SNOWY RIVER DEVELOPMENT CONTRIBUTIONS PLAN 2008

Appendix 1
Water & Sewer

Acknowledgments

This plan was primarily prepared by Colin Seaborn of SOS Initiatives Pty Ltd assisted by Rob Staples and Dilip Dutta of Snowy River Shire Council

Other people who have played a role in its preparation are:

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This Appendix has the following Development Servicing Plans (DSP):

Discounting of water and sewer contributions in Adaminaby, Berridale and Dalgety
Calculations of developer contributions for water and sewer take into account full asset value of the capital items. However the developer contributions to be charged under s64 for Adaminaby and Berridale have been discounted by the Council in accordance with the Guidelines. The value of the discount is specified in each DSP.

There are no developer charges for water and sewer under s64 in this plan for Dalgety.

APPENDIX 1 – DSP 1

Development Servicing Plan for Jindabyne Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Jindabyne development areas served by Snowy River Shire Council.

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

The area covered by this DSP is shown on the Jindabyne Catchment Map – See maps in the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the area covered by this DSP have been calculated as follows:

	Developer charges ($ per ET)
Water Supply	$4663
Sewerage	$5575

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI (based on Canberra All Groups Index) in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Jindabyne development areas served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.1 for Jindabyne Water & Sewer
DSP Area	The area covered by this DSP is shown on the Jindabyne Catchment Map – See Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate Jindabyne water supply system as defined in the catchment map. • Sewer – This is an area common to the water supply area and served by Jindabyne sewerage treatment works plus associated works in the Jindabyne catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREA COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	2954	
2011/12	3205	251
2016/17	3455	501
2021/22	3705	751
2026/27	3956	1002

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the Jindabyne catchment map (see maps in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Jindabyne catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

Jindabyne Sewerage Treatment Works serves the Jindabyne, East Jindabyne, Alpine Sands/Willow Bay and Tyrolean Village catchments. Costs have been shared between these catchments in proportion to the Equivalent Tenements in each catchment.

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on targeting the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions per year greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration ($ per ET) See Attachment E	Calculated Developer Charge ($ per ET)
Water – Jindabyne Catchment	$4767	$159	$55	$4663
Jindabyne Sewerage Treatment Plant Works	$3074	$306	-	$2768
Jindabyne Sewerage Catchment works	$2993	$241	$55	$2808
Sewer – Jindabyne Catchment Total	$6067	$547	$55	$5575

Developer Charges for different types of Development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	**Year Commissioned**	**Effective year of commissioning for ROI[1]**	**Capital Cost**	**Capacity[2] (ETs)**	**Capital Cost per ET**	**Year when Capacity is Taken up**	**Take-Up Period (years)**	**Return on investment Factor**	**Capital Charge per ET**
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

In calculating Jindabyne Sewer Capital Charge there were two components, (1) the capital charge for the Sewerage Treatment Works which is shared with East Jindabyne, Alpine Sands/Willow Bay and Tyrolean Village, and (2) the capital charge for distribution works in the Jindabyne catchment. Both Components are shown in Attachment B.

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET. The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D (both Jindabyne Sewerage Treatment Works and Jindabyne Sewerage Distribution)

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Alpine Sands/Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for different types of Development

Type of Dwelling/Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for Water @ $4663 per ET	Contribution Rate for Sewer @ $5575 per ET
Subdivision	lot	1	$4,663	$5,575
Dwellings - 1 bedroom	bedroom	0.57	$2,658	$3,178
Dwellings - 2 bedrooms	2 bedrooms	0.71	$3,311	$3,958
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$4,663	$5,575
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra bedroom > 4	$4,663 + $1,352 per b/r > 4	$5,575 + $1,617 per b/r >4
Lodges, resorts & motels	room	0.29	$1,352	$1,617
Child Care Centres	per 20 children greater than 20	1	$4,663	$5,575
Educational Establishments	20 day students	1	$4,663	$5,575
	6 boarders	1	$4,663	$5,575
Camping Grounds	site	0.29	$1,352	$1,617
Tourism facilities	room and/or impact of day visitors	0.29 per room or subject to individual assessment if significant numbers of day visitors	$1,352 per room or individual assessment	$$1,617 per room or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$466	$558
Commercial - retail	100m^2 of floor space	0.1	$466	$558
Commercial - restaurants	100m^2 of floor space	0.8	$3,730	$4,460
Industrial - light industry	lot	1	$4,663	$5,575
Industrial - heavy industry	Dependent on impact	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment

Attachment A – Calculation of the Capital Charge – Jindabyne Water

Asset No.	Component	Year Commissioned [1]	Effective year of commissioning for ROI1 [2]	Capital Cost (2007/08) ($) [3]	Capacity2 (ETs) [4]	Capital Cost per ET (2007/08) (5) = (3)/(4)	Year when Capacity is Taken up 3 [6]	Take-Up Period (years) (7) = (6)-(2)+1	Return on investment Factor 4 [8]	Capital Charge per ET (2007/08) (9) = (5)x(8)
	Pre-1996 Works									
2131	High Zone 2ML reservoir	1979/80	1995/96	708,199	3596	196.9	2019/20	25	1.39	275
2158	Rising Main Duplication	1979/80	1995/96	614378	3596	170.9	2019/20	25	1.39	238
2142	Pump Station Intake - High & low	1980/81	1995/96	412667	3596	114.8	2019/20	25	1.39	160
2143	Pump Station Intake - Mech & Elec	1980/81	1995/96	934891	3596	260.0	2019/20	25	1.39	362
2132	Jindabyne High Country 0.091ML Conc.	1989/90	1995/96	53613	3596	14.9	2019/20	25	1.39	21
785	Barry Way 2.5ML Conc.	1986/87	1995/96	941851	3596	261.9	2019/20	25	1.39	365
2159	Barry Way Zone - Rising Main 2	1986/87	1995/96	613688	3596	170.7	2019/20	25	1.39	238
2160	Leesville Industrial Estate Carrier Main	1987/88	1995/96	225285	3596	62.6	2019/20	25	1.39	87
2161	Leesville Reticulation	1987/88	1995/96	149753	3596	41.6	2019/20	25	1.39	58
	Leesville PS (2 x 30kW, 30l/s)	1987/88	1995/96	231840	3596	64.5	2019/20	25	1.39	90
2162	Snoway Mains	1990/91	1995/96	321109	3596	89.3	2019/20	25	1.39	124
2146	Lakewood Estate Mains	1984/85	1995/96	217496	3596	60.5	2019/20	25	1.39	84
2164	Plateau Estate - Water Reticulation	1993/94	1995/96	278985	3596	77.6	2019/20	25	1.39	108
2165	High Country Estate Mains	1989/90	1995/96	302955	3596	84.2	2019/20	25	1.39	117
2166	Station Resort Gravity trunk main 375	1986/87	1995/96	457014	3596	127.1	2019/20	25	1.39	177
2129	Lakewood (4 x 0.25) 1.0 MLConc.	1984/85	1995/96	237636	3596	66.1	2019/20	25	1.39	92
2148	Lakewood Pump Station	1984/85	1995/96	285453	3596	79.4	2019/20	25	1.39	111
2157	Old Town extensions by council	1984/85	1995/96	191534	3596	53.3	2019/20	25	1.39	74
2144	Barry Way Zone - Pump Stn	1986/87	1995/96	1308762	3596	363.9	2019/20	25	1.39	507
2145	High Country 2 X Pumps	1989/90	1995/96	46410	3596	12.9	2019/20	25	1.39	18
	Post-1996 Works									
2184	Mains	1996/97	1996/97	136184	3596	37.9	2019/20	24	1.96	74
2187	Pumping Plant	1996/97	1996/97	49690	3596	13.8	2019/20	24	1.96	27
2190	Chlorination Equipment	1997/98	1997/98	42294	3596	11.8	2019/20	23	1.91	22
2192	Control Equipment/Telemetry	1997/98	1997/98	128936	3596	35.9	2019/20	23	1.91	68
2201	Pumping Plant	1997/98	1997/98	61305	3596	17.0	2019/20	23	1.91	33
2248	Reservoirs- high & low zone roofs	2001/02	2001/02	292698	3596	81.4	2019/20	19	1.72	140
2267	Mains - Barry Way Trunkmain	2003/04	2002/03	323888	3596	90.1	2019/20	18	1.67	151
2256	Telemetry	2003/04	2003/04	102672	3596	28.6	2019/20	17	1.63	46
2245	Mains Delivery	2003/04	2003/04	46335	3596	12.9	2019/20	17	1.63	21
	Future Works									
Plan	New Trunk main to connect to the reservoir LV	2011/12	2011/12	300000	3596	83.4	2019/20	14	1.50	125
Plan	New 2.0ML Reservoir	2010/11	2010/11	1500000	3596	417.1	2019/20	15	1.54	642
Plan	Trunk Main to connect to High Zone Reservoir LV	2009/10	2009/10	250000	3596	69.5	2019/20	16	1.58	110
	Total									4767

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96. For post 1995/96 assets year of commissioning is assumed to be same as year of expenditure.

Note 2: Capacity Estimates have been based on peak demand of 3kL/ET as per DLWC guidelines (p26) & reservoir capacity 9.79 ML = 2930 ET
But in 2010/11 a 2.0ML Reservoir is to be built; at 3kl/ET this is equivalent to an additional 666 ETS & therefore total capacity would be 3596 ETs

Note 3: Based on 2954 ET as at 30 June 2007 and a growth of 50/yr then 3596 ETs is taken up in 2019/20

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years); PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment B – Calculation of the Capital Charge – Jindabyne Sewer

B.1 – Jindabyne Sewerage Treatment Works (shared with East Jindabyne, Alpine Sands/Willow Bay & Tyrolean Village catchments) Capital charge

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity2 (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up 2	Take-Up Period (years)	Return on investment Factor 3	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	Pre-1996 Works									
2276	Treatment Works Twin 4000EP Bathurst Boxes	1980/81	1995/96	$2,289,350	4667	490.5	2023/24	29	1.47	720
2277	Treatment Works Siteworks 8000EP	1980/81	1995/96	$449,500	4667	96.3	2023/24	29	1.47	141
2278	Prelim Treatment	1980/81	1995/96	$868,000	4667	186.0	2023/24	29	1.47	273
2279	Treatment Lagoons stage 1	1980/81	1995/96	$381,300	4667	81.7	2023/24	29	1.47	120
2280	Treatment Lagoons stage 2 & road	1988/89	1995/96	$896,402	4667	192.1	2023/24	29	1.47	282
2281	Sewerage Treatment - chemical	1988/89	1995/96	$194,733	4667	41.7	2023/24	29	1.47	61
2282	Building Concrete works PE	1988/89	1995/96	$424,700	4667	91.0	2023/24	29	1.47	134
	Post-1996 Works									
2350	Treatment Works	2001/02	2001/02	16587	4667	3.6	2023/24	23	1.91	7
2329	Jindabyne Golf Course Effluent study	1999/2000	1999/2000	89813	4667	19.2	2023/24	25	2.00	39
	Future Works									
Plan	Jindabyne STW. Augmentation Concept Study	2008/09	2008/09	$100,000	4667	21.4	2023/24	16	1.58	34
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2009/10	2009/10	$1,000,000	4667	214.3	2023/24	15	1.54	330
Plan	Jindabyne STW. Augmentation	2012/13	2012/13	$3,000,000	4667	642.8	2023/24	13	1.45	934
	Total	Capital Charge per ET for Jindabyne, East Jindabyne & Tyrolean Village for Jindabyne STW								3074

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24

Note 3: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

B.2 – Jindabyne Catchment Sewerage Distribution Works Capital Charge

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08 $)	Capacity2 (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up 2	Take-Up Period (years)	Return on investment Factor 3	**Capital Charge per ET (2007/08)**
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	Pre-1996 Works				Jindabyne only					
2290	Snoway Estate Sewer Mains	30/06/1991	1995/96	$697,254	3804	183.3	2023/24	29	1.47	269
2291	Leesville Trunk Sewer Main 300 VC	30/06/1988	1995/96	$337,900	3804	88.8	2023/24	29	1.47	130
2292	Leesville Industrial Estate Sewer UPV	30/06/1987	1995/96	$712,109	3804	187.2	2023/24	29	1.47	275
2296	#6 Rising Sewer Main Sport	1988/89	1995/96	$218,513	3804	57.4	2023/24	29	1.47	84
2297	Rising Sewer Mains 1 2 2A	1980/81	1995/96	$1,240,000	3804	326.0	2023/24	29	1.47	478
2306	#1 Sewer Pump Station 2 x 25 KW 20	1979/80	1995/96	$294,500	3804	77.4	2023/24	29	1.47	114
2307	#2A Sewer P/S	1980/81	1995/96	$496,000	3804	130.4	2023/24	29	1.47	191
2308	#3Sewer P/S	1980/81	1995/96	$310,000	3804	81.5	2023/24	29	1.47	120
2309	#4 Sewer P/S	1980/81	1995/96	$620,000	3804	163.0	2023/24	29	1.47	239
2310	#5Sewer P/S	1986/87	1995/96	$810,383	3804	213.0	2023/24	29	1.47	313
2311	#6 Sewer P/S Leesville /Spor	1989/90	1995/96	$77,500	3804	20.4	2023/24	29	1.47	30
2312	Sewer Mains Additions -1995/96	1995/96	1995/96	$175,807	3804	46.2	2023/24	29	1.47	68
	Post-1996 Works									
2313	Sewer Mains Additions -1996/97	1996/97	1996/97	$226,408	3804	59.5	2023/24	28	2.16	128
2316	Subsidised Sewerage Scheme	1997/98	1997/98	$1,019,043	3804	267.9	2023/24	27	2.11	564
2317	Subsidised Sewerage Scheme	1998/99	1998/99	$178,987	3804	47.1	2023/24	26	2.05	97
2320	Sewer Easements	1999/200	1999/200	$84,382	3804	22.2	2023/24	25	2.00	44
2328	Sewerage Pump Station - 1999/2003	2002/2003	2002/2003	$93,733	3804	24.6	2023/24	22	1.86	46
2355	Pumping Station - 2004 onwar	2003/04	2003/04	$72,246	3804	19.0	2023/24	21	1.81	34
2352	Telemetry - Sewer (Catchment 67.07%)	2003/04	2003/04	$59,695	3804	15.7	2023/24	21	1.81	28
	Future Works									
Plan	Pump Station 2 upgrade & overflow storage	2009/10	2009/10	$400,000	3804	105.2	2023/24	15	1.54	162
Plan	Mains - Mitchell Ct	2011/12	2011/12	$400,000	3804	105.2	2023/24	13	1.45	153
Plan	Augment. Jind SPS # 6	2012/13	2012/13	$150,000	3804	39.4	2023/24	12	1.41	56
Plan	Jind SPS 1 upgrade	2011/12	2011/12	$120,000	3804	31.5	2023/24	12	1.41	45
								Total		**2993**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.

