



Tenterfield Shire Council Development Servicing Plan Water Supply Services

May 2012

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Resolution 259/12 – 25 July 2012

DEVELOPMENT SERVICING PLAN – WATER SUPPLY

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1	WATER SUPPLY DSP – DRAFT FOR PUBLIC DISPLAY	R CAMPBELL	M HOWLAND	24/5/12



SUMMARY

This Development Servicing Plan (DSP) covers water supply Developer Charges for the areas served by the Tenterfield Shire Council water supply schemes.

Table 1 – Service Areas

Service Area	Areas Included
Tenterfield	The area supplied by the Tenterfield water treatment plant
Urbenville	The area supplied by the Urbenville water treatment plant
Jennings	The area supplied by the Jennings distribution system

This document has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) issued by the former Department of Land and Water Conservation (DLWC), now Department of Environment, Climate Change and Water (DECCW) pursuant to section 306 (3) of the *Water Management Act 2000*.

The timing and expenditure for works serving the area covered by this DSP and the calculation of developer charges is given in Appendix 1. Levels of service to be provided to the service areas are summarised in Section 4.7.

The developer charges for the water supply DSP areas are shown in Table 2.

Table 2 – Developer Charge – Water Supply

DSP Area	Developer Charge (2012 \$ per Equivalent Tenement)
Tenterfield and Urbenville	\$5,500
Jennings	\$668

The developer shall also be liable for all additional works not specifically included in the capital works program, where required to serve the development. The developer shall be responsible for the full cost of the design and construction of water supply reticulation works within subdivisions.

Developer charges relating to this DSP will be reviewed after a period of not more than 6 years.

In the period between any review, developer charges will be adjusted annually on 1 July on the basis of the movements in the CPI for Sydney, excluding the impact of GST.

Further details relating to the water supply assets and to this DSP can be found in the Background Document in Appendix 1.



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1. INTRODUCTION

Section 64 of the Local Government Act 1993 enables a local water utility to levy developer charges for water supply and sewerage management works. This power derives from a cross-reference in that Act to section 306 of the Water Management Act 2000.

A Development Servicing Plan (DSP) is a document which details the developer charges to be levied on development areas utilising a local water utility's infrastructure.

This DSP covers water supply Developer Charges for the provision of water to the areas served by the Tenterfield Shire Council water supply schemes. The provision of bulk water supply services to Jennings by Southern Downs Regional Council is covered by the Southern Downs Regional Council Headworks Contributions Plan.

This DSP has been prepared in accordance with the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002) issued by the Department for Land and Water Conservation (now NSW Office of Water), pursuant to section 306 (3) of the Water Management Act 2000.

This DSP supersedes any other requirements related to water supply developer charges for the areas covered by the DSP. This DSP takes precedence over any of Council's codes or policies where there are any inconsistencies relating to water supply developer charges.



2. ADMINISTRATION

DSP Name	Tenterfield and Urbenville Water Supply
DSP Boundaries	The DSP area boundary is defined as the area served by the Tenterfield and Urbenville water supply systems. The water supply schemes are discussed in Section 4.

DSP Name	Jennings Water Supply
DSP Boundaries	The DSP area boundary is defined as the area served by the Southern Downs Regional water supply system within Tenterfield Shire Council area. The water supply scheme is discussed in Section 4.

Developments may attract contributions where such development will utilise the Tenterfield Shire Council water supply schemes. Additional contributions related to the provision of bulk water supply services by Southern Downs Regional Council may also apply.

Tenterfield Shire Council does not intend to provide water supply services outside these DSP areas within the next 5 years. Any development outside these DSP areas that requires a water supply service may require a special agreement with Council.

2.1 Payment of Developer Charges

2.1.1 Indexation

Charges will be indexed on the 1st July each year in line with the Consumer Price Index (CPI, All Groups Sydney) as published by the Australian Bureau of Statistics.

2.1.2 Tenement and Demand Projections

Most types of development will increase the demand on a water supply system. The increase in demand is assessed in terms of equivalent tenements (ET). The calculation of equivalent tenements for each development will be made in accordance with the methods described in the NSW Water Directorate publication *Section 64 Determinations of Equivalent Tenements Guidelines (2005 and 2009 Addendum)*.

2.1.3 Timing

On receipt of a Development Application or a Water Service Application, Tenterfield Shire Council will advise the charges payable under this DSP.

Payment of developer charges must be made in the form of a cash payment to Tenterfield Shire Council.



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The developer contribution will apply for 12 months from the date of the assessment notice. After this time, the rate may increase (through indexation or review of this DSP) from the time the condition appears on the notice of development consent until the payment is received.

2.1.4 Waiver

Tenterfield Shire Council may waive developer contributions where the proponent demonstrates to Council's satisfaction that it is a non-profit and charitable organisation, which, by virtue of carrying out such development, is considered to be making a significant and positive contribution to the community and is unable to recover the charge from the end user.

