital site

Once the new public hospital at Bloomfield is commissioned there will be a winding down of similar services on the current hospital site. This site will therefore emerge as an important infill development opportunity, potentially catering primarily for residential dwellings but also including limited commercial activities.

The Updated Structure Plan should therefore show this site as a key infill development opportunity.

2.1.4 North Orange neighbourhood centre

Council has resolved to support the development of a new neighbourhood centre in the Waratah area north of the City. The centre comprises approximately 4,700 square metres of gross floor area, including 3,200 square metre supermarket. Rezoning of the site to support the development of the new centre is currently underway. The decision confirms the location of the North Orange centre, which at the time of the 2004 SSS, was not yet determined.

2.1.5 Cadia Valley mining operations

In January 2010 the Minister for Planning approved an expansion to the Cadia Valley gold and copper mining operations located south of the City of Orange in Cabonne LGA.

The NSW Premier on 8 January 2010 announced the project as the largest underground mining operation in Australia, and the second largest gold mine in the world, and is expected to inject more than \$1 billion into the local and regional economies.²

Mining at Cadia commenced in the late 1990s. The project approval is for a new underground mine to the east of the existing Cadia Hill open cut mine, that will extend mining operations at Cadia Valley until at least 2030. The location of the Cadia Valley operations is shown in Figure 2.2.

² Media release – Premier of New South Wales, "Cadia Valley mine approval opens the way for \$2 billion investment", 8 January 2010, <http://www.planning.nsw.gov.au/DesktopModules/MediaCentre/getdocument.aspx?mid=184>

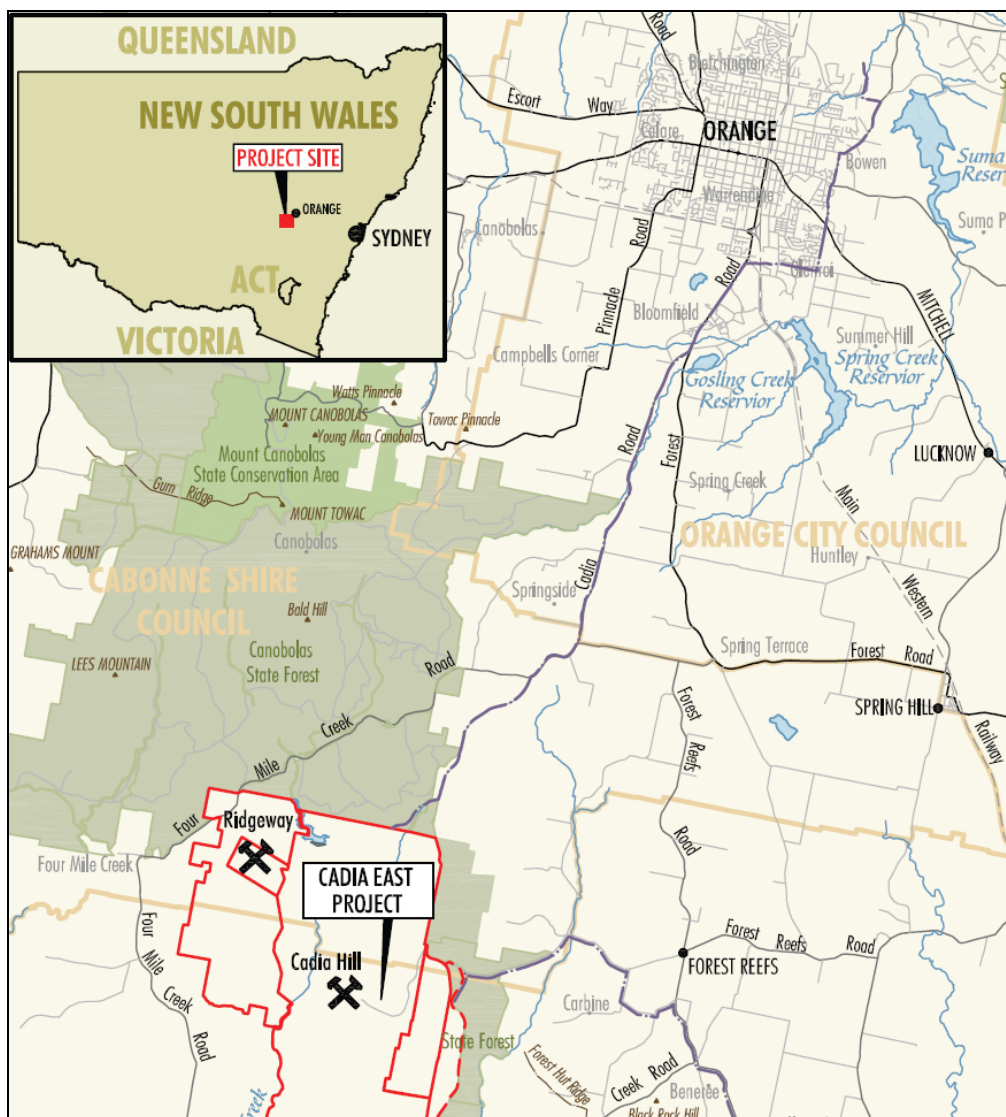


Figure 2.2 Location of Cadia Valley operations

The expansion Cadia Valley mining operations will cement the role of mining and related industries in the Orange district economy:

The Cadia Valley Operations are acknowledged to be a strong contributor to the regional economy. Results of a survey of local businesses indicate that a total of 93% of businesses surveyed considered that the local economy benefits from the Cadia Valley Operations, with 97% of these considering that the benefit to the local economy from the Cadia Valley Operations is medium to high. A benefit cost analysis indicates a very large net production benefit of approximately \$1,210 million and states that the Project would generate approximately 1,889 direct and indirect jobs.³

The continuation of operations at Cadia Valley will assist in maintaining demand for housing and services to meet the needs of workers in the surrounding region, particularly the City of Orange. Cadia Valley is accessed from the City and Bloomfield via Cadia Road and Forest Road. The apparent longevity of the operations and its location south of the City would support complementary strategies in housing and other urban development on land to the south of the City.

³ Resource Strategies (2009), *Environmental Assessment Cadia East Project*, Executive Summary, page ES-18

2.1.6 Lands east of Leeds Parade

Council has resolved to zone certain land situated between Leeds Parade and Ophir Road, currently zoned 1(a) General Farming under Orange LEP 2000 as R5 Large Lot Residential under the draft Orange LEP. This proposal reflects the recommendations of the Sub Regional Strategy (see Section 2.2).

Council has also supported, through Orange LEP 2000 Amendment No. 6, a proposal for “village” development on land east of Leeds Parade to the south east of the Charles Sturt University campus.

The proposal includes a combination of residential uses including seniors living, student accommodation, work from home housing plus a small mixed use business area.

The draft Orange LEP will absorb the provisions of Amendment No. 6.

2.1.7 Lands adjacent to Burrendong Way

Lands currently zoned 2(d) Urban Transition under the Orange LEP 2000 and located east of Burrendong Way are proposed to be allocated an E4 zoning under the draft Orange LEP. This includes parcels 11717, 19363, 19362 and 19360. This area has been classified bush fire prone under a new draft bushfire prone lands map and contains some significant remnant vegetation and biodiversity. The draft LEP also proposes a 20 hectare minimum allotment size for this area so as to avoid further subdivision of this area.

2.1.8 LEP Gateway decisions

Council in 2009 submitted various planning proposals to the Department of Planning for review and decision under the new LEP ‘Gateway’ process.

One of the proposals involved the rezoning of 62.97 hectares of land off Gorman Road, Dean Drive and The Escort Way, Orange from rural to residential land to allow the development of 110 serviced allotments with an average lot size of 4,000m².

The subject land is situated in LU-4 and LU-5 under the 2004 SSS.

The determination of this proposal issued on 28 October 2009 by the delegate of the Minister for Planning was that the proposal should not proceed for the following reasons:

- 1. There is no strategic justification for additional 4,000m² allotments of land in Orange at this time. The Orange Sustainable Settlement Strategy makes no reference to the need for larger residential blocks in any location in Orange. Council should review the Sustainable Settlement Strategy to include an up-to-date supply and demand analysis identifying the need for 4,000m² allotments before this planning proposal can be considered.*
- 2. There is sufficient land approved and undeveloped or zoned in Orange to indicate that, based on the current take-up rate, Orange has approximately 15-18 years of land available for housing.*
- 3. The Orange Sustainable Settlement Strategy only identifies the Gorman Road area as a medium-long term housing option. It recommends that the area be maintained for Rural Residential for the medium to long term future or until the Sustainable Settlement Strategy is revised.*

4. Servicing and infrastructure needs were not adequately addressed in the Planning Proposal.

Later sections of the SSS Update address the matters raised in the determination of this planning proposal. The SSS Update concludes there are grounds for allowing more efficient subdivision of the Gormans Road rural residential areas.

2.2 Sub-Regional Rural and Industrial Land Use Strategy

The *Councils of Blayney, Cabonne and Orange City Sub-Regional Rural and Industrial Land Use Strategy* (GHD 2008) (cited hereafter as the **Sub Regional Strategy**) provides a strategy for Orange region councils to make decisions concerning the future use of land for rural, rural residential and industrial / employment purposes in their areas.

The Sub Regional Strategy identified candidate and preferred areas for future zoning of land for lifestyle allotments and industrial areas. Preferred areas in Orange LGA recommended for future development by the Sub Regional Strategy are situated north and north east of the city centre. They are listed in Table 2.1 and shown in Figure 2.3.