For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..

With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and 4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.

This indicates capacity of the sewerage system will be reached around 2023/24

Note 3: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)

PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Reduction Amount for Jindabyne Water

PV of New ETs (ie Growth of 50 per yr over 20 yrs @ 7% discount)				-530	
Assume: Renewal Expenditure occurs at end of life of asset - uses NSW Ref Rates Manual asset lives					
Relevant Assets to be renewed or upgraded in next 50 years:					
Asset No.	**Description**	**Year built**	**Meera Renewal Cost**	**Life of Asset**	**Year of Replacement**
Plan	Intake station sand cleaning & bank stabilisation	Renewal identified in plan	60,000	80 yrs	2008/09
Plan	Intake draft tube corrosion protection HZLZ/BWZ	Renewal identified in plan	50,000	50 yrs	2008/09
Plan	Pipe Replacement Snowy Ave		300,000	80 yrs	2008/09
			410,000		
Plan	Water treatment Equipment BWZ		50000	25	2011/12
Plan	Booster pump station M&E works LW		200000	25	2012/13
Plan	Booster pump station M&E works HC		50000	25	2017/18
Plan	Water treatment Equipment BWZ		100000	25	2019/20
Plan	Intake pump station M& E works BWZ		500000	25	2024/25
Plan	Booster pump station M&E works LV		150,000	25	2027/28
Plan	Booster pump station M&E works LW		200000	25	2037/38
Plan	Booster pump station M&E works HC		50000	25	2042/43
Plan	Water treatment Equipment BWZ		100000	25	2044/45
Plan	Intake pump station M& E works BWZ		500000	25	2049/50
	Booster pump station M&E works LV		150,000	25	2052/53
	NPV of Renewals				$561,374
	PV of new ETs				-530
	ET as at June 30 2007				2,954
	PV of existing + new ETs				-3,534
	Reduction Amount per ET				-$158.85

Attachment D – Calculation of Reduction Amount for Jindabyne Sewer

D.1 - Jindabyne Sewerage Treatment Works (shared with East Jindabyne, Tyrolean Village catchments)

PV of New ETs for Jindabyne, E Jindabyne, Willow Bay & Tyrolean Village					-686
	(ie Growth of 67.75 per yr over 20 yrs @ 7% discount)				
Asset No.	**Description**				
		Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	30/06/2010	1000000	20 yrs	2029/30
2276	Treatment Works Twin 4000EP	30/06/1981	2289350	50 yrs	2030/31
2278	Prelim Treatment	30/06/1981	868000	50 yrs	2030/31
2279	Treatment Lagoons stage 1	30/06/1981	381300	50 yrs	2030/31
2277	Treatment Works Siteworks 8000EP	30/06/1981	449500	50 yrs	2030/31
			3988150		
2350	Treatment Lagoons stage 2 & road	30/06/1989	896402	50 yrs	2038/39
2282	Building Concrete works PE	30/06/1989	424700	50 yrs	2038/39
			1321102		
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2029/30	1000000	20 yrs	2049/50
	NPV of Renewals				$1,287,525
	PV of new ETs				-686
	ETs Jind, E Jind, Willow Bay & Tyrolean Village as at 30 June 2007				3516
	Reduction Amount per ET				**-$306.41**

D.2 – Jindabyne Catchment Sewerage Distribution Works

PV of New ETs (ie Growth of 50 per yr over 20 yrs @ 7% discount) -530

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost ($2007/08)	Life of Asset	Year of Replacement
Plan	SPS M & E Works ($1m over 5 years from 2015)	Pre 2008	200000	20 years	2015/16
Plan	SPS M & E Works ($1m over 5 years from 2015)	Pre 2008	200000	20 years	2016/17
Plan	SPS M & E Works ($1m over 5 years from 2015)	Pre 2008	200000	20 years	2017/18
Plan	SPS M & E Works ($1m over 5 years from 2015)	Pre 2008	200000	20 years	2018/19
Plan	SPS M & E Works ($1m over 5 years from 2015)	Pre 2008	200000	20 years	2019/20
2352	Telemetry - Sewer (Catchment 67%)	3/12/2003	59695	20 yrs	2023/24
Plan	SPS M & E Works ($1m over 5 years from 2015)	2015/16	200000	20 years	2035/36
Plan	SPS M & E Works ($1m over 5 years from 2015)	2016/17	200000	20 years	2036/37
Plan	SPS M & E Works ($1m over 5 years from 2015)	2017/18	200000	20 years	2037/38
Plan	SPS M & E Works ($1m over 5 years from 2015)	2018/19	200000	20 years	2038/39
Plan	SPS M & E Works ($1m over 5 years from 2015)	2019/20	200000	20 years	2039/40
2306	#1 Sewer Pump Station 2 x 25 KW 20 - structure	1979/80	206150	70 yrs	2049/50
2297	Rising Sewer Mains 1 2 2A	30/06/1981	1240000	70 yrs	2050/51
2307	#2A Sewer P/S - structure	1980/81	347200	70 yrs	2050/51
2308	#3Sewer P/S - structure	1980/81	217000	70 yrs	2050/51
2309	#4 Sewer P/S - structure	1980/81	434000	70 yrs	2050/51
			2238200		
Plan	SPS M & E Works ($1m over 5 years from 2015)	2035/36	200000	20 years	2055/56
Plan	SPS M & E Works ($1m over 5 years from 2015)	2036/37	200000	20 years	2056/57
2310	#5Sewer P/S - structure	1986/87	567268	70 yrs	2056/57
			767268		
Plan	SPS M & E Works ($1m over 5 years from 2015)	2037/38	200000	20 years	2057/58

NPV of Renewals	$839,337
PV of new ETs	-530
ETs as at 30 June 2007	2954
Reduction Amount per ET	**-$241**

Attachment E – Preparation, Review and Administration of Jindabyne Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$60485 + \$49000}{1002 \times 2}$$

= $55 per ET for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on Jindabyne's proportion of Water & Sewer ETs (63% of $27,000 = $17010) plus external ($17000) and internal costs of 2005 study ($6000), plus proportion of cost of current study (63% of $10000 for W & S asset revaluation plus 63% for Jindabyne s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.63 x 10000 + 0.63 x 0.75 x 30000 = $20,475). Total for past W & S studies is therefore = $60,485

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $1000/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $20500 each based on 2008 study cost = $49000

N = Estimated number of Equivalent Tenements created for Jindabyne Catchment over twenty years = 1002

APPENDIX 1 – DSP 2

Development Servicing Plan for East Jindabyne Catchment Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the East Jindabyne area served by Snowy River Shire Council. These development areas are covered together in this DSP because some assets are shared.

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

The areas covered by this DSP are shown on the East Jindabyne Catchment Map – See Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the areas covered by this DSP have been calculated as follows:

	Developer charges East Jindabyne ($ per ET)
Water Supply	$4003
Sewerage	$8550

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the East Jindabyne development area served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.2 for East Jindabyne Water & Sewer
DSP Area	The areas covered by this DSP are shown on the East Jindabyne Catchment Map – See Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by Jindabyne sewerage treatment works plus associated works in the East Jindabyne catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREAS COVERED BY THIS DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	263	
2011/12	288	25
2016/17	313	50
2021/22	318	55
2026/27	323	60

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the East Jindabyne catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the East Jindabyne catchment maps (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

Jindabyne Sewerage Treatment Works serves the Jindabyne, East Jindabyne, Alpine Sands/Willow Bay and Tyrolean Village catchments. Costs have been shared between these catchments in proportion to the Equivalent Tenements in each catchment.

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on targeting the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration ($ per ET) See Attachment E	Calculated Developer Charge ($ per ET)
East Jindabyne Water	**$4243**	**$345**	**$105**	**$4003**
Jindabyne Sewerage Treatment Plant	$3074	$306	-	$2768
East Jindabyne Sewerage Catchment	$6265	$587	$105	$5782
Sewer – total for East Jindabyne	**$9339**	**$894**	**$105**	**$8550**

Charges for different types of development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	**Year Commissioned**	**Effective year of commissioning for ROI[1]**	**Capital Cost**	**Capacity[2] (ETs)**	**Capital Cost per ET**	**Year when Capacity is Taken up**	**Take-Up Period (years)**	**Return on investment Factor**	**Capital Charge per ET**
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

In calculating East Jindabyne Capital Charges there were two components, (1) the capital charges for the Jindabyne Sewerage Treatment Works which is shared with Jindabyne and Tyrolean Village, and (2) the capital charges for distribution works in the East Jindabyne catchment. Both components are shown in Attachment B.

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET. The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D (includes for Jindabyne Sewerage Treatment Works and East Jindabyne Sewerage Distribution)

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Alpine Sands/Willow Bay Water and Sewer

- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for different types of development

Type of Dwelling/ Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for East Jindabyne Water @ $4003 per ET	Contribution Rate for East Jindabyne Sewer @ $8550 per ET
Subdivision	lot	1	$4003	$8550
Dwellings - 1 bedroom	bedroom	0.57	$2282	$4874
Dwellings - 2 bedrooms	2 bedrooms	0.71	$2842	$6071
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$4003	$8550
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra b/r > 4	$4003 + $1161 per b/r > 4	$8550 + $2480 per b/r >4
Lodges & motels	room	0.29	$1161	$2480
Child Care Centres	per 20 children > 20	1	$4003	$8550
Educational Establishments	20 day students	1	$4003	$8550
	6 boarders	1	$4003	$8550
Camping Grounds	site	0.29	$1161	$2480
Tourism facilities	per motel type room and/or impact of large rooms or significant day visitors	0.29 per motel room or subject to individual assessment if significant visitors/ large rooms	$1161 or individual assessment	$2480 or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$400	$855
Commercial - retail	100m^2 of floor space	0.1	$400	$855
Commercial - restaurants	100m^2 of floor space	0.8	$3202	$6840
Industrial - light industry	lot	1	$4003	$8550
Industrial - heavy industry	Dependent on impact	individual assessment	individual assessment	individual assessment

Attachment A – Calculation of the Capital Charge – East Jindabyne Water

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	**Pre-1996 Works**									
2135	2 x 0.17ML Reservoirs - EJ share	30/06/1983	1995/96	52377	323	162.2	2026/27	32	1.33	216
2134	Kunama Reservoir - 2.5ML - EJ share	30/06/1992	1995/96	265978	323	823.5	2026/27	32	1.33	1098
2167	Rising Main - EJ share	30/06/1992	1995/96	180842	323	559.9	2026/27	32	1.33	746
2150	Intake 3 X - East Jindabyne Share	30/06/1992	1995/96	335734	323	1039.4	2026/27	32	1.33	1386
	Post-1996 Works									
2195	Mains Delivery - EJ share	30/06/1998	1997/98	8141	323	25.2	2026/27	30	2.26	57
2205	PH Correction Scheme - EJ Share	30/06/1999	1998/99	85848	323	265.8	2026/27	29	2.21	587
2220	PH Correction Scheme - EJ Share	30/06/2000	1999/2000	5385	323	16.7	2026/27	28	2.16	36
2234	Control Equipment/Telemetry	30/06/2001	2000/2001	3170	323	9.8	2026/27	27	2.11	21
2203	Subsidised Scheme Cnl - East Jind share	30/06/1999	1998/99	14152	323	43.8	2026/27	29	2.21	97
	Total for East Jindabyne									**4243**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: East Jind, Will Bay/Alpine Sands & Tyrolean Village overall Capacity Estimates have been based on peak demand of 3kL/ET as per DLWC Guidelines & total reservoir capacity 3.44 ML based on 2 x 0.17ML in 1983, 2.5ML Kunama Reservoir in 1992, 0.6ML Willow Bay High Zone in 2006/07. Therefore 3.44 ML = 1147 ET. However, costs have been proportioned to excludeTyrolean Village & WB.