2.2 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply reticulation works within developments including subdivisions. The design and construction of the works shall be in accordance with Council's development specifications for water services.

2.3 DSP Review

Developer charges relating to this DSP will be reviewed after a period of not more than 6 years.



3. THE DEVELOPER CHARGES PROCESS

3.1 Introduction

Developer charges are up-front charges levied to recover part of the infrastructure costs incurred in servicing new developments or additions/changes to existing developments. Developer charges serve two related functions:

- They provide a source of funding for infrastructure required for new urban development; and
- They provide signals regarding the cost of urban development and thus encourage less costly forms and areas of development.

The Developer Charges calculation is based on the net present value (NPV) approach adopted by the Independent Pricing and Regulatory Tribunal (IPART) for the metropolitan water utilities. The fundamental principle of the NPV approach is that the investment in assets for serving a development area is fully recovered from the development. The investment is recovered through up-front charges (i.e. developer charges) and the present value (PV) of that part of annual bills received from the development in excess of operation, maintenance and administration (OMA) costs.

$$\text{Developer Charge} = \text{Capital Charge (cost of providing the assets)} - \text{Reduction Amount (cost recovered through annual bills).}$$

The Capital Charge and Reduction Amount are discussed further in the following sections. The developer charges process is described fully in the *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater* (December 2002).

NSW non-metropolitan water supply authorities which propose to levy developer charges for water supply and/or sewerage need to prepare DSPs. The DSP details the calculation of the developer charges and is required to be fair and transparent.

Water supply authorities need to calculate and report developer charges in accordance with section 306 (3) of the Water Management Act 2000 and the Guidelines and to register their DSPs with the NSW Office of Water.

Developer charges relating to a particular DSP should be reviewed by the water authority after a period of 5 to 6 years. If the review indicates that the developer charges in the DSP remain valid, the DSP will apply for a further 5 to 6 years after the utility releases a public notice to this effect. However, if it is considered that a new DSP is warranted, then a new DSP shall be prepared, exhibited and registered.

3.2 Capital Charge

The capital cost includes the cost of providing, extending or augmenting assets required, or likely to be required, to provide services to a development area. The capital cost per equivalent tenement (ET) is the value of the relevant assets divided by the capacity of these assets (in ETs).



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Typically, the capacity of an asset would not be fully utilised until sometime after construction of the asset. The Return on Investment (ROI), also known as a holding charge, is based on the cost of early investment and recovery of the cost over time. The ROI factor is dependent on the period for take-up of the asset capacity, and the rate of return required for the asset.

$$\text{Capital Charge} = \text{Capital Cost} \times \text{Return on Investment (ROI) Factor}$$

The capital charge is calculated for each service area. Service areas are:

- An area served by a separate water supply system;
- Separate small towns or villages; or
- A new development area of over 500 lots.

Where the capital charges for two or more service areas are within 30% of each other, they are agglomerated into a single DSP area.

3.3 Reduction Amount

Tenterfield Shire Council has adopted the “Under 2000 Assessments” method for calculation of the Reduction Amount. The Reduction Amount is calculated as 50% of the capital charge.

In the long term, developer charges should cover the capital charge for serving a development area less the net present value of net income from annual charges for the development area. The reduction amount represents the NPV of net income (income less recurrent expenditure) from the development.



4. TENTERFIELD SHIRE COUNCIL WATER SUPPLY SERVICES

Tenterfield Shire Council provides reticulated water supply services to the main towns and adjacent areas of Tenterfield, Urbenville and Jennings (Figure 1). Water supply scheme maps are not available.