Table 2.1 Sub Regional Strategy Areas – Orange LGA

Area	Approximate size	Appropriate development	Staging notes
Lifestyle allotment areas			
SA 1 (Leeds Parade)	150 hectares	Lifestyle allotments but only where a secure source of water is available	When required
SA 2 (University)	635 hectares	Lifestyle allotments but only where a secure source of water is available	Following SA 1
Industrial areas			
SA A (Narrambra extension)	145 hectares	Smaller scale industrial and light industrial activities	Rezone in 0-10 years
SA B (North Clergate)	190 hectares	Large scale industrial activities that require large allotments, subject to development of vacant land within the existing industrial zoned area	Rezone in 0-10 years

Source: (GHD 2008), *Councils of Blayney, Cabonne and Orange City Sub-Regional Rural and Industrial Land Use Strategy*

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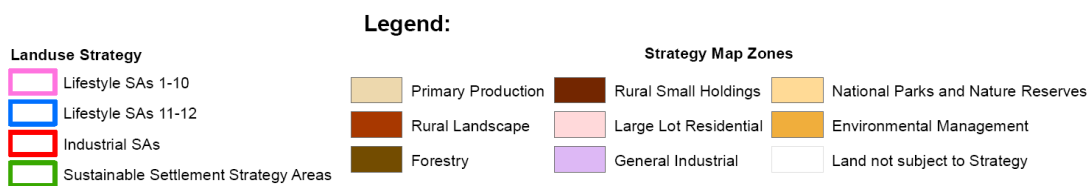
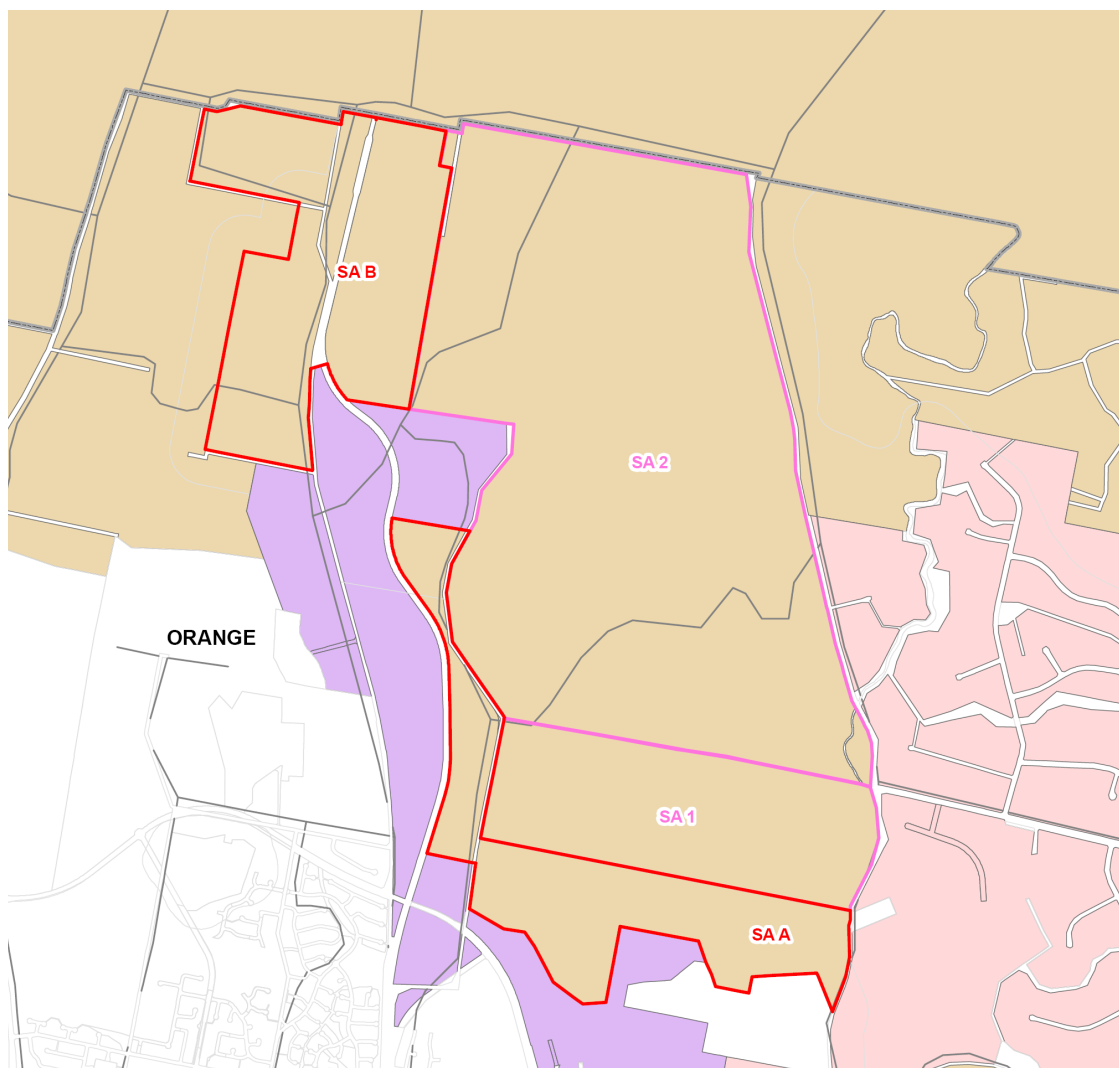


Figure 2.3 Sub Regional Strategy Areas – Orange LGA

Council considered the Sub Regional Strategy at its meeting of 3 November 2008. In summary, the Council resolved:

- that SA 1 (Leeds Parade) form an extension to the existing rural residential subdivisions in the Clifton Grove area;
- that SA 2 (University) be zoned for University use but be kept under review for a future extension of rural residential use on any surplus university lands;
- to further investigate the proposed extension to Narrambla business park (i.e. SA A (Narrambla extension)); and
- that SA B (North Clergate) be excluded from consideration as an industrial area and retain its current rural planning provisions.

The Sub Regional Strategy findings and recommendations are significant to this SSS Update in that:

- it has been completed after a regional assessment of need and opportunities for rural, rural residential and industrial development; and
- it identifies potential additional areas to cater for these development forms.

The SSS Update therefore responds to the key Sub Regional Strategy outcomes (and previous Council decisions) relating to land in and adjacent to the Orange urban area.

2.3 Orange Business Centres Review Study

Council in 2009 commissioned Leyshon Consulting to undertake a Business Centres Review Study for the City of Orange. This study was undertaken concurrently with the SSS Update.

The scope of the Leyshon study included, among other things:

- Review recent planning and development decisions that may affect the demand for retail and commercial floor space in the City.
- Assess future demand for retail floor space across the City and in particular locations (e.g. South Orange).
- Review current rezoning proposals in the context of the need for further land to be rezoned for retail and commercial purposes.

At the time of writing this report a draft version of the Leyshon Study had been completed. Conclusions and recommendations from the Leyshon Study included the following:

- Based on the range of scenarios of projected growth in the retail trade area, Orange will need to provide between a further 19,000 and 36,000 square metres of retail floor space (including between 11,000 and 20,000 square metres of 'bulky goods' retail floor space) up to 2021.
- Total additional demand for office floor space is likely to be between 7,000 and 11,000 square metres up to 2021.
- Council's planning strategy should be to encourage development in existing centres rather than development in new centres, with the exception of the new North Orange centre. Adjustments to existing zones include:
 - allowing more opportunities for retail development on the fringe of the CBD;
 - slightly expanding the existing bulk retail zone on the eastern fringe of the City; and
 - provision for a 'small local retail facility' on the DPI land in South Orange.⁴

2.4 Summary

Planning and development decisions and trends that have and will continue to affect land in the 2004 SSS land units include the following:

- the emerging health facilities and urban residential and local retail developments in the Bloomfield area south of the City;

⁴ At the time of writing the SSS Update, a Concept Plan application had been lodged for a 3,500m² retail facility in this location. This is larger than that recommended in the Leyshon report.

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- strengthening and continued diversification of the local economy through additional retail, commercial and other employment activity (for example, the continuation of mining operations at Cadia Valley and further development at Charles Sturt University campus);
- reflecting the outcomes of the Sub Regional Strategy, the potential to extend the development of Orange in a north easterly direction through additional employment uses northward from Narrambla, student housing and rural residential opportunities on land between Leeds Parade and Ophir Road;
- identification of environmental constraints restricting the development potential of land located to the north of the City and east of Burrendong Way; and
- the potential, subject to market requirements and services availability, to more efficiently develop the rural residential land to the west and north west of the City.

3. Residential Land Supply and Demand Update

The following section updates information from Chapter 5 of the 2004 SSS titled 'Residential Land Supply and Demand'.

3.1 Development drivers

The range of drivers or factors influencing demand and supply of urban residential land that were identified in the 2004 SSS remain relevant – that is, the 'macro' and 'micro' factors.

Macro factors include:

- the level of interest rates and inflation;
- the price of commodities (particularly gold and copper ore, and agricultural products);
- competition and technology impacts in primary industry (for example, fewer farm holdings and reduced need for farm labour);
- the performance of export-oriented industries;
- the relative cost of housing in other areas; government influences, including legislation and taxation arrangements;
- broad demographic trends, including ageing populations, smaller household sizes, etc.

Micro factors include:

- access to raw materials (in Orange's case, gold and copper ore mining, cold climate and fertile soils for niche agricultural products);
- relative performance of the industries which utilise Orange's raw materials in the state, national and international economy;
- skills base of the local labour force and skills match with the industries which are prospering;
- availability of land to support economic activity and development, and costs to service that land;
- local government and community attitudes to development;
- investment from higher levels of government in infrastructure;
- local social and demographic features (for instance, the relative wealth / disposable income of the local population; age profile of the local population; degree of welfare dependence, etc.); and
- the relative overall 'attractiveness' of Orange as a place to live, work and invest compared to other 'competing' centres such as Bathurst and Dubbo.

Changes and trends in the above factors have been evident since 2004.

For example, fluctuations in interest rates and commodity prices. Interest rates rose until their peak in 2008 when there was a dramatic easing of monetary policy by the Reserve Bank of Australia. A tightening cycle recommenced in mid 2009. Interest rate increases over most of the period are likely to have a factor in reduced annual lot creation and housing construction.

Also the overall boost in raw materials prices, including gold and copper, has helped sustain primary industry, while movements in agricultural commodities that the Orange region is represented in have not been so favourable for sustaining the primary production economy.

Interest rate increases and poor performance in some parts of the primary sector of the economy were countered by stimulatory local factors including investment in key infrastructure and economic activity including:

- Completion of the Orange bypass road from Leeds Parade to Forbes Road
- Commencement of construction of the Orange base hospital at Bloomfield
- Continued gold extraction at Cadia / Ridgeway mines (in Cabonne LGA) and recent granting of approval of Cadia East underground mine.

Regional economic activity and economic indicators will continue to change over time. What appears clear is that overall, the City of Orange's economic structure remains relatively strong and diverse when compared to other regional areas across Australia.

Maintenance of this economic status into the future would likely sustain medium to high local population growth rates and consequent average to strong demand for more housing.

3.2 Development data

The interplay of macro and micro factors (both stimulatory and contractionary on the local economy) has nonetheless seen steady activity in lot and housing creation in Orange since the 2004 SSS was completed.

The following tables present updated development data since the 2004 SSS was completed.