Note 3: Assumes 562 ET (for 263 for East Jindabyne, 116 for Willow Bay & 183 for Tyrolean Village) as at 30 June 2007 and 915 at June 2027 (323 for EJ, 341 for WB, 251 for TV) However capacity is 1147 - therefore at 2026/27 the proportion of take-up is 915/1147 = 0.80. Hence the capital cost is factored by 0.80

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment B – Calculation of the Capital Charge – East Jindabyne Sewer

B.1 – Jindabyne Sewerage Treatment Works (shared with Jindabyne, Alpine Sans/Willow Bay & Tyrolean Village catchments) Capital charge

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [2]	Take-Up Period (years)	Return on investment Factor [3]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	Pre-1996 Works									
2276	Treatment Works Twin 4000EP Bathurst Boxes	1980/81	1995/96	$2,289,350	4667	490.5	2023/24	29	1.47	720
2277	Treatment Works Siteworks 8000EP	1980/81	1995/96	$449,500	4667	96.3	2023/24	29	1.47	141
2278	Prelim Treatment	1980/81	1995/96	$868,000	4667	186.0	2023/24	29	1.47	273
2279	Treatment Lagoons stage 1	1980/81	1995/96	$381,300	4667	81.7	2023/24	29	1.47	120
2280	Treatment Lagoons stage 2 & road	1988/89	1995/96	$896,402	4667	192.1	2023/24	29	1.47	282
2281	Sewerage Treatment - chemical	1988/89	1995/96	$194,733	4667	41.7	2023/24	29	1.47	61
2282	Building Concrete works PE	1988/89	1995/96	$424,700	4667	91.0	2023/24	29	1.47	134
	Post-1996 Works									
2350	Treatment Works	2001/02	2001/02	16587	4667	3.6	2023/24	23	1.91	7
2329	Jindabyne Golf Course Effluent study	1999/2000	1999/2000	89813	4667	19.2	2023/24	25	2.00	39
	Future Works									
Plan	Jindabyne STW. Augmentation Concept Study	2008/09	2008/09	$100,000	4667	21.4	2023/24	16	1.58	34
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2009/10	2009/10	$1,000,000	4667	214.3	2023/24	15	1.54	330
Plan	Jindabyne STW. Augmentation	2012/13	2012/13	$3,000,000	4667	642.8	2023/24	13	1.45	934
	Total	**Capital Charge per ET for Jindabyne, East Jindabyne & Tyrolean Village for Jindabyne STW**								**3074**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24

Note 3: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

B.2 – East Jindabyne Sewerage Distribution Works Capital Charge

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost[2] (2007/08 $)	Capacity[3] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	**Pre-1996 Works for East Jindabyne**									
2301	#1 Sewer P/S 28.7m Head	30/06/1992	1995/96	$351,602	320	1098.8	2023/24	29	1.47	1612
2302	#2 Sewer P/S 27m Head	30/06/1992	1995/96	$229,454	320	717.0	2023/24	29	1.47	1052
2303	#3 Sewer P/S 44.6m Head	30/06/1992	1995/96	$208,971	320	653.0	2023/24	29	1.47	958
2304	#4 Sewer P/S 42.3m Head - EJ Proportion	30/06/1992	1995/96	$46,830	320	146.3	2023/24	29	1.47	215
2305	#5 Sewer P/S 42.8m Head - EJ Proportion	30/06/1992	1995/96	$46,871	320	146.5	2023/24	29	1.47	215
2286	Sewer Mains UPVC - EJ Proportion	30/06/1993	1995/96	$482,494	320	1507.8	2023/24	29	1.47	2212
	Total for East Jindabyne									**6265**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: The Capital costs for pre-1996 workshave been factored by 0.50 to reflect the 50% grant subsidy for the upgrade

Note 3: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Water Reduction Amount for East Jindabyne Catchment

PV of New ETs for East Jind (ie Growth of 3 per yr over 20 yrs @ 7% discount) -32

Relevant Assets to be renewed in next 50 years for East Jindabyne:

Asset No.	Description	Year built	Meera Renewal Cost	Average Life of Asset	Year of Replacement
Plan Renewal	Refurbishment of Lime Dosing Plant - EJ share	1998/99	2,733	25	2008/09
Plan Renewal	Refurbishment of Lime Dosing Plant - EJ share	30/06/1992	9,110	25	2011/12
Plan Renewal	Intake PS M & E Works - EJ Share	1998/99	91,100	25	2016/17
2135	2 x 0.17ML Reservoirs - EJ share	30/06/1983	7857	Roof -40yr (15% cost), Structure-100yr	2022/23
2234	Control Equipment/Telemetry	30/06/2001	3170	25 yrs	2025/26
2205	PH Correction Scheme - E Jind share	30/06/1999	85848	30 yrs	2028/29
2220	Ph Correction Scheme - E Jind share	30/06/2000	5385	30 yrs	2029/30
2134	Kunama Reservoir - 2.5ML - E Jind Share	30/06/1992	39897	Roof -40yr (15% cost)	2031/32
Plan Renewal	Intake PS M & E Works - EJ Share	2016/17	91,100	25	2041/42

NPV of East Jindabyne Renewals	$101,787
PV of new ETs for East Jindabyne	-32
ETs as at 30 June 2007	263
Reduction Amount per ET for East Jindabyne	**$345**

Attachment D – Calculation of Sewer Reduction Amount for East Jindabyne Catchment

D.1 - Jindabyne Sewerage Treatment Works (shared with Jindabyne and Tyrolean Village catchments)

PV of New ETs for Jindabyne, E Jindabyne, Willow Bay & Tyrolean Village -686
(ie Growth of 67.75 per yr over 20 yrs @ 7% discount)

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	**Description**				
		Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	30/06/2010	1000000	20 yrs	2029/30
2276	Treatment Works Twin 4000EP	30/06/1981	2289350	50 yrs	2030/31
2278	Prelim Treatment	30/06/1981	868000	50 yrs	2030/31
2279	Treatment Lagoons stage 1	30/06/1981	381300	50 yrs	2030/31
2277	Treatment Works Siteworks 8000EP	30/06/1981	449500	50 yrs	2030/31
			3988150		
2350	Treatment Lagoons stage 2 & road	30/06/1989	896402	50 yrs	2038/39
2282	Building Concrete works PE	30/06/1989	424700	50 yrs	2038/39
			1321102		
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2029/30	1000000	20 yrs	2049/50

NPV of Renewals	$1,287,525
PV of new ETs	-686
ETs Jind, E Jind, Willow Bay & Tyrolean Village as at 30 June 2007	3516
Reduction Amount per ET	**-$306.41**

D.2 – East Jindabyne Catchment Sewerage Distribution Works

PV of New ETs for East Jind (ie Average Growth of 3 per yr over 20 yrs @ 7% discount) -32

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	1992-1994	70600	20 yrs approx	2019/20
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	1992-1994	70600	20 yrs approx	2020/21
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	1992-1994	70600	20 yrs approx	2021/22
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	1992-1994	70600	20 yrs approx	2022/23
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	1992-1994	70600	20 yrs approx	2023/24
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	2019/20	70600	20 yrs approx	2039/40
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	2020/21	70600	20 yrs approx	2040/41
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	2021/22	70600	20 yrs approx	2041/42
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	2022/23	70600	20 yrs approx	2042/43
SRSC Plan based on $1m from 2019	East Jindabyne proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (35.30%)	2023/24	70600	20 yrs approx	2043/44

NPV of Renewals for East Jindabyne	$173,067
ETs as at June 30 2007 for East Jindabyne	263
PV of New ETs for East Jind (ie Growth of 3 per yr over 20 yrs @ 7% discount)	-32
Reduction Amount per ET for East Jindabyne	-$587

Attachment E – Preparation, Review and Administration of East Jindabyne Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$7285 + 5316}{60 \times 2}$$

= $105 per ET for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on East Jindabyne's proportion of Water & Sewer ETs (5.1% of $27,000 = $1377) plus external ($3000) and internal costs of 2005 study ($1250), plus proportion of cost of current study (5.1% of $10000 for W & S asset revaluation plus 5.1% for East Jindabyne s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.051 x 10000 + 0.051 x 0.75 x 30000 = $1658). Total for past W & S studies is therefore = $7285

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $250/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $1658 each based on 2008 study cost = $5316

N = Estimated number of Equivalent Tenements created for East Jindabyne Catchment over twenty years = 60

APPENDIX 1 – DSP 3

Development Servicing Plan for Tyrolean Village Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Tyrolean Village development areas served by Snowy River Shire Council.

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

The area covered by this DSP is shown on the Tyrolean Village Catchment Map – See maps in the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the area covered by this DSP have been calculated as follows:

	Developer charges ($ per ET)
Water Supply For Developments in Low Zone	$5765
Water Supply For Developments in High Zone	$15624
Sewerage for Developments not using SPS6	$6044
Sewerage for Developments using SPS6	$11895

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Tyrolean Village development areas served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.3 for Tyrolean Village Water & Sewer
DSP Area	The area covered by this DSP is shown on the Tyrolean Village Catchment Map – See map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by Jindabyne sewerage treatment works plus associated works in the Tyrolean Village catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREA COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	183	
2011/12	200	17
2016/17	217	34
2021/22	234	51
2026/27	251	68

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the Tyrolean Village catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Tyrolean Village catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

Jindabyne Sewerage Treatment Works serves the Jindabyne, East Jindabyne, Alpine Sands/Willow Bay and Tyrolean Village catchments. Costs have been shared between these catchments in proportion to the Equivalent Tenements in each catchment.

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on targeting the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration (see Attachment E)	Calculated Developer Charge ($ per ET)
Water Supply – low Zone	**$6120**	**$421**	**$67**	**$5765**
Water Supply – high Zone	**$15979**	**421**	**$67**	**$15624**
Sewer – Jindabyne Sewerage Treatment Works	$3074	$306	-	$2768
Sewer – Tyrolean Village Catchment Works for developments not using SPS 6	$3823	$614	$67	$3276
Sewer - Total for developments not using SPS6	**$6897**	**$920**	**$67**	**$6044**
Sewer – Tyrolean Village Catchment Works for developments using SPS 6	$9674	$614	$67	$9127
Sewer - Total for developments using SPS 6	**$12748**	**$920**	**$67**	**$11895**

Charges for different types of development are shown in section 12.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost	Capacity[2] (ETs)	Capital Cost per ET	Year when Capacity is Taken up	Take-Up Period (years)	Return on investment Factor	Capital Charge per ET
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

In calculating Tyrolean Village Sewer Capital Charge there were two components, (1) the capital charge for the Jindabyne Sewerage Treatment Works which is shared with East Jindabyne, Alpine Sands/Willow Bay and Jindabyne and (2) the capital charge for distribution works in the Tyrolean Village catchment. Both Components are shown in Attachment B.

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET. The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D (both Jindabyne Sewerage Treatment Works and Tyrolean Village Sewerage Distribution)

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Alpine Sands/Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for different types of development

Type of Dwelling/Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for Water – low zone @ $5765 per ET	Contribution Rate for Water – high zone @ $15624 per ET	Contribution Rate for Sewer not using SPS6 @ $6044 per ET	Contribution Rate for Sewer using SPS6 @ $11895 per ET
Subdivision	lot	1	$5765	$15624	$6044	$11895
Dwellings - 1 bedroom	bedroom	0.57	$3286	$8906	$3445	$6780
Dwellings - 2 bedrooms	2 bedrooms	0.71	$4093	$11093	$4291	$8445
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$5765	$15624	$6044	$11895
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra bedroom > 4	$5765 + $1672 per b/r > 4	$15624 + $4531 per b/r >4	$6044 + $1753 per b/r >4	$11895 + $3450 per b/r >4
Lodges & motels	room	0.29	$1672	$4531	$1753	$3450
Child Care Centres	per 20 children greater than 20	1	$5765	$15624	$6044	$11895
Educational Establishments	20 day students	1	$5765	$15624	$6044	$11895
	6 boarders	1	$5765	$15624	$6044	$11895
Camping Grounds	site	0.29	$1672	$4531	$1753	$3450
Tourism facilities	per motel type room and/or impact of large rooms or day visitors	0.29 per room or subject to individual assessment if large rooms or significant day visitors	$1672 per room or individual assessment	$4531 or individual assessment	$1753 or individual assessment	$3450 or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$577	$1562	$604	$1190
Commercial - retail	100m^2 of floor space	0.1	$577	$1562	$604	$1190
Commercial - restaurants	100m^2 of floor space	0.8	$4612	$12499	$4835	$9516
Industrial - light industry	lot	1	$5765	$15624	$6044	$11895
Industrial - heavy industry	Dependent on impact	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment

Attachment A – Calculation of the Capital Charge – Tyrolean Village Water

Asset No.	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up[3]	Take-Up Period (years)	Return on investment Factor[4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
	Pre-1996 Works									
2135	2 x 0.17ML Reservoirs - Tyrolean Share	30/06/1983	1995/96	50875	251	202.7	2026/27	32	1.52	309
2167	Rising Main - Tyrolean Share	30/06/1986	1995/96	140524	251	559.9	2026/27	32	1.52	853
2150	Intake 3 X - Tyrolean Share	30/06/1992	1995/96	260922	251	1039.5	2026/27	32	1.52	1584
2134	Kunama Reservoir - 2.5ML - Tyrolean share	30/06/1992	1995/96	206680	251	823.4	2026/27	32	1.52	1255
2169	Trunk main	30/06/1993	1995/96	106764	251	425.4	2026/27	32	1.52	648
2170	Reticulation	30/06/1993	1995/96	94122	251	375.0	2026/27	32	1.52	571
	Post-1996 Works									
2205	PH Correction Scheme -Tyrolean Share	30/06/1999	1998/99	83398	251	332.3	2026/27	29	2.21	733
2220	Ph Correction Scheme - Tyrolean Share	30/06/2000	1999/2000	5231	251	20.8	2026/27	28	2.16	45
2203	Subsidised Scheme CN - TV share	30/06/1999	1998/99	13748	251	54.8	2026/27	29	2.21	121
	Total for Tyrolean Village - low zone developments (not needing high level infrastructure)									**6120**
	Alpine Sands/Willow Bay/Tyrolean - using High Level Reservoir									
Plan	Willow Bay High Level Reservoir & Trunk Water Mains (Tyrolean Share)	2009/10	2009/10	$158,212	22	7191.4	2019/20	11	1.37	9859
	Total for Tyrolean Village - using high level water									**15979**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2a: East Jind, Will Bay/Alpine Sands & Tyrolean Village overall Capacity Estimates have been based on peak demand of 3kL/ET as per DLWC Guidelinesguidelines
& total reservoir capacity 3.44 ML based on 2 x 0.17ML in 1983, 2.5ML Kunama Reservoir in 1992, 0.6ML Willow Bay High Zone in 2006/07 (see note 2b below).
Therefore 3.44 ML = 1147 ET. However, costs have been proportioned to exclude EJ & WB.
Note 2b: 0.6ML Willow Bay High Zone Reservoir services Alpine Sands/Willow Bay and Tyrolean Village. As per Link Management memos 17 of 94 lots serviced by the high
level water reservoir & system will be in Tyrolean Village & balance in Willow Bay, so costs for Tyrolean Village High Level Reservoir & Mains have been factored by 17/94 = 0.181
Assuming there will be some multiple occupancy then 17 Tyrolean Village High Zone lots converts to 17 x 1.3 ET (Link estimate) = 22 ET.