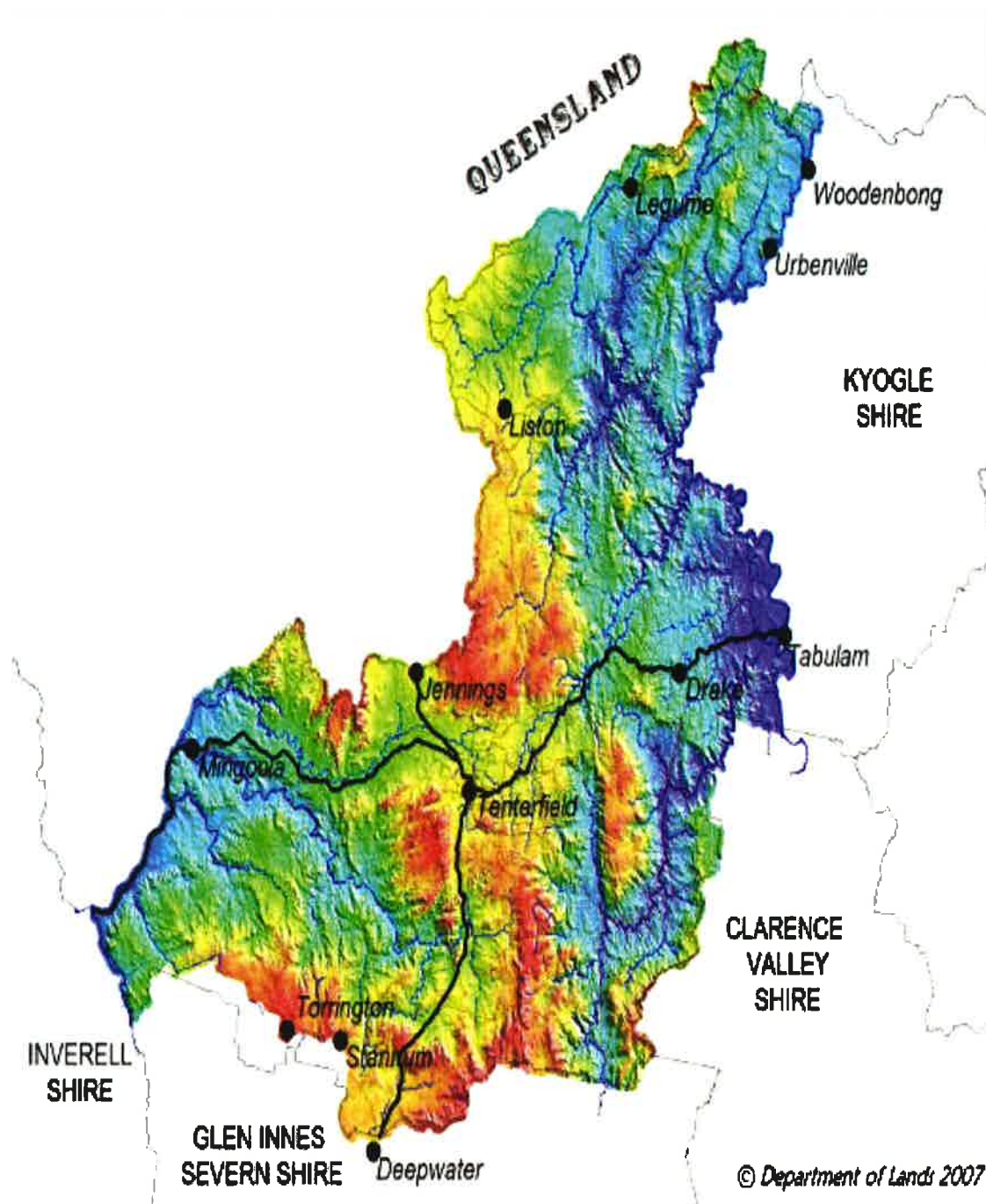


Figure 1 – Map of Tenterfield Shire



4.1 Tenterfield Water Supply

The water supply for Tenterfield is sourced from Tenterfield Dam on Tenterfield Creek and treated at the Tenterfield WTP. Treated water is pumped from the Tenterfield WTP via a 250mm diameter pipe to the main concrete reservoir in East Street (2.1 ML capacity) and by a series of mains to an auxiliary concrete reservoir on Hospital Hill (2.3 ML capacity) on the western side of Tenterfield.

4.2 Urbenville Water Supply

The water supply for the Urbenville system is sourced from the Urbenville Weir Pool on Tooloom Creek and treated at the Urbenville WTP. This system supplies the village of Urbenville in Tenterfield Shire and Muli Muli and Woodenbong in Kyogle Shire.

4.3 Jennings Water Supply Scheme

The village of Jennings is supplied from the Wallangarra system in the adjoining Southern Downs Regional Council in Queensland. The distribution and reticulation network are owned and operated by Tenterfield Shire Council.

4.4 Growth Projections

Developer charges contribute to the provision of system capacity to meet the demands of future development. New development may be served by a combination of existing and/or new assets.

The average growth rate and projected number of water supply tenements (equivalent tenements, ET) in each area is shown in Table 3.

Table 3 - Equivalent Tenement Projections – Water Supply

Service Area	30 year Average Growth (% p.a.) ¹	2012	2017	2022	2027	2032	2037	2042
Tenterfield	0.58%	1,768	1,849	1,933	2,022	2,077	2,077	2,077
Urbenville	0.58%	170	178	186	195	200	200	200
Jennings	0.58%	95	99	103	108	111	111	111
Shire	0.58%	2,087	2,183	2,283	2,388	2,453	2,453	2,453

1. The draft TSC IWCM Study (PB, 2011) predicts a 20 year growth rate of 0.9% p.a. for the shire

4.5 System Capacity

The system capacity is based on the following:

- Headworks – secure yield of water sources (ML/yr) and average annual demand of 153 kL/residential property/year in Tenterfield and 118 kL/residential property/year for the Urbenville system;
- Water treatment plant – design capacity of WTP and peak day demand of 2,000 L/ET/day;
- Reservoirs – capacity in ML and peak day demand of 2,000 L/ET/day (unless the total capacity is less than the distribution system capacity); and



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- Distribution system – projected number of tenements served at the end of the design horizon (30 years).