Table 3.1 Residential allotment approvals

	1999-2000	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	Average
Urban residential lots	332	93	214	407	503	343	656	83	262	414	331
Rural residential lots	15	59	6	27	2	15	0	20	2	53	20
Total	347	152	220	434	505	358	656	103	264	467	351

Source: Orange City Council

Table 3.2 Residential allotment registrations

Lots registered	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	Average
Urban residential lots	108	139	165	274	357	189	358	134	257	220
Rural residential lots	3	19	30	5	24	2	2	7	1	10
Total	111	158	195	279	381	191	360	141	258	230

Source: Orange City Council

Table 3.3 Private dwellings

Year	Separate Houses	Semi-detached, row or terrace, townhouse, flats, units, apartments	Not stated and 'Other' dwellings	Total Private Dwellings
1991	10,157	1,544	341	12,042
1996	11,045	1,853	369	13,267
2001	11,015	1,786	258	14,134
2006	11,691	1,639	116	14,874

Note: 'Total private dwellings' column includes both occupied and unoccupied dwellings. Other columns only include occupied private dwellings

Source: Australian Bureau of Statistics Census of Population and Housing

Table 3.4 Dwelling approvals

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	Average
Dwelling approvals	204	205	168	219	238	182	214	182	229	205

Conclusions that can be drawn from these data include the following:

- Average urban residential allotment development approvals recorded since 1999 was 331 per annum, which is much higher than the average 226 per annum recorded in the 2004 SSS.
- Average urban residential allotment registrations recorded since 2000 was 220 per annum, which is higher than the average recorded in the 2004 SSS.
- An average of 20 / 10 rural residential allotments per annum were approved / registered over the last decade. This is lower than the average approvals / registrations recorded in the years leading up to the 2004 SSS (i.e. 24 approvals / 15 registrations).
- An existing and continuing strong preference for separate houses as the primary dwelling type.
- Based on Census data, an annual average number of net additional dwellings of 189 dwellings per annum throughout the fifteen years to 2006, which is unchanged from the longer term moving average (1991-2001) documented in the 2004 SSS.
- An annual average number of private dwelling approvals of 205 dwellings per annum throughout the ten years to 2009. This compares to the 5 year average of 190 dwellings per annum recorded in the 2004 SSS. Component data for separate house approvals unavailable.

Overall, residential allotment and dwelling approvals have been maintained at a similar level, on an average annual basis, to what was recorded in the period leading up to the 2004 SSS.

The data suggests that housing activity remains reasonably buoyant and that take up of urban residential land is proceeding at a steady rate.

3.3 Population and households

3.3.1 Population

Table 3.5 updates estimated resident population data since the 2004 SSS.

Table 3.5 Estimated resident population, 1971-2006

Year	Estimated resident population	Population Growth	Average Growth Per Annum (no.)	Inter-Census Annual Compound Growth Rate
1971	23,172			
1976	29,950	6,778	1,356	5.27%
1981*	31,350	1,400	280	0.92%
1986	32,360	1,010	202	0.64%
1991	33,670	1,310	262	0.80%
1996	34,828	1,158	232	0.68%
2001	36,999	2,171	434	1.22%
2006	37,108	109	22	0.05%
2008 ^a	37,991	883	442	1.18% [#]

* data for 1981 onwards includes land areas added to the Orange LGA following boundary adjustments made in 1977

a 2 year, not an inter-Census, result

Source: Table 5.6, 2004 SSS, ^aAustralian Bureau of Statistics Catalogue No. 3218.0, *Regional Population Growth, Australia*, issued April 2009

The 2004 SSS showed historically strong population growth for the Orange LGA between 1996 and 2001, which then slowed markedly until 2006. Growth since 2006 (i.e. to 2008) has since picked up to a similar rate to that experienced between 1996 and 2001.

The average annual compound rate of population growth between 1981 and 2001 was 0.8 percent. The rate for the period since 2001 reduced to 0.4 percent. Without the strong results recorded since 2006 the recorded growth would have been negligible.

3.3.2 Household occupancy

Table 3.6 updates household occupancy data since the 2004 SSS.

Table 3.6 Occupancy rates

Year	Estimated resident population	Occupied private dwellings	Occupancy rate
1991	33,670	11,175	3.01
1996	34,828	12,145	2.87
2001	36,999	13,059	2.83
2006	37,108	13,449	2.76

Source: Australian Bureau of Statistics

3.3.3 Projections

Since the 2004 SSS several future population projections for the City of Orange have been prepared.

Published projections

Published population projections since the 2004 SSS were recently addressed by Leyshon Consulting in the Business Centres Review Study (unpublished, 2009) (Leyshon study).

The Leyshon study assessed existing and future projected business floor space needs. The assessment was primarily informed by projected changes to the size of the different Orange trade areas (i.e. local population).

2004 SSS projections compared to projections published since the SSS was completed (and cited by Leyshon) are shown in Table 3.7.

Table 3.7 Recent published resident population projections

Source	2006	2011	2016	2021
2004 SSS Medium Projection	38,503	40,068	41,696	43,391
2004 SSS High Projection	39,079	41,276	43,597	46,048
Department of Planning		39,040		
SGS Economics and Planning	37,009	38,061	39,234	40,526
Western Research Institute Scenario A		39,749	45,138	50,552
Leyshon 2005	38,350	39,515	40,593	
Western Research Institute Scenario C		38,015	39,349	40,508

Source: from Leyshon Consulting, *Draft Business Centres Review Study – City of Orange*, unpublished December 2009

Updated Projections for the SSS Update

The Leyshon report assumed two trajectories for future population for the City of Orange in order to arrive at projected floor space needs; i.e. the Western Research Institute (WRI) scenarios:

- Estimated resident population of 50,552 by 2021 (Scenario A); and
- Estimated resident population of 40,508 by 2021 (Scenario C)

Application of these different projection results gives very different outcomes in terms of land take-up and housing construction. Land take-up is discussed in the next section.

Both the Medium and High projections contained in the 2004 SSS overstated population growth in the early years of that strategy. That is, the most recent (mid 2008) estimated resident population recorded by the ABS was 37,991, compared to Medium and High projections for that year of 39,121 and 39,944, respectively. However the growth rate recorded in the 2001-06 period (0.05 percent) was the lowest inter-Censal rate recorded since at least the 1970s. It is also the case that recent population growth rates have been significantly higher (e.g. 1.2 percent in the 2006-08 period). Accordingly the original 2004 SSS Medium and High (0.8 and 1.1 percent) cannot yet be dismissed as in appropriate.

For this update, Newplan has prepared revised Medium and High population projections based on the same growth rates used in the 2004 SSS. The only exception is that the 'start' population has been re-set to the ABS figure recorded in 2008.

The updated projections are shown in Table 3.8.

Table 3.8 Medium and low population growth scenarios (updated)

Year	2004 SSS		SSS Update	
	Medium Projection @ 0.8 percent	High Projection @ 1.1 percent	Medium Projection @ 0.8 percent	High Projection @ 1.1 percent
2011	40,068	41,276	38,910	39,259
2016	41,696	43,597	40,492	41,466
2021	43,391	46,048	42,137	43,797
2026	45,155	48,637	43,850	46,260
2031	NA	NA	45,632	48,860

3.4 Urban residential land bank

A summary of the current urban residential land bank is shown in Table 3.9. The table shows the approximate number of residential allotments that could be developed on land zoned for urban purposes.

The location of the residential land bank areas is shown on Figure 3.1.

The data show an increase in the estimated number of potential urban residential lots currently available from 2,595 in the 2004 SSS to 3,390 at December 2009.

Table 3.9 Urban residential land bank

Area	Number of potential new allotments
East Orange (including Glenroi, Bowen, Suma Park and Clifton Grove)	342
North East Orange (Leeds Parade)	300
North and North West Orange (including Bletchington and Ammerdown)	410
West Orange (including Calare)	40
Ploughman's Valley	895
Waratah	863
Bloomfield / DPI land	540
Total	3,390

Source: Orange City Council

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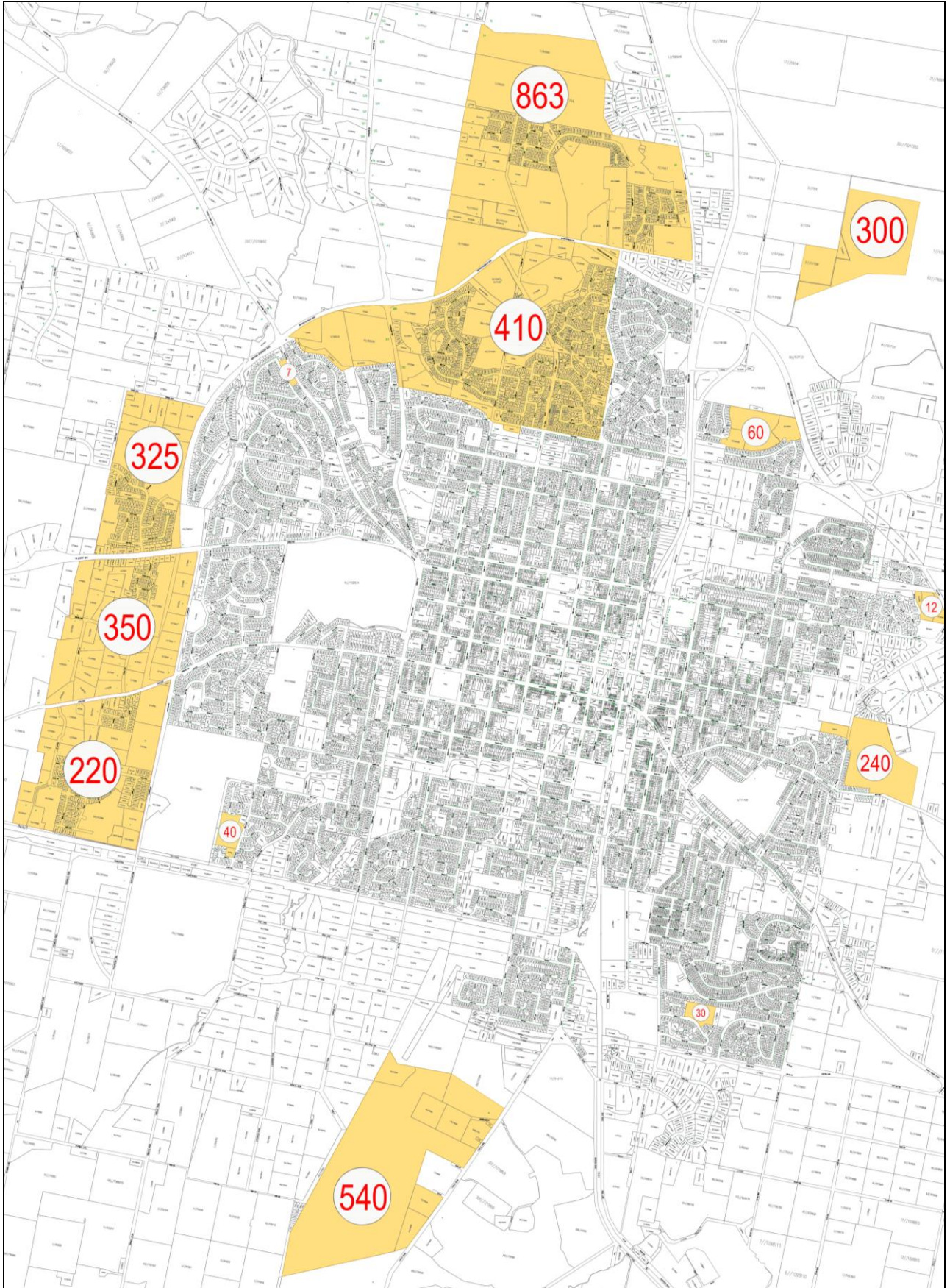


Figure 3.1 Orange urban residential land bank (no. of lots by area)

3.5 Future urban residential land needs

This update report assesses land availability and urban lot exhaustion on the same basis as was used in the 2004 SSS. That is, a methodology that accounts for:

- the current supply of vacant but un-subdivided residential land (Table 3.9 and Figure 3.1);
- use of medium and high updated population projections (Table 3.8);
- a marginal occupancy rate of 1.6 persons per dwelling;⁵
- 20 percent of future dwelling approvals to comprise multi-unit housing or dual occupancy dwellings;⁶
- 50 percent of all new ‘other dwellings’ may be accommodated in the vacant residential zoned areas;
- 10 percent of dwelling house approvals may be expected to relate to rural residential allotments, rather than urban residential allotments.