Note 3: Assumes 562 ET (for 263 for East Jindabyne, 116 for Willow Bay & 183 for Tyrolean Village) as at 30 June 2007 and 915 at June 2027 (323 for EJ, 341 for WB, 251 for TV)
However capacity is 1147 - therefore at 2026/27 the proportion of take-up is 915/1147 = 0.80. Hence the capital cost is factored by 0.80

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Attachment B – Calculation of the Capital Charge – Tyrolean Village Sewer

B.1 – Jindabyne Sewerage Treatment Works (shared with Jindabyne, East Jindabyne and Willow Bay catchments) Capital charge

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [2]	Take-Up Period (years)	Return on investment Factor [3]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	Pre-1996 Works									
2276	Treatment Works Twin 4000EP Bathurst Boxes	1980/81	1995/96	$2,289,350	4667	490.5	2023/24	29	1.47	720
2277	Treatment Works Siteworks 8000EP	1980/81	1995/96	$449,500	4667	96.3	2023/24	29	1.47	141
2278	Prelim Treatment	1980/81	1995/96	$868,000	4667	186.0	2023/24	29	1.47	273
2279	Treatment Lagoons stage 1	1980/81	1995/96	$381,300	4667	81.7	2023/24	29	1.47	120
2280	Treatment Lagoons stage 2 & road	1988/89	1995/96	$896,402	4667	192.1	2023/24	29	1.47	282
2281	Sewerage Treatment - chemical	1988/89	1995/96	$194,733	4667	41.7	2023/24	29	1.47	61
2282	Building Concrete works PE	1988/89	1995/96	$424,700	4667	91.0	2023/24	29	1.47	134
	Post-1996 Works									
2350	Treatment Works	2001/02	2001/02	16587	4667	3.6	2023/24	23	1.91	7
2329	Jindabyne Golf Course Effluent study	1999/2000	1999/2000	89813	4667	19.2	2023/24	25	2.00	39
	Future Works									
Plan	Jindabyne STW. Augmentation Concept Study	2008/09	2008/09	$100,000	4667	21.4	2023/24	16	1.58	34
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2009/10	2009/10	$1,000,000	4667	214.3	2023/24	15	1.54	330
Plan	Jindabyne STW. Augmentation	2012/13	2012/13	$3,000,000	4667	642.8	2023/24	13	1.45	934
	Total	**Capital Charge per ET for Jindabyne, East Jindabyne & Tyrolean Village for Jindabyne STW**								**3074**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24

Note 3: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

B.2 – Tyrolean Village Catchment Sewerage Distribution Works Capital Charge

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost[2] (2007/08 $)	Capacity[3] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	**Pre-1996 Works**									
2287	Sewer Mains UPVC	30/06/1993	1995/96	$166,404	242	687.6	2023/24	29	1.47	1009
2298	Sewer Pump Station	30/06/1994	1995/96	$155,000	242	640.5	2023/24	29	1.47	940
2288	Rainbow Beach Sewer Mains UPVC	30/06/1994	1995/96	$158,306	242	654.2	2023/24	29	1.47	960
2299	Rainbow Beach Sewer P/S	30/06/1994	1995/96	$104,009	242	429.8	2023/24	29	1.47	631
2286	Sewer Mains UPVC - Tyrolean Proportion	30/06/1993	1995/96	$46,871	242	193.7	2023/24	29	1.47	284
				Total for Tyrolean Village developments not using SPS 6						**3823**
	Post-1996 Works for Tyrolean Village									
Plan	Construct EJSPS # 6 & RM based on Link Management Memo - includes total cost for Willow Bay and Tyrolean Village and total ET in the calculation	2006/07	2006/07	$731,186	209	3498.5	2023/24	18	1.67	5851
				Total for Tyrolean Village developments using SPS 6						**9674**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: The Capital costs for pre-1996 works have been taken at 50% of full value based on 50% grant subsidy when built.

Note 3: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24
SPS 6 has been estimated to have a capacity to serve 209 ET (Link memo to SRSC) covering both Willow Bay and Tyrolean Village

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Reduction Amount for Tyrolean Village Water

PV of New ETs (ie Growth of 3.4 per yr over 20 yrs @ 7% discount) -36

Assume: Renewal Expenditure occurs at end of life of asset - uses NSW Ref Rates Manual asset lives

Relevant Assets to be renewed or upgraded in next 50 years:

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan Renewal	Refurbishment of Lime Dosing Plant - TV share	1998/99	2,124	25	2008/09
Plan Renewal	Refurbishment of Lime Dosing Plant - TV share	30/06/1992	7,080	25	2011/12
Plan Renewal	Intake PS M & E Works - TV Share	1998/99	70,800	25	2016/17
2135	2 x 0.17ML Reservoirs -Tyrolean share	30/06/1983	7631	Roof -40yr (15% cost), Structure-100yr	2022/23
2205	PH Correction Scheme -Tyrolean Share	30/06/1999	83398	25 yrs	2023/24
2220	Ph Correction Scheme - Tyrolean Share	30/06/2000	5231	25 yrs	2024/25
2134	Kunama Reservoir - 2.5ML - Tyrolean share	30/06/1992	31002	Roof -40yr (15% cost)	2031/32
Plan Renewal	Intake PS M & E Works - EJ Share	2016/17	70,800	25	2041/42

NPV of Renewals	$92,273
ETs as at 30 June 2007	183
PV of new ETs	-36
Reduction Amount per ET	**-$421.30**

Attachment D – Calculation of Reduction Amount for Tyrolean Village Sewer

D.1 - Jindabyne Sewerage Treatment Works (shared with Jindabyne, East Jindabyne and Alpine Sands catchments)

Assume: Renewal Expenditure occurs at end of life of asset - uses NSW Ref Rates Manual asset lives

Relevant Assets to be renewed or upgraded in next 50 years:

Asset No.	Description	Year built	MEERA Renewal Cost	Life of Asset	Year of Replacement

Attachment D – Calculation of Sewer Reduction Amount for Tyrolean Village Catchment

D.1 - Jindabyne Sewerage Treatment Works (shared with Jindabyne and East Jindabyne catchments)

PV of New ETs for Jindabyne, E Jindabyne, Willow Bay & Tyrolean Village -686
(ie Growth of 67.75 per yr over 20 yrs @ 7% discount)

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description				
		Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	30/06/2010	1000000	20 yrs	2029/30
2276	Treatment Works Twin 4000EP	30/06/1981	2289350	50 yrs	2030/31
2278	Prelim Treatment	30/06/1981	868000	50 yrs	2030/31
2279	Treatment Lagoons stage 1	30/06/1981	381300	50 yrs	2030/31
2277	Treatment Works Siteworks 8000EP	30/06/1981	449500	50 yrs	2030/31
			3988150		
2350	Treatment Lagoons stage 2 & road	30/06/1989	896402	50 yrs	2038/39
2282	Building Concrete works PE	30/06/1989	424700	50 yrs	2038/39
			1321102		
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2029/30	1000000	20 yrs	2049/50

NPV of Renewals $1,287,525

PV of new ETs -686
ETs Jind, E Jind, Willow Bay & Tyrolean Village as at 30 June 2007 3516
Reduction Amount per ET **-$306.41**

D.2 – Tyrolean Village Catchment Sewerage Distribution Works

PV of New ETs (ie Growth of 3.4 per yr over 20 yrs @ 7% discount) -36

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
SRSC Plan based on $1m expenditure from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	1992-1994	54860	20 yrs approx	2019/20
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	1992-1994	54860	20 yrs approx	2020/21
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	1992-1994	54860	20 yrs approx	2021/22
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	1992-1994	54860	20 yrs approx	2022/23
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	1992-1994	54860	20 yrs approx	2023/24
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	2019/20	54860	20 yrs approx	2039/40
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	2020/21	54860	20 yrs approx	2040/41
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	2021/22	54860	20 yrs approx	2041/42
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	2022/23	54860	20 yrs approx	2042/43
SRSC Plan based on $1m from 2019	Tyrolean Village proportion of Pump Station Renewals for East Jindabyne, Willow Bay & Tyrolean System (27.43%)	2023/24	54860	20 yrs approx	2043/44

NPV of Renewals	$134,482
PV of new ETs	-36
ETs as at 30 June 2007	183
Reduction Amount per ET	**-$614.02**

Attachment E – Preparation, Review and Administration of Tyrolean Village Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$4880 + \$4200}{68 \times 2}$$

= $67 per ET each for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on Tyrolean Villages's proportion of Water & Sewer ETs (4.0% of $27,000 = $1080) plus external ($2000) and internal costs of 2005 study ($500), plus proportion of cost of current study (4.0% of $10000 for W & S asset revaluation plus 4.0% for Tyrolean Village s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.04 x 10000 + 0.04 x 0.75 x 30000 = $1300). Total for past W & S studies is therefore = $4880

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $200/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $1300 each based on 2008 study cost = $4200

N = Estimated number of Equivalent Tenements created for Tyrolean Village Catchment over twenty years = 68

APPENDIX 1 – DSP 4

Development Servicing Plan for Berridale Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Berridale development areas served by Snowy River Shire Council.

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

The area covered by this DSP is shown on the Berridale Catchment Map – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the area covered by this DSP have been calculated as follows:

	Developer charges ($ per ET)
Water Supply	$7061 after 42.82% discount
Sewerage	$5984 after 29.15% discount

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Berridale development area served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.4 for Berridale Water & Sewer
DSP Area	The area covered by this DSP is shown on the Berridale Catchment Map – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by sewerage treatment works plus associated works in the Berridale catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2005 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREA COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	772	
2011/12	794	22
2016/17	815	43
2021/22	837	65
2026/27	858	86

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the Berridale catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Berridale catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on targeting the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.

- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration ($ per ET) See Attachment E	Calculated Developer Charge ($ per ET)	Charge after applying discounts ($ per ET)
Water Supply	$13116	$891	$124	$12349	$7061 after 42.82% discount
Sewerage	$10,786	$2,464	$124	$8446	$5984 after 29.15% discount

Charges for different types of development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	**Year Commissioned**	**Effective year of commissioning for ROI[1]**	**Capital Cost**	**Capacity[2] (ETs)**	**Capital Cost per ET**	**Year when Capacity is Taken up**	**Take-Up Period (years)**	**Return on investment Factor**	**Capital Charge per ET**
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET.

The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Goods Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Alpine Sands/Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for different types of development

Type of Dwelling/Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for Water @ $7061 per ET	Contribution Rate for Sewer @ $5984 per ET
Subdivision	lot	1	$7061	$5984
Dwellings - 1 bedroom	bedroom	0.57	$4025	$3411
Dwellings - 2 bedrooms	2 bedrooms	0.71	$5013	$4249
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$7061	$5984
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra bedroom > 4	$7061 + $2048 per b/r > 4	$5984+ $1735 per b/r >4
Lodges, resorts & motels	room	0.29	$2048	$1735
Child Care Centres	per 20 children greater than 20	1	$7061	$5984
Educational Establishments	20 day students	1	$7061	$5984
	6 boarders	1	$7061	$5984
Camping Grounds	site	0.29	$2048	$1735
Tourism facilities	room and/or impact of day visitors	0.29 per room or subject to individual assessment if significant numbers of day visitors	$2048 per room or individual assessment	$1735 or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$706	$598
Commercial - retail	100m^2 of floor space	0.1	$706	$598
Commercial - restaurants	100m^2 of floor space	0.8	$5649	$4787
Industrial - light industry	lot	1	$7061	$5984
Industrial - heavy industry	Dependent on impact	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment

Attachment A – Calculation of the Capital Charge – Berridale Water

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	**Pre-1996 Works**									
2126	Reservoir 1.5ML	30/06/1981	1995/96	497193	858	579.5	2026/27	32	1.52	883
2174	Industrial Estate Mains	30/06/1989	1995/96	101946	858	118.8	2026/27	32	1.52	181
2150	Intake 3 X - Berridale Share	30/06/1992	1995/96	1034334	858	1205.5	2026/27	32	1.52	1837
2128	Barneys Range Balance Tank - 0.2 ML	30/06/1992	1995/96	98161	858	114.4	2026/27	32	1.52	174
2151	EJ - Berridale - 2 Boosters	30/06/1992	1995/96	1368981	858	1595.5	2026/27	32	1.52	2431
2175	Trunk Main (East Jindabyne - Berridale)	30/06/1992	1995/96	2796918	858	3259.8	2026/27	32	1.52	4967
2176	Rising Main (East Jind - Berridale)	30/06/1992	1995/96	647032	858	754.1	2026/27	32	1.52	1149
2127	Berridale Reservoirs - Roofs	30/06/1994	1995/96	168084	858	195.9	2026/27	32	1.52	299
	Post-1996 Works									
2180	Minor Works Subsidised Scheme	30/06/1997	1996/97	50700	858	59.1	2026/27	31	2.31	137
2203	Subsidised Scheme CN - Berridale share	30/06/1999	1998/99	43608	858	50.8	2026/27	29	2.21	112
2205	PH Correction Scheme - Berr share	30/06/1999	1998/99	264481	858	308.3	2026/27	29	2.21	680
2220	Ph Correction Scheme - Berr share	30/06/2000	1999/2000	16590	858	19.3	2026/27	28	2.16	42
2229	Minor Works - East Jind pH Control	30/06/2001	2000/01	9252	858	10.8	2026/27	27	2.11	23
2250	Mains Reticulation	10/12/2003	2003/04	70754	858	82.5	2026/27	24	1.96	161
3250	Berridale Water Mains 2006	30/06/2006	2005/06	18412	858	21.5	2026/27	22	1.86	40
Plan	Berridale Chlorination System	2008/09	2008/09	37120	858	43.3	2026/27	19	1.72	74
	Total									**13116**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Capacity Estimates have been calculated as follows. 2.31 ML Reservoir total capacity (based on 0.16Ml, 0.45Ml & 1.5Ml in Berridale plus 0.2 Ml for Barney's Range). As EP for ET in Berridale is about 2.5 based on 1998 land use study (lower than figure of 3 usually in Shire from same study). Use 2.5kl/ET to calculate capacity requirements. (Note: DLWC guidelines uses 3kl/ET where EP/ET averages 3)
Capacity in ETs is therefore 2.31/0.0025= 924 ETs