4.6 Design Parameters

Investigation and design of water supply system components is based on:

- Water Supply Investigation Manual (1986); and
- WSAA water supply code of Australia - WSA 03 2002.

4.7 Standards of Service

System design and operation are based on the following standards of service (from the TSC Water Services Strategic Plan, 2002). The Levels of Service are the targets which BSC aims to meet and are not intended as a formal customer contract.

Table 4 – Levels of Service

DESCRIPTION	UNIT	LEVEL OF SERVICE		
		Tenterfield	Urbenville	Jennings
SERVICE PROVIDED				
Dwelling (1998)	Number	1,530	88	63
Projected number of Dwellings in year 2005	Number	1,550	110	65
AVAILABILITY OF SUPPLY				
Normal Quantity Available:				
Domestic Peak Day	Kilolitres/ dwelling/day	3	2.10	2.50
Domestic Annual	Kilolitres/ dwelling/year	415	395	350
Total Peak Daily Capacity	Megalitres/day	4.9	0.25	0.20
Total Annual Secure Capacity	Megalitres/year	550 ⁽¹⁾ 615 ⁽²⁾	175	65-130
Fire Fighting:				7.5 L/S
Compliance with Building Code of Australia and NSW Fire Brigade requirements	% area	75	100	100



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DESCRIPTION	UNIT	LEVEL OF SERVICE		
		Tenterfield	Urbenville	Jennings
Pressure:				
Minimum pressure when conveying maximum instantaneous demand (0.15 L/s/tenement)	Metres head	< 12 ⁽³⁾	Not Known	Not Known
Maximum static pressure	Metres head	70	60	50
Service Interruptions				
No. of interruptions				
Planned	No./year	35	2	3
Unplanned	No./year	15	3	5
Maximum length of interruptions	Hours	6	6	6
Customer Complaints				
Quality	No./year	91	20	5
Pressure	No./year	5	0	2
Other	No./year	5	5	2
Response Times				
Pipeline Breaks	Hours	<1	<1	<1
Other oral complaints	Hours	<1	<1	<1
Written complaints	Days	14	14	14
Quality				
Compliance with 1987 NHMRC Guidelines	% tests passing	99	<10	99

1. If environmental flows are required to be maintained capacity is 510 ML/a
2. Estimated current unrestricted demand
3. Affects 25% town

4.8 Future Capital Works

Council plans to improve water quality, provide dam safety upgrades and renew ageing water supply assets. Capital works of \$14.0 M (2012 \$) will be required over the next 30 years to provide water supply services (refer Appendix 1). Any capital works in addition to those identified in this plan will be funded by developers. The developer shall be responsible for the full cost of the design and construction of reticulation works within subdivisions.



5. CALCULATION OF DEVELOPER CHARGES

5.1 Capital Charge

The capital charge was calculated for each service area based on the existing and future assets providing the services to each of the towns as shown in Table 5. Calculations are given in Appendix 1.

Table 5 – Calculated Capital Charges (2012 \$ per ET)

Service Area	Initial Capital Charge
Urbenville Water Supply Scheme	\$15,669
Tenterfield Water Supply Scheme	\$14,816
Jennings Water Supply Scheme	\$1,336

The capital charges were grouped into DSP areas of within 30% of the highest capital charge. The outcome is agglomeration of the DSP areas as shown in Table 6. The weighted average capital charge is determined from the proportion of growth in each DSP area. This is used to calculate the reduction amount for the whole shire.

Table 6 – Agglomeration of Service Areas (2012 \$ per ET)

Service Area	Capital Charge	DSP Area 1 (% of highest)	DSP Area 2 (% of highest)	Proportion of Growth	DSP Area Capital Charge	Weighted Average Capital Charge
Urbenville	\$15,669	100%		8.4%	\$14,891	\$1,314
Tenterfield	\$14,816	95%		87.0%		\$12,885
Jennings	\$1,336		9%	4.7%	\$1,336	\$62
Totals				100%		\$14,261

5.2 Reduction Amount

The reduction amount for developer charges for water supply was calculated as 50% of the calculated capital charge for each DSP area.

5.3 Developer Charges

The calculated developer charges for the DSP areas are shown in Table 7. These developer charges reflect the cost of assets for serving new development.

**Table 7 – Calculated Developer Charges (2012 \$ per ET)**

DSP Area	Capital Charge	Reduction Amount	Calculated Developer Charge
Tenterfield and Urbenville	\$14,891	\$7,446	\$7,446
Jennings	\$1,336	\$668	\$668

Council will apply developer charges for Tenterfield and Urbenville sewerage that are lower than the calculated charges (Table 8).

Table 8 – Adopted Developer Charges

DSP Area	Developer Charge (2012 \$ per Equivalent Tenement)
Tenterfield and Urbenville	\$5,500
Jennings	\$668

The cross-subsidy payable by existing customers will be \$14 per assessment per annum as shown in Table 9.