Combining the above assumptions yields a range of estimates of when the existing residential land supply may be exhausted. These are shown in Table 3.10.

Table 3.10 Residential land exhaustion estimates based on current residential land supply

Year	Population Growth at 0.8%	Cumulative additional dwellings required	Lots remaining at December	Population Growth at 1.1%	Cumulative additional dwellings required	Lots remaining at December
2008	37,991			37,991		
2009	38,295		3,390	38,409	212	3,390
2010	38,601	155	3,235	38,831	425	2,965
2011	38,910	311	3,079	39,259	642	2,748
2012	39,221	469	2,921	39,690	860	2,530
2013	39,535	628	2,762	40,127	1,081	2,309
2014	39,851	788	2,602	40,568	1,305	2,085
2015	40,170	949	2,441	41,015	1,531	1,859
2016	40,492	1,112	2,278	41,466	1,759	1,631
2017	40,816	1,276	2,114	41,922	1,990	1,400
2018	41,142	1,441	1,949	42,383	2,223	1,167
2019	41,471	1,608	1,782	42,849	2,459	931
2020	41,803	1,776	1,614	43,321	2,698	692
2021	42,137	1,945	1,445	43,797	2,939	451
2022	42,474	2,116	1,274	44,279	3,183	207
2023	42,814	2,288	1,102	44,766	3,430	0

⁵ ‘Marginal occupancy rate’ was a measure cited in the 2004 SSS that is the rate calculated by working out the gross population increase divided by the gross dwelling increase over a certain period. A marginal occupancy rate of 1.6 persons per dwelling used in the 2004 SSS is still considered appropriate for this update report.

⁶ Assumption unchanged from 2004 SSS

Year	Population Growth at 0.8%	Cumulative additional dwellings required	Lots remaining at December	Population Growth at 1.1%	Cumulative additional dwellings required	Lots remaining at December
2024	43,157	2,461	929	45,258	3,679	0
2025	43,502	2,636	754	45,756	3,931	0
2026	43,850	2,812	578	46,260	4,186	0
2027	44,201	2,990	400	46,768	4,444	0
2028	44,554	3,169	221	47,283	4,704	0
2029	44,911	3,349	41	47,803	4,967	0

The above broad analysis seems to indicate that Orange’s urban residential land supply may be ‘exhausted’ within 13 to 20 year horizon without further rezoning of land to permit urban residential development. This compares to a 10 to 15 year horizon identified in the 2004 SSS. In general terms, the rezoning of land that has occurred since 2004 (including Waratah, Leeds Parade and DPI lands) has likely extended the period for available land to be able to be developed for urban purposes.

However, it is impractical for land stocks to be allowed to wind down to zero because of the need to maintain opportunities in a range of locations and among a range of land owners. The 2004 SSS stated that shortages may begin to be experienced when the land bank reduces to between 1,500 and 2,000 allotments. Land shortages for some of the housing sub-markets may begin to be noticed (that is, at the 1,500 lot buffer level) sometime between 2016 and 2020.

3.6 Future rural residential land or lifestyle allotment needs

A key outcome of the Sub Regional Strategy that was undertaken since the 2004 SSS was the estimation of demand and future need for rural residential or ‘lifestyle’ allotments⁷ in the rural areas surrounding the City of Orange.

The Sub Regional Strategy Local Profile⁸ identified that:

- there remained 507 hectares of land in the City of Orange that is zoned for rural residential purposes but which is yet to be developed. Most of this land is located at Clifton Grove (north east of the city centre), west of Ploughmans Creek (north west), and south of the railway at Warrendine (south);
- dwellings in all of the rural areas of Orange LGA grew by 492 private dwellings between 1996 and 2006. This accounted for approximately 21 percent of growth in all private dwellings in the Orange LGA;
- there needs to be an array of rural residential products available for the different land submarkets – it is not appropriate, say, for the available land to be provided in one location;
- there is likely to be demand for an additional 832 dwellings on rural residential or lifestyle allotments in the Orange LGA between 2007 and 2037 – or an average of 28 dwellings per annum.

⁷ ‘Lifestyle allotments’ are defined in the Sub-Regional Strategy. That is, they “generally comprise large town block style lots on which generally larger, more expensive dwellings are located within extensive landscaped garden settings. There are usually little or no agricultural pursuits being carried out. These lots have high quality servicing, including sealed roads, power, telephone, capable of on-site wastewater disposal, and in some cases, reticulated water and sewer. They generally have an area of between 1 and 5 hectares, although lots with reticulated water and sewer can be as small as 4,000m²”.

⁸ GHD (2008), *Councils of Blayney, Cabonne and Orange City Sub-Regional Rural and Industrial Land Use Strategy Draft Local Profile*, April 2008

The Sub Regional Strategy Local Profile assumed that future lifestyle allotment development would be taken up at the rate of 1 dwelling per hectare. Based on annual average demand being 28 dwellings, and 507 hectares being currently available, there is a notional supply of rural residential lots lasting 18 years.

However current zoning and minimum lot size provisions in Orange's planning instruments only permit rural residential zoned land being subdivided down to 2 hectare allotments, exhaustion may occur in about 9 years.

For the same reasons as expressed in Section 3.5 for urban residential lots, it is impractical for land stocks to be allowed to wind down to zero before identifying potential development areas for lifestyle allotments.

The Sub Regional Strategy projections for future demand do not reflect actual lot registrations in recent times. Table 3.2 shows an average 3 lots per annum created in the 4 years to 2009. Reduced property transfers during the period may partly account for these low numbers. During the preparation of this SSS Update, it was also expressed to Newplan by property agents that smaller lifestyle allotments than have been traditionally offered the market in Orange (that is, of around 4,000m²) were now much more preferred. The fact that current rural residential zones do not permit holdings of this size may also be a factor in recent low lot creation statistics.

The Sub Regional Strategy identified potential future lifestyle allotment areas to the north east of the city centre (refer Figure 2.3). Of these areas, it would be appropriate for land adjacent to Narrambla, between Leeds Parade and Ophir Road to be zoned for rural residential purposes first, with the adjacent Charles Sturt University site being a potential lifestyle allotment development opportunity in the long term.

However, it would also appear that there may be market demand for a housing segment (dwellings on lots of 4,000m² to 2 hectares) that is not being fulfilled because current minimum allotment requirements for land currently zoned for rural residential purposes prevent it.

The Sub Regional Strategy stated that:

- a range of residential opportunities should be provided;
- growth is to be directed to the defined footprints for each settlement and not be allowed to sprawl, form ribbon or ad hoc development that would compromise the rural landscape and atmosphere;
- new lifestyle subdivision opportunities should be released in a controlled manner, having regard to the existing large supply of land already zoned for this purpose (Sub Regional Strategy, page iii); and
- growth management should provide for rural lifestyle development only where it will not conflict with existing and future agricultural land uses, and where appropriate services can be provided and environmental impacts minimised (Sub Regional Strategy, page 24).

These factors and objectives suggest that existing underdeveloped zoned areas for lifestyle allotments should help meet some of the future demand through subdivision of land into allotments of around 4,000m².

This SSS Update addresses potentially locations for this 'large lot' form of urban residential subdivision (refer Section 5).

3.7 Summary

The City of Orange's population growth rates have been volatile since 2001.

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This update concludes that the local population will increase to between 43,850 and 46,260 by 2026.

A key driver of future growth will be the relative performance of the local economy. Recent positive developments in this regard (including hospital and mining development approvals and commitments) suggest economic activity will be buoyant and local population growth rates relatively high for the short to medium term.

Orange's urban residential land bank has increased by 30 percent, or between 3 and 5 years additional supply (based on updated projections used in this report), since the 2004 SSS assessments.

It is now estimated that shortages in the availability of urban land across one or more price markets may begin to be experienced in six to 10 years.

While supply is currently available in a number of areas in the City (see Figure 3.1), the central tenet for Council preparing the 2004 SSS has remain unchanged. That is, that it is prudent for the Council to undertake a strategic assessment of further land development opportunities because:

- early identification of land to be rezoned is required because it is a complex and time consuming process;
- land owners, residents and service providers expect that decisions about future urban areas be made well in advance of development actually taking place because of the need to forward plan investment decisions; and
- a range of opportunities for residential allotments needs to be maintained to suit the different local price markets at any one time, so as to maintain choice for the range of homebuyers in Orange, and to plan and fund infrastructure.

4. Urban Infrastructure Issues Update

4.1 Introduction

The following section updates Chapter 6 of the 2004 SSS titled 'Urban Infrastructure Issues'. It documents infrastructure decisions and developments that have occurred since the 2004 SSS so as to:

- update the infrastructure constraints and opportunities affecting urban development in the City of Orange; and
- apply that knowledge to inform updated recommendations on the location and staging of new urban areas.

4.2 Role of urban infrastructure in development sequencing in the 2004 SSS

The provision of potable water and connection to sewer is considered the primary factor in the release of new urban land, as these urban services are both fundamental to orderly development and are usually the most expensive to deliver. Orange City Council is the authority that provides water, sewer and most roads.

The 2004 SSS showed that the release of urban residential lots was particularly dependent on the ability of the existing water supply and sewer systems being able to accept additional loadings. Future land releases would depend on the ability of Council to provide either new infrastructure or upgrade the existing system to allow development to occur. The ability of Council to provide the infrastructure relies heavily on the affordability and optimal sequencing of projects.