Note 3: Based on ETs in Berridale being 772 at June 2007 and 86 new ET over 20 years (based on previous 10 years' growth) then 858 ET in June 2027.
If capacity of system is 924 ET then at 2026/27 then 858/924 = 0.928 of capacity is taken up. Therefore adjust capital usage by this factor.
There was a 50% subsidy for Jindabyne to Berridale system but full cost utilised in the MEERA calculations

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment B – Calculation of the Capital Charge – Berridale Sewer

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08) $	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08) $
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	**Pre-1996 Works**									
	No charges included due to age of assets									
	Post-1996 Works									
2314	Subsidised Sewerage Scheme	30/06/1998	1997/98	$197,688	858	230.4	2026/27	30	2.26	521
2315	Subsidised Sewerage Scheme	30/06/1999	1998/99	$12,895	858	15.0	2026/27	29	2.21	33
2348	Upgrade Telemetry System (Sewer 50%)	17/10/2001	2001/02	$6,090	858	7.1	2026/27	26	2.05	15
2346	Treatment Works (M & E)	30/06/2002	2001/02	$9,621	858	11.2	2026/27	26	2.05	23
2349	Sewerage scheme	30/06/2003	2002/03	$10,972	858	12.8	2026/27	25	2.00	26
2352	Telemetry - Sewer (Catchment 14.55%)	3/12/2003	2003/04	$12,950	858	15.1	2026/27	24	1.96	30
2354	Berridale PWD -Coolamatong 80mm sewer	30/06/2004	2003/04	$10,575	858	12.3	2026/27	24	1.96	24
2357	Sewer PWD 2004 STW	30/06/2004	2003/04	$284,350	858	331.4	2026/27	24	1.96	648
2358	Berridale Sewer Scheme	30/06/2005	2004/05	$426,253	858	496.8	2026/27	23	1.91	947
	Future Works									
Plan	Berridale STW Augmentation Pre- Construction	2008/09	2008/09	$1,149,994	858	1340.3	2026/27	19	1.72	2303
Plan	Berridale STW Augmentation Construction	2009/10	2009/10	$3,104,738	858	3618.6	2026/27	19	1.72	6217
	Total									**10786**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.

For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Assumes that new sewer expenditure in 2008/09 will upgrade Berridale Sewer capacity to meet demand till 2026/27

Capital Costs for Planned STW Augmentation are expected to receive 30% government grants but these have not been taken into account

Note 3: With a total of 772 ETs for Berridale at June 2007 then at average 4.3 ET/yr the total ETs becomes 858 at 2026/27.

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)

PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Reduction Amount for Berridale Water

PV of New ETs (ie Growth of 4.3 per yr over 20 yrs @ 7% discount) -45.55

Relevant Assets to be renewed or upgraded in next 50 years:

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan Renewal	Refurbishment of Lime Dosing Plant - Berridale share	1998/99	7,259	25	2008/09
Plan Renewal	Refurbishment of Lime Dosing Plant - Berridale share	30/06/1992	24,195	25	2011/12
Plan Renewals	Pump Replacements	1992	300000	25	2015/16
Plan Renewal	Intake PS M & E Works - Berridale share	1998/99	241,950	25	2016/17
Plan Renewals	Pump Replacements	1992	300000	25	2019/20
2180	Minor Works Subsidised Scheme	30/06/1997	50700	25 yrs	2021/22
2189	Minor Works Subsidised Scheme - PWD	30/06/1998	8677	25 yrs	2022/23
2203	Subsidised Scheme CN - Berridale share	30/06/1999	43608	25 yrs	2023/24
2205	Ph Correction Scheme	30/06/1999	264481	25 yrs	2023/24
			308090		
2220	Ph Correction Scheme	30/06/2000	16590	25 yrs	2024/25
2229	Minor Works - East Jind pH Control	30/06/2001	9252	25 yrs	2025/26
2128	Barneys Range Balance Tank - 0.2 ML	30/06/1992	14724	Roof 15% 40 yrs	2031/32
2127	Berridale Reservoirs - Roofs	30/06/1994	168084	40 yrs	2033/34
Plan	Chlorination System	2008/09	40000	30	2038/39
Plan Renewals	Pump Replacements	2015/16	300000	25	2040/41
Plan Renewal	Intake PS M & E Works - EJ Share	2016/17	241,950	25	2041/42
Plan Renewals	Pump Replacements	2019/20	300000	25	2044/45
2205	Ph Correction Scheme	2023/24	264481	25 yrs	2048/49
2220	Ph Correction Scheme	2024/25	16590	25 yrs	2049/50
2229	Minor Works - East Jind pH Control	2025/26	9252	25 yrs	2050/51

NPV of Renewals	$728,714
PV of new ETs	-46
ETs at 2006/07	772
Total ETs for Calculation	-818
Reduction Amount per ET	-$891

Attachment D – Calculation of Reduction Amount for Berridale Sewer

PV of New ETs (ie Growth of 4.3 per yr over 20 yrs @ 7% discount) -46

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
2285	Sewer Mains AC	30/06/1970	$2,780,224	45 yrs	2014/15
Long term Plan	Treatment works (M & E)	2008/09	$931,421	20 years	2028/29
Long term Plan	Treatment works (M & E)	2028/29	$931,421	20 years	2048/49

NPV of Renewals	$2,014,466
PV of new ETs	-46
ETs as at 30 June 2007	772
Reduction Amount per ET	-$2,464.01

Attachment E – Preparation, Review and Administration of Berridale Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$10652 + \$10600}{86 \times 2}$$

= $124 per ET for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on Berridale's proportion of Water & Sewer ETs (13.7% of $27,000 = $3699) plus external ($2000) and internal costs of 2005 study ($500), plus proportion of cost of current study (13.7% of $10000 for W & S asset revaluation plus 13.7% for Berridale's s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.137x 10000 + 0.137 x 0.75 x 30000 = $4453). Total for past W & S studies is therefore = $10652

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $200/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $4500 each based on 2008 study cost = $10600

N = Estimated number of Equivalent Tenements created for Berridale Catchment over twenty years = 86

APPENDIX 1 – DSP 5

Development Servicing Plan for Kalkite Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Kalkite development areas served by Snowy River Shire Council.

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

The area covered by this DSP is shown on the Kalkite catchment map – see the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the area covered by this DSP have been calculated as follows:

	Developer charges ($ per ET)
Water Supply	$4890
Sewerage	$6333

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Kalkite development areas served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.5 for Kalkite Water & Sewer
DSP Area	The area covered by this DSP is shown on the Kalkite Catchment Map – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by sewerage treatment works plus associated works in the Kalkite catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREA COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	179	
2011/12	192	13
2016/17	204	25
2021/22	217	38
2026/27	229	50

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the Kalkite catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Kalkite catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on providing the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration ($ per ET)	Calculated Developer Charge ($ per ET)
Water Supply	$6408	$1593	$75	$4890
Sewerage	$8766	$2508	$75	$6333

Developer Charges for different types of Development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	**Year Commissioned**	**Effective year of commissioning for ROI[1]**	**Capital Cost**	**Capacity[2] (ETs)**	**Capital Cost per ET**	**Year when Capacity is Taken up**	**Take-Up Period (years)**	**Return on investment Factor**	**Capital Charge per ET**
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET.

The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Data provided by SRSC personnel to calculate equivalent tenements
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial

modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

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- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for Different Types of Development

Type of Dwelling/Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for Water @ $4890 per ET	Contribution Rate for Sewer @ $6333 per ET
Subdivision	lot	1	$4890	$6333
Dwellings - 1 bedroom	bedroom	0.57	$2787	$3610
Dwellings - 2 bedrooms	2 bedrooms	0.71	$3472	$4496
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$4890	$6333
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra bedroom > 4	$4890 + $1418 per b/r > 4	$6333 + $1837 per b/r >4
Lodges, resorts & motels	room	0.29	$1418	$1837
Child Care Centres	per 20 children greater than 20	1	$4890	$6333
Educational Establishments	20 day students	1	$4890	$6333
	6 boarders	1	$4890	$6333
Camping Grounds	site	0.29	$1418	$1837
Tourism facilities	room and/or impact of day visitors	0.29 per room or subject to individual assessment if significant numbers of day visitors	$1418 per room or individual assessment	$1837 or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$489	$633
Commercial - retail	100m^2 of floor space	0.1	$489	$633
Commercial - restaurants	100m^2 of floor space	0.8	$3912	$5066
Industrial - light industry	lot	1	$4890	$6333
Industrial - heavy industry	Dependent on impact	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment

Attachment A – Calculation of the Capital Charge – Kalkite Water

Asset No.	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
	Pre-1996 Works									
2136	2 x 0.34 ML Reservoirs	30/06/1981	1995/96	344862	226	1525.9	2025/26	31	1.50	2296
2177	Water Mains	30/06/1981	1995/96	308063	226	1363.1	2025/26	31	1.50	2051
	Post-1996 Works									
2208	Control Equipment/Telemetry 1999	30/06/1999	1998/99	15094	226	66.8	2025/26	28	2.16	144
2233	Control Equipment/Telemetry	30/06/2001	2000/01	7596	226	33.6	2025/26	26	2.05	69
2241	Chlorination Equipment	31/12/2001	2001/02	33459	226	148.0	2025/26	25	2.00	297
2257	Telemetry	7/06/2004	2003/04	27454	226	121.5	2025/26	23	1.91	232
2266	Pumping Plant	18/05/2004	2003/04	40998	226	181.4	2025/26	23	1.91	346
2265	Reservoirs - roofs	30/06/2004	2003/04	115331	226	510.3	2025/26	23	1.91	973
	Total									**6408**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Capacity Estimates have been based on peak demand of 3kL/ET as per DLWC guidelines (p26) & reservoir capacity 0.68 ML
This could give up to 226 ETs.

Note 3: Based on 179 ET as at 30 June 2007 and a growth of 2.5/yr then at 226 capacity the capacity is reached in 2025/26

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment B – Calculation of the Capital Charge – Kalkite Sewer

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost[2] (2007/08 $)	Capacity[3] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	**Pre-1996 Works**									
2275	Treatment Works Structure and M & E	30/06/1980	1995/96	639550	229	2793	2026/27	22	1.34	3743
2284	Sewer Mains AC	30/06/1980	1995/96	609587	229	2662	2026/27	22	1.34	3568
2300	3 small sewer pump stations	30/06/1980	1995/96	164151	229	717	2026/27	22	1.34	961
	Post-1996 Works									
2339	Telemetry	30/06/2000	1999/2000	$9,407	229	41.1	2026/27	28	2.16	89
2340	Sewerage Pumping Station M & E	30/06/2001	2000/01	$40,962	229	178.9	2026/27	27	2.11	377
2352	Telemetry - Sewer (Catchment 3.88%)	30/06/2004	2003/04	$3,453	229	15.1	2026/27	24	1.96	29
	Future Works									
	Total									**8766**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Based on capital costs, treatment works are assumed to have a capacity of 1000 EP (333 ET) based on capital cost.
With a total of 179 ETs for Kalkite at June 2007 then at 2/yr till 2026/27 the total ETs are 229
Capital is adjusted by a factor of 229/333 to take into account unused capacity

Note 3: Capacity taken to be 229 after the capital adjustment described in note 2.