Table 9 – Cross-Subsidy Calculation

DSP area	Calculated Developer Charge (per ET)	Proportion of Growth	New Developer Charge (per ET)
Tenterfield	\$7,446	8%	\$5,500
Urbenville	\$7,446	87%	\$5,500
Jennings	\$668	5%	\$668
Weighted Average Charge	\$7,130	100%	\$5,275
Expected growth (ET p.a.)			12
Cross-subsidy (each year)			\$21,997
Cross-subsidy (per residential assessment per year)			\$14

Background information and calculations relating to this DSP are included in the Background Document attached in Appendix 1. This document contains detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of existing assets, valuation of assets and calculation of the reduction amount.



6. ABBREVIATIONS AND GLOSSARY

Annual demand	Total annual water consumption
Capital Cost	The present value (MEERA basis) of assets used to service the development
Capital Charge	Capital cost of assets per ET x Return on Investment (ROI) Factor
CPI	Consumer Price Index
Developer Charge (DC)	A charge levied on developers to recover part of the capital cost incurred in providing infrastructure to ne development.
Discount Rate	The rate used to calculate the present value of money arising in the future.
DSP	Development Servicing Plan
DLWC	(former) Department of Land and Water Conservation
EP	Equivalent person
ET	Equivalent tenement
IPART	Independent Pricing and Regulatory Tribunal
kL	Kilolitres
L	Litres
LWU	Local water utility
MEERA	Modern Equivalent Engineering Replacement Asset
mg	milligrams
mL	millilitres
ML	Megalitres
NOW	NSW Office of Water
NPV	Net present value
Peak day demand	Highest water consumption (in a day) in the year
PV	Present value.
Reduction Amount	The amount by which the capital charge is reduced to arrive at the developer charge. This amount reflects the present value of the capital contribution that will be paid by the occupier of a development as part of future annual charges.
ROI	Return on investment. Represents the income that is or could be generated by investing money.
Service Area	An area served by a separate water supply system, a small separate town or village, or a new development of over 500 lots.
TSC	Tenterfield Shire Council
WTP	Water treatment plant



7. REFERENCES

DLWC (2002) *Developer Charges Guidelines for Water Supply, Sewerage and Stormwater.*

NSW Water Directorate (2005) *Section 64 Determinations of Equivalent Tenements Guidelines.*

NSW Water Directorate (2009) *Section 64 Determinations of Equivalent Tenements Guidelines - Addendum.*

PB (2011) *Tenterfield Integrated Water Cycle Management Plan Draft Evaluation Report*

Tenterfield Shire Council (2005) *Strategic Business Plan for Water Supply Services*



Appendix 1 - DSP Background Document

30 Year Capital Works Program

ET projections

Capital Charge calculation

Tenterfield Shire Council - Water Supply ET Projections

From IWCM Report

IWCM predicts 0.9% p.a. growth

Connections	<i>(assume to be same as assessments)</i>		Year	0	5	10	15	20	25	30
Tenterfield	2009	20 yr Growth p.a.	30 yr average growth p.a.	2012	2017	2022	2027	2032	2037	2042
Residential	1438	0.90%	0.58%	1477	1545	1616	1690	1736	1736	1736
Rural	45	0.90%	0.58%	46	48	51	53	54	54	54
Non-Residential	284	0.90%	0.58%	292	305	319	334	343	343	343
TOTAL ASSESSMENTS	1767	16		1815	1898	1985	2076	2133	2133	2133
TOTAL ET				1768	1849	1933	2022	2077	2077	2077

From IWCM Report

Connections	<i>(assume to be same as assessments)</i>		Year	0	5	10	15	20	25	30
Urbenville	2009	20 yr Growth p.a.	30 yr average growth p.a.	2012	2017	2022	2027	2032	2037	2042
Residential	129	0.90%	0.58%	133	139	145	152	156	156	156
Rural	0	0.90%		0	0	0	0	0	0	0
Non-Residential	39	0.90%	0.58%	40	42	44	46	47	47	47
TOTAL ASSESSMENTS	168	2		173	180	189	197	203	203	203
TOTAL ET				170	178	186	195	200	200	200

From IWCM Report

Connections	<i>(assume to be same as assessments)</i>		Year	0	5	10	15	20	25	30
Jennings	2009	20 yr Growth p.a.	30 yr average growth p.a.	2012	2017	2022	2027	2032	2037	2042
Residential	94	0.90%	0.58%	97	101	106	110	113	113	113
Rural	0	0.90%		0	0	0	0	0	0	0
Non-Residential	3	0.90%	0.58%	3	3	3	4	4	4	4
TOTAL ASSESSMENTS	97	1		100	104	109	114	117	117	117
TOTAL ET				95	99	103	108	111	111	111