Key urban infrastructure factors driving land use recommendations included in the 2004 SSS included the following:

- Infrastructure provision was not a constraint to the development of any part of the SSS study area however capacities within the existing system suggested a preference for the staging of development.
- In general, development of the 2004 SSS study area should seek to improve the existing infrastructure. Accounting for the Council's previous and planned investment in water, waste water, and transport provisions, new urban development in the short and medium term should be facilitated in the existing urban zoned lands in North Orange and Waratah.
- There were significant infrastructure costs with servicing land to the west and south of the city 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 included:
 - the timing of construction of the distributor road which at that stage was low priority through the south giving preference to the west; and
 - the decision to expand the existing waste water treatment plant or delay the construction of a new facility would give preference to development of the south.

- The relative remoteness of land units LU-6, LU-7, LU-8 and LU-9 from existing sewer infrastructure and from a future sewer infrastructure (i.e. at the bottom of Broken Shaft Creek Valley) suggested these land units would be the most expensive to service and thus would likely not be required for urban purposes during the life of the 2004 SSS.

4.3 Southern Suburb land units

The 2004 SSS prioritised potential residential release areas in accordance with the methodology adopted in that study. The staging of release for the land units was made on the assumptions of when particular infrastructure would become operational according to programmed staging and available funding.

At the time, the southern area land units identified as LU-6, LU-7, LU-8, LU-9 and LU-10 (part) were considered as not likely to be required for the life of the twenty year plan. LU-11 was proposed as a medium to long term urban development area.

However the following events have occurred since the 2004 SSS which profoundly affect Council's strategic land sequencing decisions:

- The State Government announced and has commenced construction of the new Orange Base Hospital at Bloomfield, adjacent to LU-11. A new private hospital is also being constructed along with ancillary medical services and it is likely that the Bloomfield area will rapidly develop as a medical and health care hub of regional significance.
- The Department of Primary Industries (DPI) land holdings which include the Orange Agricultural Institute are situated within LU-11. The DPI site has been the subject of a State Significant Site investigation and has recently been rezoned allowing the development of the land for urban residential and other ancillary purposes.

As a result:

- the likely staging of LU-11 has moved forward to having a short to medium term future urban role; and
- in response to this Council recently engaged Geolyse consultants to undertake an infrastructure assessment and prepare a servicing strategy for development of the DPI site and the wider 'Southern Suburb' (encompassing LU-10 and LU11). The report findings have been included in the relevant sections below.

4.4 Water infrastructure

4.4.1 Infrastructure network and capacity 2004

Securing future water supply was a key concern of the 2004 SSS.

Raw water supply was estimated at 7,800 mega litres (ML) per annum. This supply is collected at three locations, namely Suma Park Dam, Spring Creek Dam and Gosling Creek Dam. As with all supply, the collection is heavily dependent on rain and the Orange LGA along with many other locations within New South Wales had been and continues to experience draught. In the early 2000s the annual demand on raw water was approximately 7,000ML per annum.

Council considered that in order to increase supply, upgrades of the existing collection points would be required. In addition, Council was introducing water demand management strategies to attempt to reduce the consumption of water and enable the existing supply reservoirs to go further. This strategy has resulted in significant reductions to the annual demand and enabled Council to review its water supply plans. The results are discussed below.

In 2004 water treatment was provided by two treatment plants located at Icely Road and Spring Creek. At the time, Icely Road treatment plant was operating at capacity and due to the age of the infrastructure was programmed to be upgraded around 2016. Peak daily demand of water had been reduced due to drought and water demand management measures. Additionally, Council was considering the supply of non-potable water through a dual reticulation system in order to reduce the demand for treated water.

Reservoir supply was able to accept some future development in 2004. The main concern with the reticulation of water was the level of the reservoir. Some areas cannot be gravity fed, and pumps are required to supply water to certain locations at adequate water pressure. In other locations, there is too much water pressure and reduction measures are required.

4.4.2 Infrastructure network and capacity 2010

Due to the ongoing dry period in the Orange LGA, Council has been proactive in the review and analysis of how future water requirements are to be met. Strategic analysis has allowed Council to prepare an Integrated Water Cycle Management (IWCM) Plan and a 30 year Water Infrastructure and Management Strategy for the future secure provision of water.

Various initiatives have been undertaken to make the city's water supply go further and significant water savings have been made. This has been imperative as the current water storage level is at 30 percent of capacity.

Since the early 2000s there have been significant water savings through water demand management measures. In 2008-09, Orange City used 4,200ML of water, almost half the annual demand of 2002.

Recent changes and improvements to the water treatment and supply system include:

- Icely Road Water Treatment Plant has been converted to an Ozone and Biological Activated Carbon Water Treatment Plant.
- Spring Creek Dam has been upgraded to meet current NSW Dam Safety requirements. It allows the dam to be filled to its maximum capacity and withstand extreme flood events
- Water pressure improvements in low pressure areas.
- Nutrient reduction treatment facilities at the existing Sewerage Treatment Plant in Phillip Street.
- Completion of the North Orange water and sewerage strategy to provide for residential growth in the north (at Waratah) and west (at Ploughmans Valley).
- Construction of water and sewerage infrastructure to service the new Orange Hospital and ancillary development.
- System improvements to water loss management, leak detection, repair and pressure reduction programs resulting in savings of 300-500ML per annum.
- Return of supernatant from Icely Road WTP to Suma Park Dam resulting in savings of 200ML per annum.
- Demand management through pricing and water restrictions, education, hospitality industry audits, provision of rain water tank rebates and showerhead exchange.
- The construction of a dual water supply system to service 4,500 homes in the north and western suburbs. This scheme was developed to reduce the demand for potable water use by delaying the upgrading of the Icely Road water filtration plant. To date about 500 properties have been connected to the system.

- Development and implementation of alternative water supplies through stormwater harvesting. The first stage of Blackmans Swamp Creek stormwater harvesting scheme has been operating since April 2009. To date the system has yielded approximately 245ML of water. Early results are encouraging and the scheme is still in the developmental stage, as required by the NSW Office of Water.

4.4.3 Augmentation opportunities and costs

There are a number of works proposed to both secure the supply of water to Orange City and also afford use by new development for the future. The works below are required independent of the location or level of future development.

- Suma Park Dam Upgrade – programmed to occur 2010/2011 and is primarily for safety. Originally, the works were to also include the raising of the dam wall to increase capacity. However, prolonged drought has reduced the value of making the dam larger. Council aims to focus on the implementation of a broad range of other options (see below) in preference to the traditional runoff from catchments, as it affords more control over the water supply. Estimated cost of works \$15 million.
- Blackmans Swamp Creek Stormwater Harvesting Scheme – Stage 1 is complete and being tested. Stage 2 is an option that involves the construction of a large storage structure on or adjacent to the creek to store flows during high rainfall events to allow harvesting to continue for a period of time. This would allow up to 800ML per annum to be extracted but would impact on the downstream aquatic environment.
- Ploughmans Creek Stormwater Harvesting Scheme – is expected to be operational by June 2010. It is to generate an annual yield of 730-790ML to supplement the city's raw water supply. This water would be stored, treated and transferred to Suma Park Dam using the existing Blackmans Swamp Stormwater Harvesting Scheme infrastructure. The project requires the construction of wetlands at three locations. Estimated cost of works \$4 million.
- Groundwater – Council is in the process of upgrading and commissioning three bores to increase yields. The Showground bore was upgraded and testing has shown bore sustains flows of 0.3 to 0.5ML per day. Options are being investigated to link this supply to the proposed Ploughmans Creek scheme. Endeavour Field bore and Clifton Grove bore sustain flows of 0.3 – 0.5ML per day respectively and investigation is underway to link flows into the town water supply after treatment. It is proposed to have these supplies functional by June 2010. Estimated cost of works to connect these supplies is \$450,000.

These projects combined have the capacity to increase the secure yield to 5,900ML per annum.

For the future Southern Suburb (LU-10, LU11), the trunk water supply infrastructure components for servicing the potential urban area in this location include 2 water storage reservoirs, 3 water pumps, several kilometres of rising main and transfer mains and transfer pumps. The estimated opinion of cost to construct these works is approximately \$8.2 million.

Long term options have also been identified to secure the City of Orange with adequate water supply. While the above measures are locally based, the long term options involve regional solutions.

- Macquarie River Pipeline – the construction of a pipeline to the Macquarie River has been identified in the Centroc Regional Study (NSW Government) as an emergency water supply option for Orange. This option is in the preliminary investigations stage and it is believed that between 3-5ML per day of flow could be achieved. The minimum cost of such a project is in the order of \$22 million.

- Pipeline to Lake Rowlands –the construction of a pipeline between Orange and Blayney. This option is subject to negotiations and agreements between various parties and available Government funding. The minimum cost of this project is in the order of \$30 million.

In summary:

- Orange City Council has completed various investigations and made significant progress on assuring the provision of water to the current and future population.
- The proposed and possible augmentations to the system are achievable and should not constrain residential development during the term of the 2004 SSS.
- The decisions made by State Government concerning the rezoning and development of land to the south of the City suggest that this land's staging as a future urban area should have priority over the release of substantial tracts of land for urban purposes in the west and north west (i.e. the Broken Shaft Creek Valley).

4.5 Waste water

4.5.1 Infrastructure network and capacity 2004

The Orange Waste Water Treatment Plant (WWTP) located to the north east of the city was designed to operate to a capacity of 60,000 Equivalent Persons (EP).

In 2004, the annual loading was approximately 45,000 EP, including the sewage generated from the industrial areas of Orange. There was therefore ample spare capacity in this plant to allow for future foreseeable residential development to occur.

There was however concern about the ability for the potential new development, that was to be located to the north west or south of the city, to connect to the WWTP. Depending on the location of development, the key matters were for the existing pipe work to accommodate additional loading, and the costs associated with the provision of headworks (pump stations) and upgrading of pipe work to accommodate more flow.

Treated effluent from the WWTP was being directed to the Cadia Mine for its use. The arrangement was expected to continue for the life of the mine. After that time, the treated effluent was to be re-directed back into Council's dual reticulation water supply system.

It was also envisaged that a new WWTP would be required in the medium to long term in the Broken Shaft Creek Valley to service potential new urban development areas west, north west and south west of the Ploughmans Creek Valley (i.e. land units LU-4 to LU-9).

The 2004 SSS identified that there was some available, but temporary, sewer network capacity to allow development beyond the Ploughmans Creek Valley in the west and north west (up to 250 equivalent tenements (ET)). The connection for this amount of development could be made available until the new Broken Shaft Creek WWTP became operational in the long term.

4.5.2 Infrastructure network and capacity 2010

Upgrades to the existing WWTP have made provision for an ultimate plant capacity of 120,000 EP. Works included the trunk mains, inlet works, control building and chlorination facilities being able to cater for the ultimate treatment capacity. While the plant has the theoretical capability to service additional total number of EP it can still only treat at its existing capacity of 2ML per hour.