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Reduction Amount for Kalkite Water

PV of New ETs (ie Growth of 2.5 per yr over 20 yrs @ 7% discount) -26

Assume: Renewal Expenditure occurs at end of life of asset - uses NSW Ref Rates Manual asset lives

Relevant Assets to be renewed or upgraded in next 50 years:

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
Plan Renewal	Intake draft corrosion Protection	30/06/1981	20000	30 yrs	2008/09
Plan Renewal	Intake Pump Station M & E Works	30/06/1981	300000	30 yrs	2011/12
2208	Control Equipment/Telemetry 1999	30/06/1999	15094	25 yrs	2023/24
2233	Control Equipment/Telemetry	30/06/2001	7596	25 yrs	2025/26
Plan Renewal	Water Treatment Units	2000/01	100000	30 yrs	2028/29
2257	Telemetry	7/06/2004	27454	25 yrs	2028/29
			127454		
Plan Renewal	Intake draft corrosion Protection	2008/09	20000	30	2038/39
Plan Renewal	Intake Pump Station M & E Works	2011/12	300000	30 yrs	2041/42
1157	Reservoirs roofs	30/06/2004	115331	Roof 40 yrs	2043/44
2208	Control Equipment/Telemetry 1999	2023/24	15094	25 yrs	2048/49
2233	Control Equipment/Telemetry	2025/26	7596	25 yrs	2050/51

NPV of Renewals	$327,249
PV of new ETs	-26
ETs as at 30 June 2007	179
Reduction Amount per ET	-$1,593

Attachment D – Calculation of Reduction Amount for Kalkite Sewer

PV of New ETs (ie Growth of 2.5 per yr over 20 yrs @ 7% discount) -26

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost ($2007/08)	Life of Asset	Year of Replacement
SRSC Plan	Treatment Works & Pump Stations M & E	30/06/1980	100000	20 years	2010/11
SRSC Plan	Treatment Works & Pump Stations M & E	30/06/1980	100000	20 years	2011/12
2339	Telemetry	30/06/2000	9407	20 yrs	2019/20
2352	Telemetry - Sewer (Catchment 3.88%)	3/12/2003	3453	20 yrs	2023/24
2284	Sewer Mains AC	30/06/1980	609587	45 yrs	2024/25
2275	Treatment Works - structure only	30/06/1980	447685	50 years	2029/30
SRSC Plan	Treatment Works & Pump Stations M & E	2010/11	100000	20 years	2030/31
SRSC Plan	Treatment Works & Pump Stations M & E	2011/12	100000	20 years	2031/32
2300	3 small sewer pump stations - structure	30/06/1980	114906	70 years	2049/50
SRSC Plan	Treatment Works & Pump Stations M & E	2030/31	100000	20 years	2050/51
SRSC Plan	Treatment Works & Pump Stations M & E	2031/32	100000	20 years	2051/52

NPV of Renewals	$515,351
PV of new ETs	-26
ET as at 30 June 2007	179
Reduction Amount per ET	-$2,508

Attachment E – Preparation, Review and Administration of Kalkite Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$4202 + 3300}{50 \times 2}$$

= $75 per ET for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on Kalkite's proportion of Water & Sewer ETs (3.7% of $27,000 = $999) plus external ($1800) and internal costs of 2005 study ($200), plus proportion of cost of current study (3.7% of $10000 for W & S asset revaluation plus 3.7% for Kalkite's s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.037x 10000 + 0.037 x 0.75 x 30000 = $1203). Total for past W & S studies is therefore = $4202

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $100/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $1250 each based on 2008 study cost = $3300

N = Estimated number of Equivalent Tenements created for Kalkite Catchment over twenty years = 50

APPENDIX 1 – DSP 6
Development Servicing Plan for
Willow Bay Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Willow Bay development area served by Snowy River Shire Council.

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

The areas covered by this DSP are shown on the Willow Bay Catchment Maps – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the areas covered by this DSP have been calculated as follows:

	Developer charges Willow Bay ($ per ET)
Water Supply – Low Zone	$8623
Water Supply – High Zone	$15661
Sewerage for developments not using SPS6	$4844
Sewerage for developments using SPS6	$10694

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

1. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Alpine Sands/ Willow Bay development areas served by Snowy River Shire Council.

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

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

2. Administration

DSP Name	DSP No.6 for Willow Bay Water & Sewer
DSP Area	The areas covered by this DSP are shown on the Willow Bay Catchment Maps – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by Jindabyne sewerage treatment works plus associated works in the Willow Bay catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREAS COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs from 2006/7
2006/07	116	
2011/12	189	73
2016/17	261	145
2021/22	301	185
2026/27	341	225

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the areas as shown on the Willow Bay catchment map (see map the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Willow Bay catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

Jindabyne Sewerage Treatment Works serves the Jindabyne, East Jindabyne, Willow Bay and Tyrolean Village catchments. Costs have been shared between these catchments in proportion to the Equivalent Tenements in each catchment.

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on targeting the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration (see Attachment E)	Calculated Developer Charge ($ per ET)
Water Supply – low Zone	**$9075**	**$486**	**$34**	**$8623**
Water Supply – high Zone	**$16206**	**$579**	**$34**	**$15661**
Sewer – Jindabyne Sewerage Treatment Works	$3074	$306	-	$2768
Sewer – Willow Bay Catchment Works for developments not using SPS 6	$2819	$777	$34	$2076
Sewer - Total for developments not using SPS6	**$5893**	**$1083**	**$34**	**$4844**
Sewer – Willow Bay Catchment Works for developments using SPS 6	$8669	$777	$34	$7926
Sewer - Total for developments using SPS 6	**$11743**	**$1083**	**$34**	**$10694**

Charges for different types of development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	**Year Commissioned**	**Effective year of commissioning for ROI[1]**	**Capital Cost**	**Capacity[2] (ETs)**	**Capital Cost per ET**	**Year when Capacity is Taken up**	**Take-Up Period (years)**	**Return on investment Factor**	**Capital Charge per ET**
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

In calculating Willow Bay Sewer Capital Charges there were two components, (1) the capital charges for the Jindabyne Sewerage Treatment Works which is shared with Jindabyne, East Jindabyne and Tyrolean Village, and (2) the capital charges for distribution works in the Willow Bay catchments. Both components are shown in Attachment B.

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET. The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D (includes for Jindabyne Sewerage Treatment Works and Willow Bay Sewerage Distribution)

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.8 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.

- Data provided by SRSC personnel to calculate equivalent tenements
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer
- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 – Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan. Also included in the SRSC Contributions Plan are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for different types of development

Type of Dwelling/ Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for WB Low Zone Water @ $8623 per ET	Contribution Rate for WB High Zone Water @ $15661 per ET	Contribution Rate for WB Sewer not using SPS6 @ $4844 per ET	Contribution Rate for WB Sewer using SPS6 @ $10694 per ET
Subdivision	lot	1	$8623	$15661	$4844	$10694
Dwellings - 1 bedroom	bedroom	0.57	$4915	$8927	$2761	$6096
Dwellings - 2 bedrooms	2 bedrooms	0.71	$6122	$11119	$3439	$7593
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$8623	$15661	$4844	$10694
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra b/r > 4	$8623 + $2501 per b/r > 4	$15661 + $4542 per b/r>4	$4844+ $1405 per b/r >4	$10694 + $3101 per b/r >4
Lodges & motels	room	0.29	$2501	$4542	$1405	$3101
Child Care Centres	per 20 children > 20	1	$8623	$15661	$4844	$10694
Educational Establishments	20 day students	1	$8623	$15661	$4844	$10694
	6 boarders	1	$8623	$15661	$4844	$10694
Camping Grounds	site	0.29	$2501	$4542	$1405	$3101
Tourism facilities	per motel type room and/or impact of large rooms or significant day visitors	0.29 per motel room or subject to individual assessment if significant visitors/ large rooms	$2501 per room or individual assessment	$4542 per room or individual assessment	$1405 per room or individual assessment	$3101 per room or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$862	$1566	$484	$1069
Commercial - retail	100m^2 of floor space	0.1	$862	$1566	$484	$1069
Commercial - restaurants	100m^2 of floor space	0.8	$6898	$11436	$3875	$8555
Industrial - light industry	lot	1	$8623	$12529	$4844	$10694
Industrial - heavy industry	Dependent on impact	individual assessment	individual assessment	individual assessment	individual assessment	individual assessment

Attachment A – Calculation of the Capital Charge – Willow Bay Water

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	**Pre-1996 Works**									
2135	2 x 0.17ML Reservoirs - WB share	30/06/1983	1995/96	69125	341	202.7	2026/27	32	1.52	309
2134	Kunama Reservoir - 2.5ML - WB share	30/06/1992	1995/96	351027	341	1029.4	2026/27	32	1.52	1569
2167	Rising Main - WB share	30/06/1992	1995/96	238668	341	699.9	2026/27	32	1.52	1067
2150	Intake 3 X - WB Share	30/06/1992	1995/96	442932	341	1298.9	2026/27	32	1.52	1979
	Post-1996 Works									
2195	Mains Delivery - WB Share	30/06/1998	1997/98	10745	341	31.5	2026/27	30	2.26	71
2205	PH Correction Scheme - WB share	30/06/1999	1998/99	113259	341	332.1	2026/27	29	2.21	733
2220	PH Correction Scheme - WB share	30/06/2000	1999/2000	7104	341	20.8	2026/27	28	2.16	45
2203	Subsidised Scheme Cnl - WB share	30/06/1999	1998/99	18670	341	54.8	2026/27	29	2.21	121
	Total for pre-1996 works									**5893**
	Post-1996 Works									
	Alpine Sands/Willow Bay - low zone only									
Asset No?	Alpine Sands Gravity Trunk Main from Kunama Reservoir	2005/06	2005/06	232,430	161	1443.7	2026/27	22	1.86	2683
	Future Works									
	Alpine Sands/Willow Bay overall									
Plan	East Jindabyne Mains, AS Extension to connect East Jindy main	2009/10	2009/10	92,000	309	297.7	2026/27	18	1.67	498
	Alpine Sands/Willow Bay/Tyrolean - using High Level Reservoir									
Plan	Willow Bay High Level Reservoir & Trunk Water Mains (Willow Bay Share)	2009/10	2009/10	$715,886	100	7158.9	2019/20	11	1.37	9815
	Total for Alpine Sands/Willow Bay - low zone developments (not needing high level infrastructure)									**9075**
	Total for Alpine Sands/Willow Bay - using high level water									**16206**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2a: East Jind, Will Bay/Alpine Sands & Tyrolean Village overall Capacity Estimates have been based on peak demand of 3kL/ET as per DLWC Guidelines & total reservoir capacity 3.44 ML based on 2 x 0.17ML in 1983, 2.5ML Kunama Reservoir in 1992, 0.6ML Willow Bay High Zone in 2009/10 (see note 2b below).

Therefore 3.44 ML = 1147 ET. However, costs have been proportioned to excludeTyrolean Village & East Jindabyne

Note 2b: 0.6ML Willow Bay High Zone Reservoir services Alpine Sands/Willow Bay and Tyrolean Village. As per Link Management memos 17 of 94 lots serviced by the high level water reservoir & system will be in Tyrolean Village & balance in Willow Bay, so costs for Willow Bay High Level Reservoir & Mains have been factored by 77/94 = 81.9%. Assuming there will be some multiple occupancy then 77 Willow Bay High Zone lots converts to 77 x 1.3 ET (Link estimate) = 100 ET. By Difference Low Zone ET at June 2017 will be 161

Note 3: Assumes 562 ET (for 263 for East Jindabyne, 116 for Willow Bay & 183 for Tyrolean Village) as at 30 June 2007 and 915 at June 2027 (323 for EJ, 341 for WB, 251 for TV) However capacity is 1147 - therefore at 2026/27 the proportion of take-up is 915/1147 = 0.80. Hence the capital cost is factored by 0.80

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Attachment B – Calculation of the Capital Charge – Alpine Sands/Willow Bay Sewer

B.1 Jindabyne Sewerage Treatment works Capital Charge

	Component	Year Commissioned	Effective year of commissioning for ROI1	Capital Cost (2007/08) ($)	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [2]	Take-Up Period (years)	Return on investment Factor [3]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
	JINDABYNE SEWERAGE TREATMENT WORKS (Covers Jindabyne, East Jindabyne, Willow Bay & Tyrolean Village catchments)									
Asset No.	**Pre-1996 Works**									
2276	Treatment Works Twin 4000EP Bathurst Boxes	1980/81	1995/96	$2,289,350	4667	490.5	2023/24	29	1.47	720
2277	Treatment Works Siteworks 8000EP	1980/81	1995/96	$449,500	4667	96.3	2023/24	29	1.47	141
2278	Prelim Treatment	1980/81	1995/96	$868,000	4667	186.0	2023/24	29	1.47	273
2279	Treatment Lagoons stage 1	1980/81	1995/96	$381,300	4667	81.7	2023/24	29	1.47	120
2280	Treatment Lagoons stage 2 & road	1988/89	1995/96	$896,402	4667	192.1	2023/24	29	1.47	282
2281	Sewerage Treatment - chemical	1988/89	1995/96	$194,733	4667	41.7	2023/24	29	1.47	61
2282	Building Concrete works PE	1988/89	1995/96	$424,700	4667	91.0	2023/24	29	1.47	134
	Post-1996 Works									
2350	Treatment Works	2001/02	2001/02	16587	4667	3.6	2023/24	23	1.91	7
2329	Jindabyne Golf Course Effluent study	1999/2000	1999/2000	89813	4667	19.2	2023/24	25	2.00	39
	Future Works									
Plan	Jindabyne STW. Augmentation Concept Study	2008/09	2008/09	$100,000	4667	21.4	2023/24	16	1.58	34
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2009/10	2009/10	$1,000,000	4667	214.3	2023/24	15	1.54	330
Plan	Jindabyne STW. Augmentation	2012/13	2012/13	$3,000,000	4667	642.8	2023/24	13	1.45	934
	Total	**Capital Charge per ET for Jindabyne, East Jindabyne, Willow Bay & Tyrolean Village for Jindabyne STW**								**3074**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..

With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and

4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24

Note 3: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

B.2 – Willow Bay Catchments Sewerage Distribution Works Capital Charge

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost[2] (2007/08 $)	Capacity[3] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset	**Pre-1996 Works for Willow Bay system**									
2304	#4 Sewer P/S - Willow Bay Proportion	30/06/1992	1995/96	$49,528	317	156.2	2023/24	29	1.47	229
2305	#5 Sewer P/S - Willow Bay Proportion	30/06/1992	1995/96	$49,571	317	156.4	2023/24	29	1.47	229
2286	Sewer Mains UPVC - Willow Bay Proportion	30/06/1993	1995/96	$509,831	317	1608.3	2023/24	29	1.47	2360
			Total for Willow Bay developments not using SPS 6							**2819**
	Post-1996 Works for Alpine Sands/Willow Bay									
Plan	Construct EJSPS # 6 & RM	2006/07	2006/07	$731,186	209	3498.5	2023/24	18	1.67	5851
			Total for Willow Bay developments using SPS 6							**8669**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: The Capital costs for pre-1996 works have now been taken at 50% of value due to 50% grant subsidy when built.