Total Shire	2032	0.90%	0.58%	2087	2183	2283	2388	2453	2453	2453
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Growth (30 years)	ET	%
Tenterfield	309	87%
Urbenville	30	8%
Jennings	17	5%
Shire	356	100%

Tenterfield Water Supply Scheme										Summary									
Capital Charge Calculation										per ET		Total							
Pre 1996 discount rate										3%									
Post 1996 discount rate										7%									
Peak day demand (L/ET/d)										2,000									
Asset	Detail	Capital cost (\$'000) ¹	Year dollars ²	Capital Cost (\$'000, 2012) ³	Year commissioned	Effective year commissioned	Present value (2012 \$'000) ⁴	Capacity (ML)	Capacity (ETe)	Capital cost (\$/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge (\$/ET)				
Existing Water Sources																			
Dam		13,543	2011	13,842	1932	1996	13,842			3,530	2042	47	3%	1.82	6,436				
Dam Stage 2		3,912	2012	3,912	1976	1996	3,912			997	2042	47	3%	1.82	1,819				
Bore		404	2107	404	2003	2003	404			103	2042	40	7%	2.80	289				
Future Water Sources																			
none																			
Total Water Sources		17,859					18,156		3,922	4,630					8,544				
Existing Treatment																			
Water treatment plant		252	2011	258	1930	1996	258			103	2042	47	3%	1.82	188				
Water treatment plant		2649	2011	3,730	1956	1996	3,730			1,492	2042	47	3%	1.82	2,720				
Water treatment plant		737	2011	753	1967	1996	753			301	2042	47	3%	1.82	549				
Water treatment plant		730	2011	748	1983	1996	748			299	2042	47	3%	1.82	544				
Tenterfield Water Supply Treatment Plant - 06/07 Additions		1	2011	1	2007	2007	1			0	2042	36	7%	2.58	1				
Tenterfield Water Treatment - Chemical Handling Shed 07/08		3	2011	3	2008	2008	3			1	2042	35	7%	2.53	3				
Tenterfield Water Treatment - Chemical Handling Shed 08/09		44	2011	44	2009	2009	44			18	2042	34	7%	2.47	44				
Tenterfield Water Treatment - Boundary Fencing 08/09		13	2011	14	2009	2009	14			5	2042	34	7%	2.47	13				
Tenterfield Water Treatment - Mains Power Upgrade 08/09		11	2011	11	2009	2009	11			5	2042	34	7%	2.47	11				
Tenterfield Water Treatment - Flouide Dosing Plant 08/09		61	2011	63	2009	2009	63			25	2042	34	7%	2.47	62				
Tenterfield Water Treatment Plant - Chemicals Handling Shed		4	2011	4	2010	2010	4			2	2042	33	7%	2.42	4				
Chemical Handling Shed 10/11		18	2011	18	2010	2010	18			7	2042	33	7%	2.42	16				
Flouide Dosing Plant		2	2011	2	2011	2011	2			1	2042	32	7%	2.36	2				
Flouide Dosing Plant		13	2011	13	2011	2011	13			5	2042	32	7%	2.36	13				
Future Treatment																			
none																			
Total Treatment		5,539					5,661		2,500	2,264					4,173				
Existing Transfer System																			
Tenterfield Mains1 Armdale Street - WTM1ARMP01		47	2011	49	1970	1996	49			23	2042	47	3%	1.82	43				
Tenterfield Mains1 Armdale Street - WTM1ARMP02		53	2012	53	1970	1996	53			26	2042	47	3%	1.82	47				
Tenterfield Mains1 Armdale Street - WTM1ARMP03		227	2013	227	1970	1996	227			109	2042	47	3%	1.82	199				
Tenterfield Water Supply Main - 06/07 Additions		168	2076	168	2007	2007	168			81	2042	36	7%	2.58	209				
Tenterfield Mains Augmentation Townes Extension 07/08		1	2077	1	2008	2008	1			0	2042	35	7%	2.53	1				
Tenterfield Mains Augmentation Kelly Extension 07/08		1	2078	1	2008	2008	1			0	2042	35	7%	2.53	1				
Tenterfield Mains Augmentation 07/08 East Street		15	2079	15	2008	2008	15			7	2042	35	7%	2.53	19				
Tenterfield Mains Augmentation Riley St SubDivision 07/08		10	2080	10	2008	2008	10			5	2042	35	7%	2.53	12				
Tenterfield Mains Meter Replacement 07/08		16	2081	16	2008	2008	16			8	2042	35	7%	2.53	20				
Tenterfield Mains Raising Fireplugs 07/08		2	2082	2	2008	2008	2			1	2042	35	7%	2.53	3				
Tenterfield Mains Replacement Rouse Street 07/08		4	2083	4	2008	2008	4			2	2042	35	7%	2.53	5				
Tenterfield Mains Millrace Fire Service Rouse Street 07/08		6	2084	6	2008	2008	6			3	2042	35	7%	2.53	6				
Tenterfield Mains Slage 1 Simpson Street 07/08		25	2085	25	2008	2008	25			12	2042	35	7%	2.53	30				
Tenterfield Mains Augmentation 08/09 Martin Lane		10	2086	10	2009	2009	10			5	2042	34	7%	2.47	12				
Tenterfield Mains Augmentation 08/09 Whereat Lane		8	2087	8	2009	2009	8			4	2042	34	7%	2.47	9				
Tenterfield Mains Meter Replacement 08/09		18	2088	18	2009	2009	18			9	2042	34	7%	2.47	21				
Tenterfield Mains Replacement Rouse Street 08/09		18	2089	18	2009	2009	18			9	2042	34	7%	2.47	21				
Tenterfield Mains Installation of Flow Meters 08/09		1	2090	1	2009	2009	1			1	2042	34	7%	2.47	2				
Tenterfield Mains Extension 08/09 Scott St - Briarley		4	2091	4	2009	2009	4			2	2042	34	7%	2.47	5				
Tenterfield Mains Extension 08/09 Rouse St - Thfeld Car Centre		0	2092	0	2009	2009	0			0	2042	34	7%	2.47	0				
Tenterfield Mains Extension 08/09 Scott St - St Josephs		1	2093	1	2009	2009	1			1	2042	34	7%	2.47	1				
Tenterfield Water Mains Augmentation		31	2094	31	2010	2010	31			15	2042	33	7%	2.42	36				
Tenterfield Water Mains Extension		23	2095	23	2010	2010	23			11	2042	33	7%	2.42	27				
Tenterfield Water Riley Street Subdivision		98	2096	98	2010	2010	98			48	2042	33	7%	2.42	112				
Tenterfield Water Meter Replacement		6	2097	6	2010	2010	6			3	2042	33	7%	2.42	7				
Tenterfield Water Card Reader at Standpine		22	2098	22	2010	2010	22			10	2042	33	7%	2.42	25				
Mains Augmentation - Martin St		14	2099	14	2011	2011	14			7	2042	32	7%	2.36	16				
Meter Replacement		18	2100	18	2011	2011	18			9	2042	32	7%	2.36	20				
Riley Street Subdivision		80	2101	80	2011	2011	80			39	2042	32	7%	2.36	91				
High lift pump station 75KW		66	2104	66	2001	2001	66			32	2042	42	7%	2.92	93				
High lift pump station 45KW		96	2105	96	2002	2002	96			46	2042	41	7%	2.86	132				
High lift pump station 75KW		147	2106	147	2002	2002	147			71	2042	41	7%	2.86	203				
Future Transfer System																			
none																			
Total Transfer System		1,238					1,237		2,077	596					1,430				
Existing Reservoirs																			
Water storage		81168	132	2011	135	2003	135			65	2042	40	7%	2.80	183				
Water storage		81189	125	2011	127	2003	127			61	2042	40	7%	2.80	172				
Tenterfield Reservoir - Catchment Area Fence 07/08		33	2011	34	2008	2008	34			16	2042	35	7%	2.53	42				
Tenterfield Reservoir - Flood Warning System 07/08		10	2011	10	2008	2008	10			5	2042	35	7%	2.53	13				
Tenterfield Reservoir - Flood Warning System 08/09		46	2011	47	2009	2009	47			23	2042	34	7%	2.47	56				
Tenterfield Reservoir - Boundary Fence 08/09		19	2011	20	2009	2009	20			10	2042	34	7%	2.47	24				
Tenterfield Reservoirs - Dam Anchor Testing		151	2011	155	2010	2010	155			74	2042	33	7%	2.42	180				
Future Reservoirs																			
none																			
Total Reservoirs		518					529		2,077	255					669				
Notes																			
1. Capital cost from Council's asset registers and MEERA cost for future works																			
2. Base year of capital cost varies depending on asset data																			
3. Capital cost adjusted to 2012\$ using CPI for Sydney (ABS)																			
4. Capital cost of future works discounted to 2012\$																			