For release areas on the west and north west fringe of the urban area, there is no obvious sewer corridor to allow feasible connection of major new development to the existing WWTP. Connection to the existing system would only occur via new purpose built corridor to the north of the existing residential areas. Council officers still consider that a new WWTP built in the north-western point of Ploughmans Valley would be equally feasible to the creation of a sewer corridor for the purposes of connection to the existing WWTP.

Council officers however advise that, because of an established pattern of reduced water use by Orange residents, it is reasonable to apply a permanent status to the additional 250ET sewer capacity for development west and north west of Ploughmans Creek Valley. This is contingent upon a connection corridor being provided between the existing trunk carrier along Ploughmans Creek and land west of Murphys Lane. This limited extra capacity affords Council the opportunity to consider limited urban development in areas currently zoned, but not yet fully developed, for rural residential development.

4.5.3 Augmentation opportunities and costs

The works that have been proposed to be constructed in the Development Servicing Plan (DSP) over the next 30 years are predominately upgrades to the existing WWTP, additional pump stations to the north and the servicing of the Southern Suburb to meet the needs of rezoned DPI land and construction of the medical hub.

The approximate cost of identified works excluding the southern areas is \$18 million.

The DSP will need to be updated to integrate the findings of the Geolyse infrastructure assessment for the Southern Suburb. The servicing of the Southern Suburb will require the construction of three (3) sewage pump stations and associated rising mains. The opinion of cost to construct two of the sewage pump stations and associated rising mains is in the order of \$1.0 million.

The Geolyse report states that because discharge from Sewage Pump Station No. 3 is significant, it would not be able to be accepted into the existing gravity sewer main without causing overloading of the existing sewer system downstream. Thus the discharge of sewage from SPS No. 3 will require further detailed analysis of Council's existing gravity sewerage system and was not costed as part of assessment report.

In summary:

- There is ample capacity in the Orange WWTP to deal with future demand. There are however practical and cost issues associated with providing sewer carriers to potential new urban areas in the south and west of the city.
- The method of serving the Broken Shaft Creek Valley in the event of it being required for urban development would be either construction of a new WWTP near the bottom of the catchment, or development of a new carrier corridor across the north of the city to meet up with the existing WWTP.
- The method of serving the Southern Suburb and Bloomfield health precinct will be the provision of new trunk infrastructure and upgrading existing carrier corridors to the existing WWTP.
- The decisions made by State Government concerning the rezoning and development of land to the south of the City suggest that this land's staging as a future urban area should have priority over the release of substantial tracts of land for urban purposes in the west and north west (i.e. the Broken Shaft Creek Valley).

4.6 Roads

4.6.1 Infrastructure network and capacity 2004

In 2004 the Orange road network was generally adequate for the traffic at the time, although the passage of through vehicles through the centre of Orange had long been an issue.

In an effort to divert through traffic from the centre of Orange, Council had investigated alternatives and secured State Government funding for the provision of a distributor / ring road that was planned to guide through and heavy traffic along the periphery of the urban area.

The 2004 SSS identified the construction of a distributor road as being a requirement to meet the access demands of new development on the fringe of Orange. This road is a ring around the city and, when ultimately completed, would effectively service the new urban areas (in addition to its through traffic handling function).

At the time of preparing the 2004 SSS the only work that had been commenced on the distributor road was the northern rail crossing and section of road between Leeds Parade and Kearneys Drive.

Access between north and south of the town has always been limited due to the railway line. An improved crossing(s) over the railway line was identified as being required to open up development to the south.

4.6.2 Infrastructure network and capacity 2010

Since the 2004 SSS, much progress has been made on completion of the northern and western sections of the distributor road. The section between Forbes Road and Astil Drive has been completed. This section provides circumferential access between the Narrambla, Waratah, North West Orange and Ploughmans Valley localities.

The current extent of the distributor road however does not yet provide the effective through traffic bypass of the city centre. This will be achieved in the next phase of construction is completed – that is, when the eastern arm of the road is completed and there is a complete link between the Mitchell Highway east and west of Orange.

4.6.3 Augmentation opportunities and costs

Council (with funding assistance from State and Commonwealth Government) intends to complete sections of the eastern (or North Orange Bypass) and southern arms of the distributor road, plus feeder road works, within the next 10 years. The program includes the following:

- North Orange Bypass – Astil Drive to Mitchell Highway (0-5 years)
- Cargo Road Upgrade – Ploughmans Lane to Yackerboon Lane (0-5 years)
- Anson Street extension – to southern distributor road (0-5 years)
- Southern Distributor Road - Anson Street to Forest Road (0-5 years)
- Southern Distributor Road – Elsham Avenue to Edward Street (0-5years)
- Southern Distributor Road – Rail crossing and link between Forest St and Edward St (6-10 years)

- Southern Distributor Road – Ploughmans Lane upgrade between Cargo Rd and The Escort Way and the extension from Anson St to Shiralee Road with the upgrade of Woodward Rd (6 – 10 years)

In summary, this proposed program of road infrastructure:

- will generally facilitate further urban development on the fringe of Orange, however none of the works are required prior to development occurring in these areas;
- will improve connectivity in the south. The new rail crossing and first leg of the Southern Distributor Road is of particular significance as the existing rail crossings at Forest Road/Peisley Street and Ash Street/Huntley Road currently impedes access to and from Bloomfield;
- will improve access to and from the Narrambla industrial area and Leeds Parade area, providing opportunities for accelerated development of industrial and employment uses in this area.

4.7 Servicing of land east of Leeds Parade

An assessment of services and infrastructure issues associated with proposed development east of Leeds Parade area (that is land covered by Orange LEP 2000 (Amendment No. 6) was prepared by Heath Consulting Engineers in 2006 (*Engineering Servicing Investigation Report for Narrambla, Ophir Road and Wolumia, Leeds Parade, Orange*).

The report concludes that the area can feasibly be serviced with essential infrastructure.

Council has advised that the required infrastructure described below will have to be provided in full by the future developers of the area.

Sewer

There is an existing 225mm diameter asbestos cement gravity sewer main. This sewer main services the CSU campus to the north. It discharges at the head of Council's sewage treatment plant (STP). A new sewer main has also been constructed in the vicinity of the CSU main entry onto Leeds Parade. The existing CSU sewer main could readily be redirected into this new sewer main.

As previously mentioned in this report there is spare capacity in the existing STP to allow for development to occur. The report by Heath Consulting outlines various options including connection to Council's STP and onsite treatment. It is understood that the preferred option would be to connect to Council's STP with an estimated cost of \$2.5 million (2006).

Water

The Leeds Parade land is currently not serviced by a reticulated water supply. An existing 200mm diameter water main runs along Leeds Parade. A 100mm diameter water reticulation main is located in Banjo Patterson Way, east of the subject land. This main services the Canova Park Estate (Clifton Grove). A 150mm diameter main serves the STP and the Boral asphalt plant to the south.

Analysis of the existing potable water reticulation system showed that there is insufficient capacity available in the existing water main in Leeds Parade to adequately service the area. It is also likely that new water reservoirs would be required.

It has also been assumed that the existing water treatment plant would have sufficient capacity to cater for the development, following advice received from Council.

Various water supply options have been outlined in the Heath Consulting Engineers report with the preferred one being the supply of potable water through the construction of additional reservoirs and provision of rainwater tanks. This option was costed (in 2006) at approximately \$6 million.

4.8 Summary

A range of water, sewer and road infrastructure works have been undertaken since the 2004 SSS was completed. In addition, Council has, in response to drought, also implemented demand management strategies for water use that have been successful in reducing water use and allowed earlier infrastructure plans to be re-assessed.

The existing urban infrastructure has enabled the urban residential areas of the original study to proceed in a timely manner. Council has also been methodical in planning for the future development of land by identifying and planning for the required infrastructure works over the next two decades.

As was observed in the 2004 SSS, the provision of infrastructure is not a significant constraint to development in Orange. Yet there are cost and local connectivity issues yet to be resolved

State Government planning and infrastructure decisions for the Bloomfield area have likely confirmed that urban development in the south will proceed sooner than was expected in the 2004 SSS. Infrastructure and development investment in the south also suggests that large scale urban development in the Broken Shaft Creek Valley (with its attendant significant sewer upgrade costs) is unlikely in the short to medium term.

While there are also significant infrastructure upgrade costs involved in servicing the south areas LU11 and LU12, Council has been placed into the position of providing water, sewer and road infrastructure to this area as a priority.

Providing urban services to the Leeds Parade development area is achievable, although at this stage developers in this area will need to initiate and meet the full cost of service provision up front.

Council has not yet considered in any detail the infrastructure needs and costs associated with servicing potential additional industrial / employment / business park land along the Narrambla / Clergate Road / Leeds Parade corridor.

5. Updated Structure Plan

This section of the SSS Update recommends modifications to the 2004 SSS.

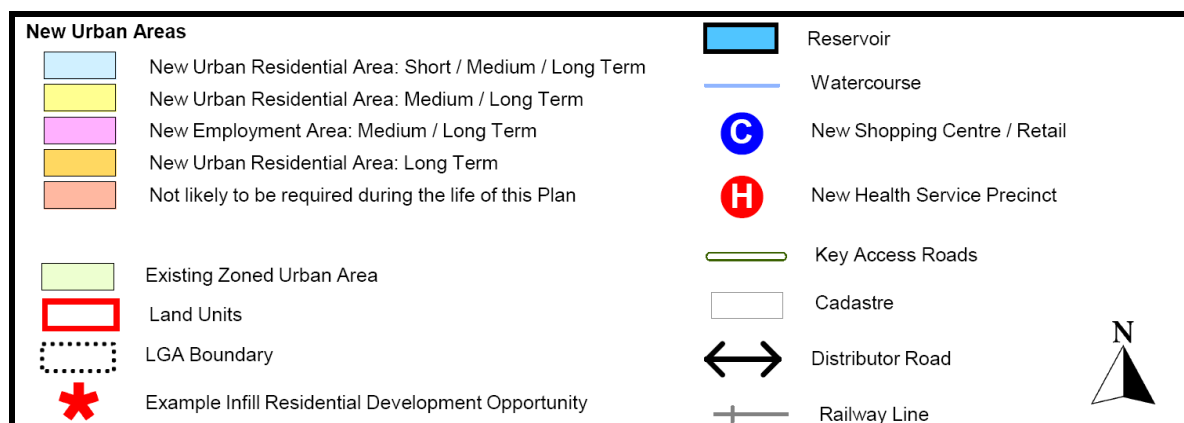
Overall, the main recommendation of the SSS Update is an Updated Structure Plan which takes account of the reviews of:

- planning and development matters;
- residential land supply and demand; and
- infrastructure opportunities and constraints,

contained in Sections 2 to 4 of this report.