Note 3: Jindabyne STW was built to have a capacity of 8000EP in 1981 but was enhanced to go to 10000EP. It is proposed to upgrade the STW in 2013 by adding an extra capacity of 4000EP. This gives an estimated EP capacity of the Jindabyne STW system of 14000 which is equivalent to 4667 ET..
With a total of 3516 ETs as at June 2007 (for Jindabyne @ 2954, East Jindabyne @ 263, Willow Bay @ 116, Tyrolean Village @ 183), and
4871 ETs in June 2027 (3956 @ Jindabyne, 323 @ East Jindabyne, 341 at Willow Bay and 251 at Tyrolean Village). Growth averages 67.75 ET per yr.
This indicates capacity of the sewerage system will be reached around 2023/24
SPS 6 has been estimated to have a capacity to serve 209 ET (Link memo to SRSC)

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Water Reduction Amount for Willow Bay Catchment

PV of New ETs for Alpine Sands/Willow Bay (ie Growth of 11.25 per yr over 20 yrs @ 7% discount) -119

Assume: Renewal Expenditure occurs at end of life of asset - uses NSW Ref Rates Manual asset lives
See Water current & future assets for renewals over next 50 years (ie up to 2055/56)

Relevant Assets to be renewed in next 50 years for Willow Bay:

Asset No.	Description	Year built	MEERA Renewal Cost	Life of Asset	Year of Replacement
Plan Renewal	Refurbishment of Lime Dosing Plant - WB share	1998/99	2,885	25	2009/10
Plan Renewal	Refurbishment of Lime Dosing Plant - WB share	1998/99	9,615	25	2011/12
Plan Renewal	Intake PS M & E Works - WB Share	30/06/1992	96,150	25	2016/17
2135	2 x 0.17ML Reservoirs - WB Share	30/06/1983	10369	Roof -40yr (15% cost), Structure-100yr	2022/23
2205	PH Correction Scheme - WB Share	30/06/1999	113259	30 yrs	2028/29
2220	Ph Correction Scheme - WB Share	30/06/2000	7104	30 yrs	2029/30
2134	Kunama Reservoir - 2.5ML - WB Share	30/06/1992	52654	Roof -40yr (15% cost)	2031/32
Plan Renewal	Intake PS M & E Works - WB Share	2016/17	96,150	25	2041/42

NPV of Willow Bay Renewals low zone - excluding High Zone Reservoir	$114,256
PV of new ETs for Willow Bay	-119
ETs as at 30 June 2007	116
Reduction Amount per ET for Willow Bay Low Zone	**$486**

Additional Relevant Assets to be renewed in next 50 years for Willow Bay High Zone:

Plan	0.6Ml Willow Bay High Zone Reservoir	2009/10	107,383	Roof 15 % - 40 yr	2049/50

NPV of separate Willow Bay High Zone Renewals	$6,263
PV of new ETs for Alpine Sands/Willow Bay High Zone	-68
ETs as at 30 June 2007	0
Reduction Amount per ET for Willow Bay High Zone	**$579**

Attachment D – Calculation of Sewer Reduction Amount for Willow Bay Catchments

D.1 - Jindabyne Sewerage Treatment Works (shared with Jindabyne, East Jindabyne and Tyrolean Village catchments)

PV of New ETs for Jindabyne, E Jindabyne, Willow Bay & Tyrolean Village -686

(ie Growth of 67.75 per yr over 20 yrs @ 7% discount)

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	**Description**					
		Year built	**Meera Renewal Cost**	**Life of Asset**	**Year of Replacement**	
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	30/06/2010	1000000	20 yrs	2029/30	
2276	Treatment Works Twin 4000EP	30/06/1981	2289350	50 yrs	2030/31	
2278	Prelim Treatment	30/06/1981	868000	50 yrs	2030/31	
2279	Treatment Lagoons stage 1	30/06/1981	381300	50 yrs	2030/31	
2277	Treatment Works Siteworks 8000EP	30/06/1981	449500	50 yrs	2030/31	
			3988150			
2350	Treatment Lagoons stage 2 & road	30/06/1989	896402	50 yrs	2038/39	
2282	Building Concrete works PE	30/06/1989	424700	50 yrs	2038/39	
			1321102			
Plan	Jindabyne STW. Augmentation Controls Upgrade/OHS/Telemetry	2029/30	1000000	20 yrs	2049/50	
	NPV of Renewals				$1,287,525	
	PV of new ETs				-686	
	ETs Jind, E Jind, Willow Bay & Tyrolean Village as at 30 June 2007				3516	
	Reduction Amount per ET				-$306.41	

D.2 – Willow Bay Sewerage Catchment Distribution Renewals Expenditure to calculate Reduction Amount

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	1992-1994	74540	20 years approx	2019/20
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	1992-1994	74540	20 years approx	2020/21
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	1992-1994	74540	20 years approx	2021/22
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	1992-1994	74540	20 years approx	2022/23
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	1992-1994	74540	20 years approx	2023/24
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	2019/20	74540	20 years approx	2039/40
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	2020/21	74540	20 years approx	2040/41
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	2021/22	74540	20 years approx	2041/42
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	2022/23	74540	20 years approx	2042/43
SRSC Plan based on $1m from 2019	Willow Bay proportion of Pump Station Renewals (M & E) for East Jindabyne, Willow Bay & Tyrolean System (37.27%)	2023/24	74540	20 years approx	2043/44
	NPV of Renewals for Willow Bay				$182,725
	ETs as at June 30 2007 for Willow Bay				116
	PV of New ETs for Willow Bay (ie Growth of 11.25 per yr over 20 yrs @ 7% discount)				-119
	Reduction Amount per ET for Willow Bay				**-$777**

Attachment E – Preparation, Review and Administration of Willow Bay Catchments Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$7413 + 8000}{225 \times 2}$$

= $34.25 per ET for Water or Sewer

Where

C = Proportion of Cost of 1998 Water & Sewer study based on Willow Bay's proportion of Water & Sewer ETs (5.4% of $27,000 = $1458) plus external ($3000) and internal costs of 2005 study ($1200), plus proportion of cost of current study (5.4% of $10000 for W & S asset revaluation plus 5.4% for Willow Bay's s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.054 x 10000 + 0.054 x 0.75 x 30000 = $1755). Total for past W & S studies is therefore = $7413

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $500/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $2000 each based on past study costs = $8000

N = Estimated number of Equivalent Tenements created for Willow Bay Catchment over twenty years = 225

Attachment F – Calculating charges for developer supplied infrastructure in the Willow Bay Catchments Water & Sewer Plans

This plan provides for funding and provision of assets by a developer (see 7.8). Water and sewerage infrastructure has been provided by a developer to certain land in this catchment. Council has agreed to pay the developer a proportion of payments levied on development serviced by that infrastructure to enable recoupment (or part thereof) of costs incurred. The basis for payments to be made is specified below.

	Calculating Charges for Developer Supplied Infrastructure items									
							Escalating Charges in subsequent Years			
Catchment or Sub-Catchment	**Water Charges effective from 1 July 2008**	**Infrastructure Item built by developer**	**July 1 2008 charge per ET for Item**	**Amount rebated to Developer per relevant ET including own developments July 1 2008 - June 30 2009**	**Amount available for Council's other infrastructure July 1 2008 to June 30 2009**		**Canberra All Groups Index - Dec 2007**	**Canberra All Groups index in Dec prior to current Financial year**	**Rebate to Developer in current financial year**	**Amount Available to Council for other infrastructure**
Willow Bay Water - High Zone Developments	$15,661	High Level Reservoir	$9,815	$9,815	$5,846		160.8	160.8	$9,815	$5,846
Tyrolean Village Developments using High Level Reservoir	$15,624	High Level reservoir	$9,815	$9,815	$5,809		160.8	160.8	$9,815	$5,809
Willow Bay Developments using SPS 6 for Sewerage	$10,694	SPS 6	$5,851	$5,851	$4,843		160.8	160.8	$5,851	$4,843
Tyrolean Village Developments using SPS 6 for Sewerage	$11,895	SPS 6	$5,851	$5,851	$6,044		160.8	160.8	$5,851	$6,044

APPENDIX 1 – DSP 7

Development Servicing Plan for Adaminaby Catchment
Water & Sewer

Summary

This DSP covers water supply and sewerage developer charges in regard to the Adaminaby development areas served by Snowy River Shire Council.

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

The area covered by this DSP is shown on the Adaminaby catchment map – see the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

The timing and expenditures for works serving the area covered by this DSP are shown in Attachments A and B.

Standards of service to be provided in the DSP area are summarised in section 5.

The water supply and sewerage developer charges for the area covered by this DSP have been calculated as follows:

	Calculated Developer Charge ($ per ET)
Water Supply	**$13384 after 43.15% discount**
Sewer - Total for developments not using Scenic Drive PS	**$340**
Sewer - Total for developments using Scenic Drive PS	**$1678**

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted annually at 1 July on the basis of the movements in the CPI in the previous calendar year (Jan 1 to Dec 31), excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

3. Introduction

Section 64 of the *Local Government Act 1993* enables a local government council to levy developer charges for water supply, sewerage and stormwater. This 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 water supply [and/or sewerage] developer charges to be levied on development areas utilising a water utility's water supply [and/or sewerage] infrastructure.

This DSP covers water supply and sewerage developer charges in regard to the Adaminaby development areas served by Snowy River Shire Council.

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

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

4. Administration

DSP Name	DSP No.7 for Adaminaby Water & Sewer
DSP Area	The area covered by this DSP is shown on the Adaminaby Catchment Map – See the Snowy River Development Contributions Plan 2008 to which this DSP is attached.
DSP Boundaries	The basis for defining the DSP area boundaries is as follows: • Water - This is an area served by a separate water supply system • Sewer – This is an area common to the water supply area and served by sewerage treatment works plus associated works in the Adaminaby catchment
Payment of Developer Charges	Developer charges are payable as follows: **Subdivision** – at release of Certificate of Subdivision **Buildings** – at release of approved Construction Certificate **Development** – at release of development application

3. Demographic and Land Use Planning Information

3.1 Growth Projections

Growth projections for the number of Equivalent Tenements (ETs) are shown in the table below. These projections are based on information discussed in section 3 of the Snowy River Development Contributions Plan 2008 to which this DSP is attached.

As the Snowy River Shire has a high tourism component the current and projected number of ETs is more of an indicator of growth than permanent population. Also, although development is likely to occur in specific blocks, projections have been based on an even distribution over the planning years. This is regarded as a conservative approach.

TABLE 1 – GROWTH PROJECTIONS FOR THE AREA COVERED BY DSP……

Year Ending	Number of Equivalent Tenements	Cumulative Number of ETs since 2006/07
2006/07	245	
2011/12	259	14
2016/17	272	27
2021/22	286	41
2026/27	300	55

3.2 Land Use Information

This DSP should be read in conjunction with the Snowy River Local Environment Plan 1997 and the Snowy River Development Control Plan 1998 and any amendments.

4. Water Supply and Sewerage Infrastructure

This DSP covers the existing and proposed water supply headworks and water supply distribution works serving the area as shown on the Adaminaby catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

This DSP covers the existing and proposed sewerage major works and non-major works serving the area as shown on the Adaminaby catchment map (see map in the Snowy River Development Contributions Plan 2008 to which this DSP is attached).

4.1 Estimates of Capital Costs

The estimated capital cost of works serving the area covered by this DSP is shown in Attachment A for Water and Attachment B for Sewer.

4.2 Timing of Works and Expenditure

The timing and expenditure for works serving the area covered by this DSP are shown in Attachment A for Water and Attachment B for Sewer.

5. Standards of Service

System design and operation are based on providing the following standards of service.

5.1 Water Supply

- Treated water to 1996 NHMRC/ARMCANZ *Australian Drinking Water Guidelines* 98% of the time.
- Minimum water pressure of 12 metres whilst conveying 6 litres per minute per residential connection under normal conditions for at least 90% of properties.
- Water quality complaints less than 10 per 1,000 connected properties per annum.
- Less than 2 unplanned interruptions greater than 12 hours.
- Nil programmed interruptions greater than 12 hours.
- Water restrictions applying for not greater than 10% of the time on average.

5.2 Sewage

- Sewage effluent meeting Environment Protection Authority 90 Percentile Licence Limits (BOD, SS, Total N, NH3N, Oil and Grease, Total P, Faecal coliforms).
- All sewer chokes removed and service restored within 24 hours.
- Sewer overflows to the environment less than 1 per 10 km of mains pr year.
- Odour complaints less than 5 per 1000 properties per year.

6. Design Parameters

6.1 Water Supply

Investigation and design of water supply system components is based on the *Water Supply Investigation Manual* (1986). This Manual was prepared by NSW Public Works and is now managed by the Department of Infrastructure Planning and Natural Resources.

6.2 Sewage

Investigation and design of sewerage system components is based on the *Manual of Practice: Sewer Design* (1984) and the *Manual of Practice: Sewage Pumping Station Design* (1986). These Manuals were prepared by NSW Public Works and are now managed by the Department of Infrastructure Planning and Natural Resources.

7. Calculated Developer Charges

7.1 Summary

The developer charges for the area covered by this DSP are as follows:

	Capital Charge ($ per ET)	Reduction Amount ($ per ET)	Plan Development and Administration (see Attachment E)	Calculated Developer Charge ($ per ET)	Water Charge after 43.65% discount
Water Supply	$26,570	$2,871	$51	$23,750	$13,384
Sewer - Total for developments not using Scenic Drive PS	$331	$43	$51	$339	
Sewer - Total for developments using Scenic Drive PS	$1828	$201	$51	$1678	

Developer Charges for different types of Development are shown in section 10.

7.2 Capital Charge

The capital charges for the area served by this DSP have been calculated as follows:

7.3 Capital Charge Calculations

Capital Charge calculations were calculated using the spreadsheet as indicated below. Details, assumptions and outcomes for Water are provided in Attachment A and for Sewer in Attachment B.

Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost	Capacity[2] (ETs)	Capital Cost per ET	Year when Capacity is Taken up	Take-Up Period (years)	Return on investment Factor	Capital Charge per ET
	(1)	(2)	(3)	(4)	(5) = (2)/(3)	(6)	(7) = (6)-(1)+1	(8)	(9) = (5)x(8)
Pre-1996 Works									
Post-1996 Works									
Total									

7.4 Reduction Amount

Council has adopted the Direct NPV method to calculate the Reduction Amount. The reduction amount is calculated as the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET.

The reduction amounts have been calculated as follows:

7.5 Reduction Amount Calculations

The Reduction Amount = PV (renewals expenditure) per ET
+ PV (works for improving standards) per ET
+ Part of net debt serviced by annual charges per ET

For SRSC, there is currently no net debt for the utility.

Details of Reduction Amount calculations for Water are included in Attachment C, while for Sewer they are provided in Attachment D

7.6 Reviewing/Updating of Calculated Developer Charges

Developer charges relating to this DSP will be reviewed after a period of 5 to 6 years.

In the period between any review, developer charges will be adjusted on 1 July each year on the basis of movements in the CPI (based on the Canberra All Groups Index), in the preceding 12 months to December, excluding the impact of GST.

Where a significant new facility, not identified in this plan, is subsequently identified as being required to support development in the catchment, then this DSP will be reviewed and amended.

7.7 Reticulation Works

The developer shall be responsible for the full cost of the design and construction of water supply and sewerage reticulation works within subdivisions.

7.9 Funding of Essential Assets by Developer

In some cases a developer may wish to proceed with a development before essential assets, such as a water main or reservoir, are in place. Provided that there are no other constraints to the development, construction of the essential assets may be approved. In such cases the assets will be sized by the utility in accordance with the requirements of the DSP and the full capital cost will be met by this developer.

If the asset funded by this developer will serve other future development, the developer should be reimbursed when the utility collects developer charges from the future development. The utility and the developer must enter into an agreement stating how the developer will be reimbursed in the future.

8. Reference Documents

Background information and calculations relating to this DSP are contained in the following documents:

- Snowy River Development Contributions Plan 1998 Appendix 1: Water & Sewer (adopted by Council on 20 April 1999)
- Snowy River Shire Residential Planning Project – Final Report October 2005 – SGS Economics & Planning
- SRSC Asset Accounting System registers for Water & Sewer Assets
- NSW Reference Rates Manual for Valuation of Water Supply, Sewerage and Stormwater Assets (NSW Government Ministry of Energy and Utilities June 2003)
- NSW Government Land & Water Conservation Guidelines: Developer Charges for Water Supply, Sewerage and Stormwater (December 2002)
- Snowy Development Contributions Plan 2005 – approved By SRSC on May 16, 2006
- Snowy River Shire Council Water and Sewer Asset Register as updated November 2007 – January 2008.
- Data provided by SRSC personnel to calculate equivalent tenements
- Spreadsheets developed to conduct calculations in this study (held by SRSC)

These documents contain detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of assets, MEERA valuation of assets, and financial modelling for calculation of reduction amounts. These documents can be reviewed in Council's offices by appointment.

9. Other DSPs and Related Plans

The SRSC Water and Sewer Contributions Plan contains the following DSPs (including this DSP):

- DSP 1 – Jindabyne Catchment Water and Sewer
- DSP 2 – East Jindabyne Water and Sewer
- DSP 3 – Tyrolean Village Water and Sewer

- DSP 4 – Berridale Water and Sewer
- DSP 5 – Kalkite Water and Sewer
- DSP 6 - Willow Bay Water and Sewer
- DSP 7 – Adaminaby Water and Sewer

These DSPs are included in Appendix 1 of SRSC Contributions Plan 2008. Also included in the SRSC Contributions Plan 2008 are Appendices 2 to 9 which cover various components of s94 Development Contributions.

10. Charges for Different Types of Development

Type of Dwelling/Premises	Unit of Measure for Contribution	Equivalent Tenements	Contribution Rate for Water @ $13384 per ET	Contribution Rate for Sewer not using Scenic Drive PS @ $339 per ET	Contribution Rate for Sewer using Scenic Drive PS @ $1678 per ET
Subdivision	lot	1	$13384	$339	$1678
Dwellings - 1 bedroom	bedroom	0.57	$7629	$193	$956
Dwellings - 2 bedrooms	2 bedrooms	0.71	$9503	$241	$1191
Dwellings - 3 or 4 bedrooms	3 or 4 bedrooms	1	$13384	$339	$1678
Dwellings - > 4 bedrooms	bedroom	1 plus 0.29 per extra bedroom > 4	$13384 + $3881 per b/r > 4	$339 + $98 per b/r >4	$1678 + $487 per b/r >4
Lodges, resorts & motels	room	0.29	$3881	$98	$487
Child Care Centres	per 20 children greater than 20	1	$13384	$339	$1678
Educational Establishments	20 day students	1	$13384	$339	$1678
	6 boarders	1	$13384	$339	$1678
Camping Grounds	site	0.29	$3881	$98	$487
Tourism facilities	room and/or impact of day visitors	0.29 per room or subject to individual assessment if significant numbers of day visitors	$3881 per room or individual assessment	$98 or individual assessment	$487 per room or individual assessment
Commercial - offices	100m^2 of floor space	0.1	$1338	$34	$168
Commercial - retail	100m^2 of floor space	0.1	$1338	$34	$168
Commercial - restaurants	100m^2 of floor space	0.8	$3912	$271	$1342
Industrial - light industry	lot	1	$10707	$339	$1678
Industrial - heavy industry	Dependent on impact	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment	Subject to individual assessment

Attachment A – Calculation of the Capital Charge – Adaminaby Water

Asset No.	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost (2007/08 $)[2]	Capacity[2] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
	Pre-1996 Works									
	None included due to age of assets and upgrade in 2004-06									
	Post-1996 Works									
Adaminaby System Upgrade 2004-06										
	Intakes Pump Station	2005/06	2005/06	1904547	300	6348	2026/27	22	1.86	11801
	Chlorination Equipment	2005/06	2005/06	47599	300	159	2026/27	22	1.86	295
	Power Supply	2005/06	2005/06	306097	300	1020	2026/27	22	1.86	1897
	Pipelines	2005/06	2005/06	1352516	300	4508	2026/27	22	1.86	8380
	Reservoir	2005/06	2005/06	582975	300	1943	2026/27	22	1.86	3612
	Telemetry	2005/06	2005/06	51705	300	172	2026/27	22	1.86	320
	Valve Control Panel	2005/06	2005/06	20060	300	67	2026/27	22	1.86	124
	Future Works									
Plan	Installation of a PRV	2008/09	2008/09	16340	300	54	2026/27	19	1.72	94
Plan	Modification to Chlorination System	2008/09	2008/09	8170	300	27	2026/27	19	1.72	47
	Total									**26570**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.

For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Capacity Estimates have been based on SRSC advice that the system has a capacity of 1100 EP which is equivalent to 367 ET. At 2026/27 Adaminaby is assumed to be only at 300 ET. Therefore Capital costs factored by 300/367 = 0.817; Assumes full cost and does not factor by government subsidy

Note 3: Based on 245 ET as at 30 June 2007 and a growth of 55 ET over twenty years at 30 June 2027 it is assumed that Adaminaby has 300 ET

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)

PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment B – Calculation of the Capital Charge – Adaminaby Sewer

	Component	Year Commissioned	Effective year of commissioning for ROI[1]	Capital Cost[2] (2007/08 $)	Capacity[3] (ETs)	Capital Cost per ET (2007/08)	Year when Capacity is Taken up [3]	Take-Up Period (years)	Return on investment Factor [4]	Capital Charge per ET (2007/08)
		[1]	[2]	[3]	[4]	(5) = (3)/(4)	[6]	(7) = (6)-(2)+1	[8]	(9) = (5)x(8)
Asset No.	**Pre-1996 Works**									
	Post-1996 Works									
2335	Treatment Works 1999/2000 (M & E)	30/06/2000	1999/2000	$10,535	300	$35	2026/27	28	2.16	$76
2336	Treatment Works 2000/01 (M & E)	30/06/2001	2000/2001	$2,939	300	$10	2026/27	27	2.11	$21
2342	Treatment Works (2001/02)	31/12/2001	2001/02	$3,493	300	$12	2026/27	26	2.05	$24
2343	Treatment Works 2001/02)	31/12/2001	2001/02	$7,082	300	$24	2026/27	26	2.05	$49
	Future Works									
Plan	Investigation of STP	2010/11	2010/11	$30,000	300	$100	2026/27	17	1.63	$163
	Total for Adaminaby excluding Scenic Drive SPS									**$331**
Plan	Sewerage pumping station Scenic Drive	2013/14	2013/14	$200,000	200	$1,000	2026/27	14	1.50	$1,496
	Total for Adaminaby including Scenic Drive SPS									**1828**

Note 1: For pre 1996 assets year of commissioning is assumed to be 1995/96.
For post 1995/96 assets the year of commissioning has been assumed to be same as year of expenditure

Note 2: Does not include Asset no 2274 (STW built by SMA in 1960) and asset No. 2283 (VC Sewer Pipelines built by SMA in 1960) in capital calculations

Note 3: Assumes that current capacity will meet demand (300ET) till 2026/27

Note 4: ROI = - PMT(r/100,t,1)*t/(1 + r/100) where r = discount rate (%), t = take up period (years)
PMT is an excel function which calculates the required uniform annual payments

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p31 Example 5

Attachment C – Calculation of the Reduction Amount for Adaminaby Water

PV of New ETs (ie Growth of 2.75 per yr over 20 yrs @ 7% discount) -29

Relevant Assets to be renewed or upgraded in next 50 years:

Asset No.	Description	Year built	Meera Renewal Cost	Life of Asset	Year of Replacement
	Intakes Pump Station	2005/06	1904547	20 yrs	2025/26
	Telemetry	2005/06	51705	25	2030/31
	Valve Control Panel	2005/06	20060	25	2030/31
			71765		
	Chlorination Equipment	2005/06	47599	30	2035/36
	Power Supply	2005/06	306,097	30	2035/36
			353696		
	Reservoir Roof (15% of capital cost)	2005/06	87446	40 yrs	2045/46
	Intakes Pump Station	2025/26	1904547	20 yrs	2045/46
			1991994		
	Telemetry	2030/31	51705	25	2055/56
	Valve Control Panel	2030/31	20060	25	2055/56
			71765		

NPV of Renewals	$786,913
PV of new ETs	-29
ET as at June 30 2007	245
PV of existing + new ETs	-274
Reduction Amount per ET	-$2,870.55

Attachment D – Calculation of Reduction Amount for Adaminaby Sewer

PV of New ETs (ie Growth of 2.75 per yr over 20 yrs @ 7% discount) -29

Reference for calculations: Developer Charges Guidelines for Water Supply, Sewerage and Stormwater NSW DLWC December 2002, p38

Relevant Assets to be renewed in next 50 years based on SRSC plan and life of assets as per NSW Ref Rates Manual :

Asset No.	Description	Year built	MEERA Renewal Cost ($2007/08)	Life of Asset	Year of Replacement
Long term Renewals	Renewal of Treatment Plant M & E	2001/2002	$24,049	20 yrs	2021/22
Plan	Sewerage pumping station Scenic Drive (M & E)	2013/14	$200,000	20 years	2033/34
NPV at 2036/37 of 2037/38 to 2057/58 payments (from items below) excluding Scenic Drive					$17,147
NPV at 2036/37 of 2037/38 to 2057/58 payments (from items below)					$80,461
Long term Renewals	Renewal of Treatment Plant M & E	2021/2022	$24,049	20 yrs	2041/42
Plan	Sewerage pumping station Scenic Drive (M & E)	2033/34	200000	20 years	2053/54

NPV of Renewals excluding Scenic Drive	$11,737
NPV of Renewals including Scenic Drive	$55,076
PV of new ETs	-29
ET as at 30 June 2007	245
Reduction Amount per ET excluding Scenic Drive PS	**-$43**
Reduction Amount per ET including Scenic Drive PS	**-$201**

Attachment E – Preparation, Review and Administration of Adaminaby Catchment Water & Sewer Plans

Nexus

In order to establish the contribution rates under this plan, the Council has had to undertake a contribution study over the catchment area. The costs of this study were required in order to identify the types of public facilities for which a contribution may be made, the extent of the benefiting population, the cost of the required facilities, the proportion which may be "reasonably" levied as a Section 64 contribution, the actual contribution rates and the preparation of the implementation schedules. These works and cost incurred are outside the work normally undertaken by Council's Environmental Services Department. It is therefore reasonable to seek the recoupment of these costs.

To cover the capital cost of this study, administration and any additional studies undertaken in the future, it is reasonable for the Council to levy charges from developers under Section 64. The cost of future contribution plans, prepared in response to particular developments, should be recouped from the specific area.

Base Contribution Calculation per Equivalent Tenement for Water or Sewer (note: Split equally between each)

$$= \frac{C + R}{N}$$

$$= \frac{\$1560 + 4000}{55 \times 2}$$

= $51 per ET for Water or Sewer

Where

C = Proportion of cost of current study - 4.8% of $10000 for W & S asset revaluation plus 4.8% for Adaminaby's s64 costs proportion of total CP costs, assumed as 75%, of 2008 review = 0.048 x 10000 + 0.048 x 0.75 x 30000 = $1560.

R = Cost of updates and administration during the next ten years (2008/09 – 2017/18): 8 annual updates/administration at a cost of $100/ yr to update CPI & other factors plus a full review of this plan after approximately 5 & 10 years @ $1600 each based on 2008 study cost = $4000

N = Estimated number of Equivalent Tenements created for Adaminaby Catchment over twenty years = 55