Urbenville Water Supply Scheme															
Capital Charge Calculation					Summary										
Pre 1996 discount rate	3%				per ET		Total								
Post 1996 discount rate	7%				Capital charge		\$15,689			2012\$ per ET					
Peak day demand (L/ET/d)	2,000														
Asset	Detail	Capital cost (\$'000) ¹	Year dollars ²	Capital Cost (\$'000, 2012\$) ³	Year commissioned	Effective year commissioned	Present value (2012 \$'000) ⁴	Capacity (ML)	Capacity (ETe)	Capital cost (\$/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge (\$/ET)
Existing Water Sources															
Tooloom Ck Weir		17	2011	16	1967	1996	16			12	2042	47	3%	1.82	22
Raw water pump station		85	2011	87	2001	2001	87			59	2043	43	7%	2.98	174
Future Water Sources															
none															
Total Water Sources		102					105		1,483	71					196
Existing Treatment															
Water treatment plant		17	2011	18	1982	1996	18			47	2042	47	3%	1.82	88
Urbenville Water Supply Treatment Plant - 08/07 Additions		24	2011	24	2007	2007	24			84	2042	38	7%	2.58	166
Urbenville Water Treatment Plant Augmentation 07/08		33	2011	34	2008	2008	34			91	2042	35	7%	2.53	230
Urbenville Water Treatment Plant Emergency Works 07/08		73	2011	75	2008	2008	75			169	2042	35	7%	2.53	502
Urbenville Water Treatment Plant Augmentation 08/09		61	2011	62	2009	2009	62			166	2042	34	7%	2.47	411
Urbenville Treatment Plant Augmentation		1951	2011	1,994	2010	2010	1,994			5,318	2042	33	7%	2.42	12,858
WTP - Augmentation		38	2011	39	2011	2011	39			104	2042	32	7%	2.36	245
WTP - Augmentation - Contract Management		43	2011	44	2011	2011	44			116	2042	32	7%	2.36	275
WTP Augmentation - Other Expenses		80	2011	82	2011	2011	82			219	2042	32	7%	2.36	517
Future Treatment															
none															
Total Treatment		2,320					2,371		375	6,322					15,288
Existing Transfer System															
Urbenville Main1 Tooloom Falls Road -WUJM1FRP02		2	2011	2	1989	1996	2			8	2042	47	3%	1.82	15
Urbenville Main1 Tooloom Falls Road -WUJM1FRP04		6	2011	6	1992	1996	6			29	2042	47	3%	1.82	53
Urbenville Water Supply Main - 08/07 Additions		2	2011	2	2007	2007	2			12	2042	38	7%	2.58	31
Urbenville Mains - Meter Replacement 07/08		1	2011	1	2008	2008	1			4	2042	35	7%	2.53	10
Urbenville Water Main - Replace Faulty Valves		2	2011	2	2010	2010	2			9	2042	33	7%	2.42	21
Urbenville Water Main - Mains Replacement		3	2011	3	2010	2010	3			17	2042	33	7%	2.42	41
Urbenville Meter Replacement 10/11		1	2011	1	2011	2011	1			7	2042	32	7%	2.36	15
Future Transfer System															
none															
Total Transfer System		17					17		200	85					185
Existing Reservoirs															
none															
Future Reservoirs															
none															
Total Reservoirs									200						
Notes															
1. Capital cost from Council's asset registers and MEERA cost for future works															
2. Base year of capital cost varies depending on asset data															
3. Capital cost adjusted to 2012\$ using CPI for Sydney (ABS)															
4. Capital cost of future works discounted to 2012\$															