The Updated Structure Plan is shown in Figure 5.1 over page.

The key to the Updated Structure Plan is shown below.



Details of the existing and updated proposed development roles for each of the Updated SSS Land Units is discussed in Table 5.1. This Table updates Table S.1 in the 2004 SSS.

Sections 5.1.1 to 5.1.3 summarise key changes between the 2004 SSS Structure Plan and the 2010 SSS Updated Structure Plan.

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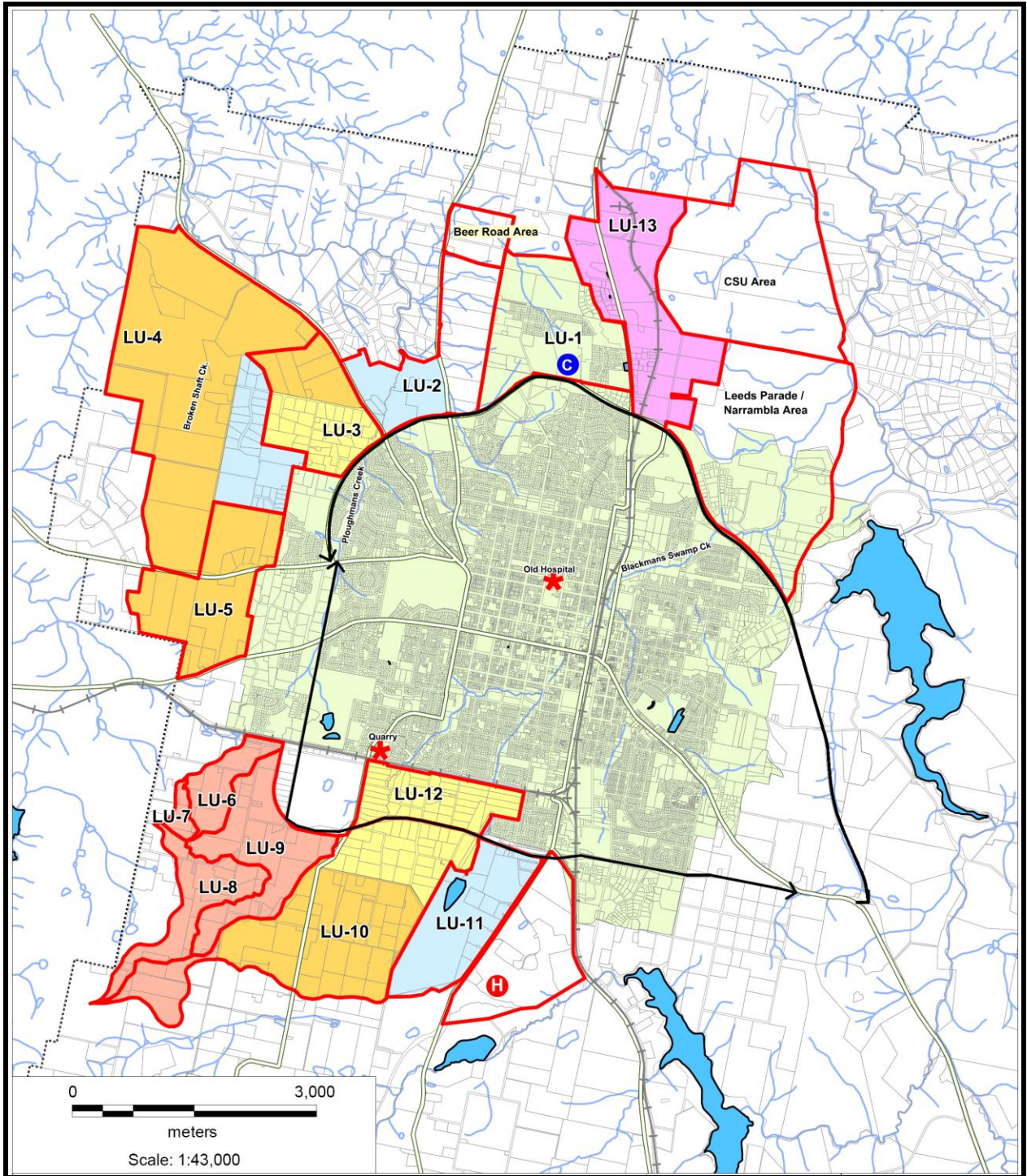


Figure 5.1 Updated Structure Plan

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Table 5.1 Potential Development Roles for Structure Plan Areas

Land Unit	Role identified in 2004 SSS		Role identified in 2010 SSS Update		Comments / Actions
	Short Term	Medium to Long Term	Short Term	Medium to Long Term	
Existing Urban	Urban residential	Urban residential	Urban residential	Urban residential	Council to continue to implement policies which encourage infill housing throughout the city, including preparing planning proposals for opportunity sites (marked "*" on the structure plan map).
North					
LU-1	Urban residential	Urban residential	Urban residential	Urban residential	Land unit boundary adjusted to account for environmental constraints east of Burrendong Way. Waratah urban release area currently proceeding.
LU-2	Urban residential	Urban residential	Urban or large lot residential	Urban or large lot residential	Land unit boundary adjusted to account for environmental constraints east of Burrendong Way. Environmental constraints east of Burrendong Way preclude urban residential development. Urban (<1,000m ² allotments) or large lot (2,000 to 4,000m ² allotments) development on land west of Burrendong Way recommended because of the need to use housing land on the fringe of the urban area more efficiently, and that such development may utilise limited residual capacity in carriers to existing Orange STP. Ploughmans Creek should be managed as a riparian corridor.
Land north of LU-2 'Beer Road Area'	Rural	Urban residential	Rural	Rural	Land identified as potential future urban in original SSS, but now not considered appropriate for urban development because of relative remoteness from existing and proposed urban area.
North West					
LU-3 South	Rural residential	Urban residential	Rural residential	Large lot residential	Large lot development (2,000 to 4,000m ² allotments) recommended because of the need to use housing land on the fringe of the urban area more efficiently, and that such development may utilise limited residual capacity in carriers to existing Orange STP. Conversion from 2ha to large lot residential development likely to occur in medium to long term because of established lifestyle lots and a school in the area.
LU-3 North	Rural residential	Rural residential	Rural / Rural	Rural / Rural	This area should be a holding area in the event that urban development in

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Land Unit	Role identified in 2004 SSS		Role identified in 2010 SSS Update		Comments / Actions
	Short Term	Medium to Long Term	Short Term	Medium to Long Term	
			residential	residential	the Broken Shaft Creek valley (LU-4 and LU-5) is required. 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.
LU-4 East (land currently zoned for rural residential purposes)	Rural and rural residential	Rural and rural residential	Large lot residential	Large lot residential	Large lot development (minimum 4,000m ² allotments) recommended because of the need to use housing land on the fringe of the urban area more efficiently, and that such development may utilise limited residual capacity in carriers to existing Orange STP.
LU-4 West (land zoned for rural purposes)	Rural	Rural	Rural	Rural	This area should be a holding area in the event that urban development in the Broken Shaft Creek valley (LU-4 and LU-5) is required. This is only likely beyond the life of this strategy. 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.
LU-5	Rural and rural residential	Rural and rural residential	Rural and rural residential	Rural and rural residential	This area should be a holding area in the event that urban development in the Broken Shaft Creek valley (LU-4 and LU-5) is required. This is only likely beyond the life of this strategy. 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 development for urban purposes.
South					
LU-6	Rural	Rural	Rural	Rural	Unlikely to be required for urban development during the life of the strategy.
LU-7	Rural	Rural	Rural	Rural	Unlikely to be required for urban development during the life of the strategy.
LU-8	Rural	Rural	Rural	Rural	Unlikely to be required for urban development during the life of the

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Land Unit	Role identified in 2004 SSS		Role identified in 2010 SSS Update		Comments / Actions
	Short Term	Medium to Long Term	Short Term	Medium to Long Term	
LU-9	Rural	Rural	Rural	Rural	strategy. Unlikely to be required for urban development during the life of the strategy.
LU-10 North	Rural	Urban residential	Rural	Urban residential or large lot residential	Infrastructure assessment (Geolyse, Dec 2009) determined broad urban infrastructure costs. Urban or large lot residential development should occur in medium to long term, in conjunction with urban development in LU-13, and only take place once urban development in LU-11 is well established.
LU-10 South	Rural	Rural or rural residential	Rural	Urban residential or large lot residential	Infrastructure assessment (Geolyse, Dec 2009) determined broad urban infrastructure costs. Urban or large lot residential development should occur in long term, following or in conjunction with urban development in the remainder of LU-10.
LU-11	Rural	Urban residential	Urban	Urban	Infrastructure assessment (Geolyse, Dec 2009) determined broad urban infrastructure costs. Area is suitable for development for residential, education, research, local services and health services activities subject to infrastructure needs being addressed.
LU-12 (formerly land north of LU-10)	Rural residential	Urban residential	Rural residential	Urban residential	Urban development in the medium to long term subject to further planning and feasibility studies, however this land should logically be developed for urban residential purposes before or at the same time as LU-10 North and only once urban development in LU-11 is well established.
Supplementary Areas					
Health Services and Recreation Area	NA	NA	Health services and recreation	Health services and recreation	Health and recreation 'campus' development role appropriately reflects both the existing and proposed developments in this area and that only limited urban development should be allowed in the Orange water supply catchment.
LU-13 (New LU)	NA	NA	Employment (industrial and business park)	Employment (industrial and business park)	Medium to long term development of this area to reflect Sub Regional Strategy recommendations for more employment land to be made available along the rail corridor.
Land east of LU-13	NA	NA	Education and	Education and	This area identified as 'SA A' in the Sub Regional Strategy