Jennings Water Supply Scheme															
Capital Charge Calculation															
Pre 1996 discount rate	0.3%														
Post 1996 discount rate	0.7%														
Peak day demand (L/ET/d)	2,000														
Asset	Detail	Capital cost (\$'000) ¹	Year dollars ²	Capital Cost (\$'000, 2012\$) ³	Year commissioned	Effective year commissioned	Present value 2012 \$'000 ⁴	Capacity (ML)	Capacity (ETs)	Capital cost (\$/ET)	Year of full take-up	Years to full take-up	Discount Rate	ROI factor	Capital Charge (\$/ET)
Water Sources and Treatment															
Bulk supply from Southern Downs Regional Council															
Existing Transfer System															
Jennings Water Supply Main - 06/07 Additions		5	2011	5	2007	2007	5			46	2042	36	7%	2.58	125
Jennings Mains Augmentation - Gladstone Street 07/08		9	2011	9	2008	2008	9			81	2042	35	7%	2.53	204
Jennings Mains Replacement - Duke St 07/08		12	2011	13	2008	2008	13			114	2042	35	7%	2.53	287
Jennings Mains Augmentation - 08/09		2	2011	2	2009	2009	2			18	2042	34	7%	2.47	45
Jennings Mains Replacement - 08/09		9	2011	10	2009	2009	10			87	2042	34	7%	2.47	216
Jennings Water Supply Mains - Meter Replacement		1	2011	1	2010	2010	1			7	2042	33	7%	2.42	17
Mains Replacement		18	2011	19	2011	2011	19			169	2042	32	7%	2.38	400
Mains Extension (S67)		2	2011	2	2011	2011	2			18	2042	32	7%	2.39	43
Future Transfer System															
none															
Total Transfer System		59					60		111	542					1,336
Existing Reservoirs															
none															
Future Reservoirs															
none									111						
Total Reservoirs									111						
Notes															
1. Capital cost from Council's asset registers and MEERA cost for future works															
2. Base year of capital cost varies depending on asset data															
3. Capital cost adjusted to 2012\$ using CPI for Sydney (ABS)															
4. Capital cost of future works discounted to 2012\$															