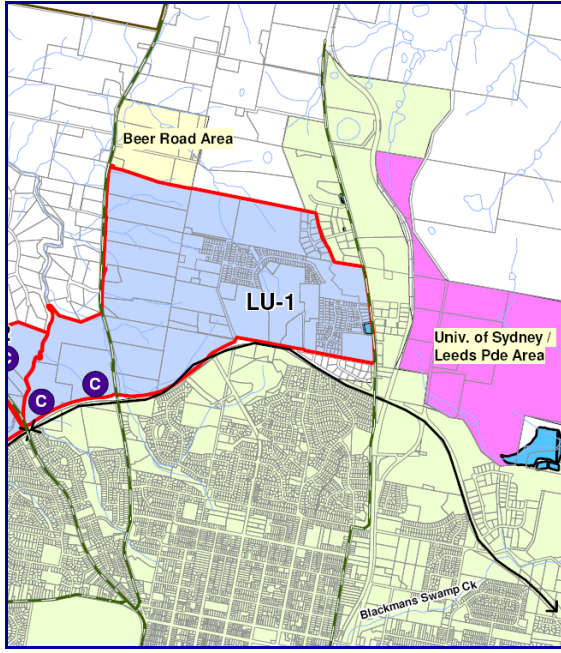
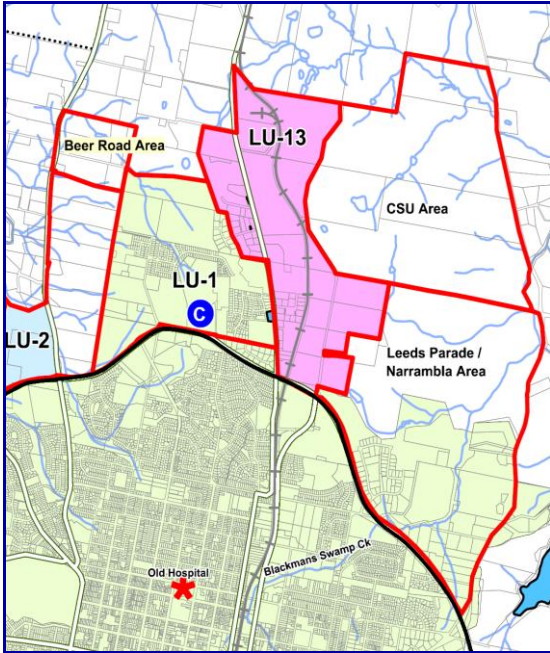
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Land Unit	Role identified in 2004 SSS		Role identified in 2010 SSS Update		Comments / Actions
	Short Term	Medium to Long Term	Short Term	Medium to Long Term	
(CSU)			rural	rural residential	Development that strengthens the significance of this area as an education precinct should be given priority. Rural residential development on surplus university land may be appropriate in the medium to long term (in accordance with Sub-Regional Strategy recommendations).
Leeds Parade and Narrambla Area	NA	NA	Urban residential, employment and utilities uses in the south Rural in the north	Urban residential, employment and utilities uses in the south Urban residential and rural residential in the north	Medium to long term development of this area to reflect: <ul style="list-style-type: none"> land zoning established in Orange LEP 2000 (Amendment No. 6); and Sub-Regional Strategy recommendations that land north of Council utilities uses is suitable for rural residential development Sub-Regional Strategy recommendations that land immediately north and north west of Narrambla business park be made available for employment uses
Land north of LU-13 (North Clergate)	NA	NA	Rural	Rural and employment	This area identified as 'SA B' in the Sub Regional Strategy Land should be made available for industrial development that requires large lots (in accordance with Sub-Regional Strategy recommendations).

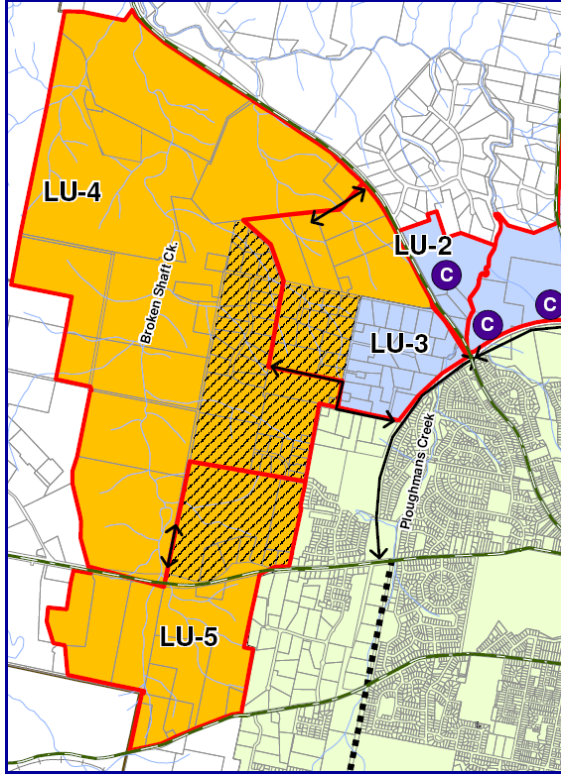
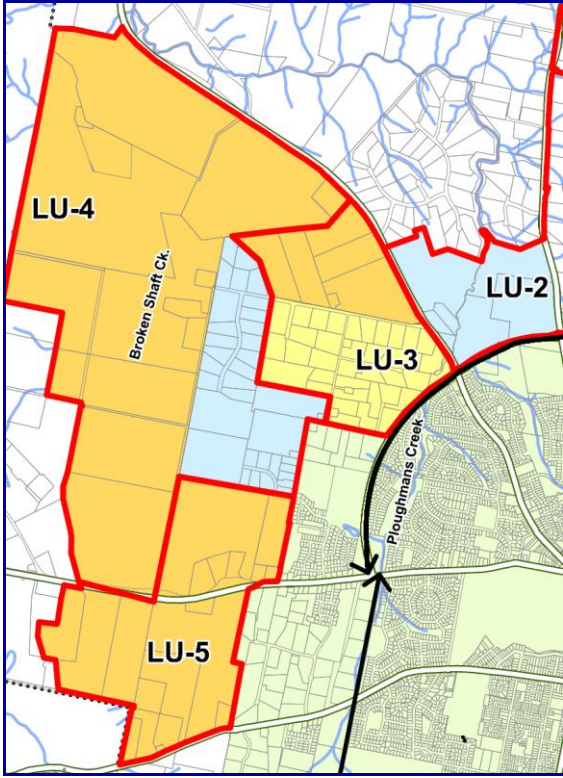
Notes:

1 Short term (up to 5 years), medium term (5 to 15 years) and long term (15+ years) are generic descriptions of periods relating to the scope of a 20 year structure plan horizon (i.e. 2010 to 2030)

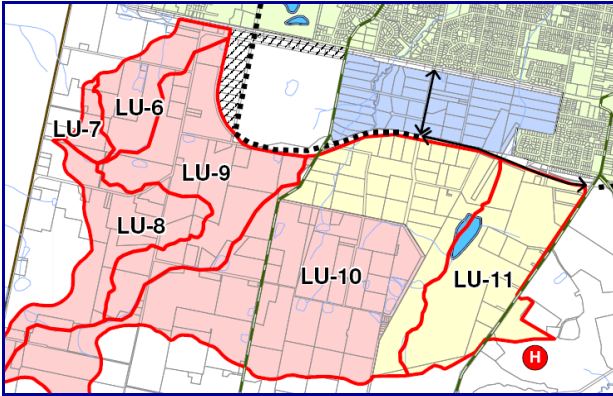
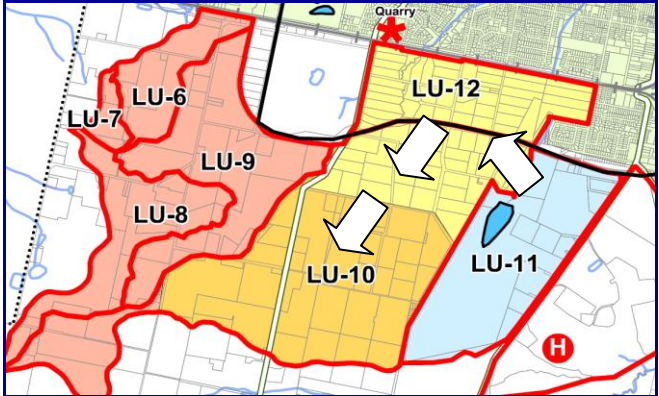
5.1 North and north east areas update

2004 SSS	SSS Update
 <p>The 2004 SSS map shows the Beer Road Area in yellow, LU-1 in blue, and the University of Sydney / Leeds Parade area in pink. Blackmans Swamp Ck is labeled at the bottom. Two 'C' markers are visible on the western side.</p>	 <p>The SSS Update map shows the Beer Road Area in yellow, LU-1 in blue, LU-13 in pink, CSU Area in light blue, and Leeds Parade / Narrambla Area in light green. Blackmans Swamp Ck is labeled. A red star marks the Old Hospital location. 'C' markers are present near LU-1 and LU-2.</p>
<p>Summary:</p> <ul style="list-style-type: none"> • LU-1 identified for short term urban development • Beer Road area subject to further feasibility studies • University of Sydney / Leeds Parade area: set aside for industrial purposes in the medium to long term • Possible North Orange centre locations west of Burrendong Way 	<p>Summary:</p> <ul style="list-style-type: none"> • LU-1 (Waratah) has been rezoned and is being developed • LU-13 is a medium term employment area, reflecting Sub Regional Strategy recommendations • CSU and Leeds Parade / Narrambla areas will zoned and developed in accordance with Sub Regional Strategy recommendations • Limited development in environmentally constrained areas west of Waratah (incl. Beer Road area) • North Orange neighbourhood shopping centre location at Waratah confirmed

5.2 North west and west areas update

2004 SSS	SSS Update
	
<p>Summary:</p> <ul style="list-style-type: none"> • Short term urban proposed for LU-2 and LU-3 • Broken Shaft Creek valley remains a long term development option due to sewer headworks costs • Limited urban and large lot residential opportunities (up to 250 ET) in area west of Ploughmans creek valley (i.e. the hatched area) 	<p>Summary:</p> <ul style="list-style-type: none"> • Approximately 500 ET sewer line capacity for land units west of Burrendong Way, subject to development being able to connect to existing carriers • Short term: Consider planning proposal for LU-2 to determine optimum mix of urban and large lots • Short term: Consider reduction in minimum allotment size in Rural Residential zoned areas LU-2 (west), LU-3 (south) and LU-4 (east) to support large lots (i.e. 2,000 – 4,000m² minimum) • Minimum 4,000m² only appropriate in Broken Shaft Creek valley view catchment • Re-subdivision of LU-3 (south) likely to occur in medium term given existing established housing and school in this area • Broken Shaft Creek valley (LU-4 (west) and LU-5) remains a long term development option

5.3 South areas update

2004 SSS	SSS Update
	
<p>Summary:</p> <ul style="list-style-type: none"> • Short term urban proposed for existing rural residential area north of LU-10 • Medium term 'South urban growth strategy' for LU-10 (north) and LU-11 dependent on decisions on Crown land made by the State Government, and subject to planning and feasibility studies • Other areas not likely to be required for urban development purposes in the life of the SSS 	<p>Summary:</p> <ul style="list-style-type: none"> • Hospitals development and DPI land zoning decisions bring forward the staging of LU-11 and the Health Services and Recreation Precinct • Further urban development to be staged in an anticlockwise fashion ↻ • Infrastructure analyses required to determine optimum lot mix and development timing in LU-12 and LU-10 • Remaining areas not likely to be required for urban development purposes in the life of the SSS