

Rous Water Development Servicing Plan

Bulk Supply Services

7 April 2009





ROUS WATER DEVELOPMENT SERVICING PLAN - BULK SUPPLY

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Prepared for Rous Water by:

Hydrosphere Consulting Suite 6, 26-54 River Street PO Box 7059 BALLINA 2478 NSW

Telephone: 02 6686 0006 Facsimile: 02 6686 0084

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0	BULK SUPPLY DSP – DRAFT FOR REVIEW	R CAMPBELL	M HOWLAND	M HOWLAND	23-MAR-09
1	INCORPORATING ROUS WATER COMMENTS	R CAMPBELL	M HOWLAND	M HOWLAND	7-APR-09

SUMMARY

This Development Servicing Plan (DSP) covers water supply Developer Charges for the provision of bulk water to the whole of the area served by the Rous Water bulk water supply scheme, in the local government areas of:

- Ballina Shire Council, excluding Wardell;
- Byron Shire Council, excluding Mullumbimby;
- Lismore City Council, excluding Nimbin; and
- Richmond Valley Council, excluding Casino and all land west of Coraki.

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

The timing and expenditures for works serving the area covered by this DSP and the calculation of developer charges is given in Appendix 2. Levels of service to be provided to the service areas are summarised in Section 4.6.

The developer charge for the Rous Water bulk supply area is shown in Table 1.

Table 1 – Developer Charge

DSP	Developer Charge (2008/09 \$ per Equivalent Tenement)
Rous Water Bulk Supply	7,941

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

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

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

Further details relating to the Rous Water Bulk Supply assets and to this DSP can be found in the Background Document in Appendix 1.

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1. INTRODUCTION

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

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

This DSP covers water supply Developer Charges for the provision of bulk water to the whole of the area served by the Rous Water bulk water supply scheme. The provision of retail water supply services by Rous Water and the Constituent Councils of Lismore, Byron Bay, Ballina and Richmond Valley are covered by separate Development Servicing Plans.

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

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

DSP Name	Rous Water Bulk Water Supply				
DSP Area	The area covered by this DSP is shown in Figure 1, Section 4.				
DSP Boundaries	The DSP area boundary is defined as the area served by the Rous Water bulk water supply scheme, in the local government areas (LGAs) of:				
	Ballina Shire Council, excluding Wardell;				
	Byron Shire Council, excluding Mullumbimby;				
	Lismore City Council, excluding Nimbin; and				
	 Richmond Valley Council, excluding Casino and all land west of Coraki. 				
	The bulk supply scheme is discussed in Section 4.				

2. ADMINISTRATION

Developments may attract contributions where such development will utilise the Rous Water bulk water supply scheme. Additional contributions related to the provision of retail water supply services may also apply.

2.1 Payment of Developer Charges

2.1.1 Indexation

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

2.1.2 Tenement and Demand Projections

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

2.1.3 Timing

The majority of Rous Water's Developer Charges are collected by the Constituent Councils on behalf of Rous Water. On receipt of a Development Application or a Water Service Application, Rous Water, or its agent Council, will advise the charges payable under this DSP.

Payment of developer charges must be made in the form of a cash payment to Rous Water or its agent Council.

The developer contribution will be at the rate that applies at the time of payment i.e. the rate may increase (through indexation or review of this DSP) from the time the condition appears on the notice of development consent until the payment is received.

2.1.4 Waiver

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

2.2 Reticulation Works

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

2.3 DSP Review

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

3. THE DEVELOPER CHARGES PROCESS

3.1 Introduction

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

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

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

Developer Charge = Capital Charge (cost of providing the assets) –

Reduction Amount (cost recovered through annual bills).

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

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

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

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

3.2 Capital Charge

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

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

Capital Charge = Capital Cost x Return on Investment (ROI) Factor

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

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

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

3.3 Reduction Amount

Rous Water has adopted the Direct NPV method for calculation of the Reduction Amount. This method involves calculation of the renewal works and works to improve standards per ET, plus part of the net debt of the utility per ET.

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

4. ROUS WATER BULK SUPPLY SERVICES

4.1 Service Area

Rous Water is a single purpose Bulk Water Authority constituted as a County Council under the Local Government Act, 1993. Rous Water provides bulk water to four local water utilities (LWUs) on the far north coast of NSW, servicing the urban areas of the following LGAs:

- Ballina Shire Council, excluding Wardell;
- Byron Shire Council, excluding Mullumbimby;
- Lismore City Council, excluding Nimbin; and
- Richmond Valley Council, excluding Casino and all land west of Coraki.

These LWUs are referred to as the Constituent Councils and are responsible for the distribution and reticulation services from the bulk water meters to customers within their own LGAs. Rous Water is responsible for the construction, extension, protection, maintenance, control and management of bulk water supply works within these areas.

Rous Water's bulk water supply network extends from Ocean Shores in the north and Byron Bay in the east, west to Lismore and south across the Richmond River near Woodburn to Evans Head as shown in Figure 1.

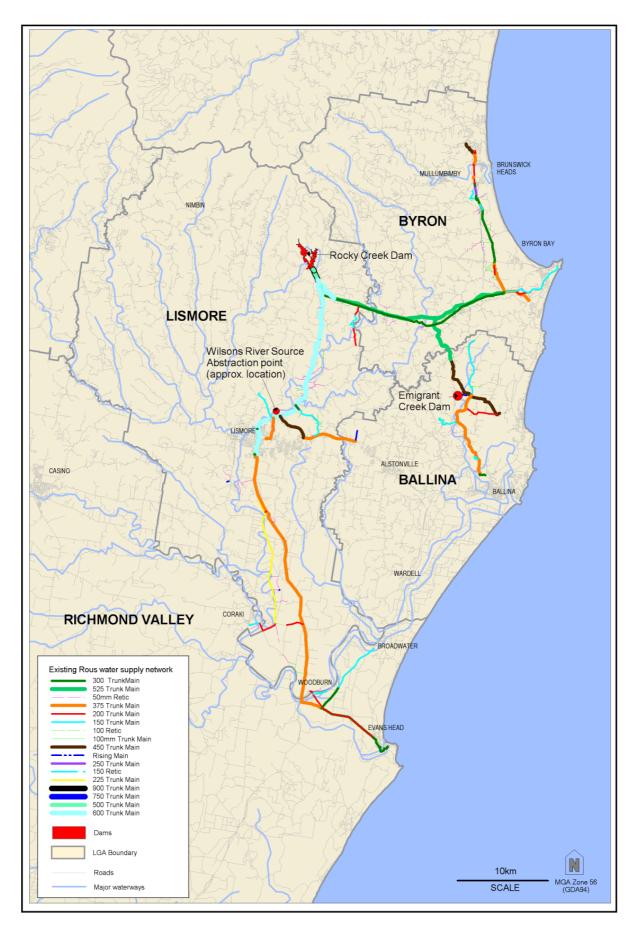


Figure 1 – Rous Water Bulk Supply Scheme

4.2 Bulk Water Supply Infrastructure

The principal component of the Rous Water bulk supply network is Rocky Creek Dam, situated 25 km north of Lismore near the village of Dunoon. Other water sources utilised by Rous Water include Emigrant Creek Dam, bores at Convery's Lane and Lumley Park in the Ballina area and bores near Woodburn. An additional surface water source, the Wilsons River Source was commissioned in 2008. Rous Water is also in the process of planning its next water source which will assist in meeting future water demands.

Rous Water is responsible for ensuring adequate treatment processes are in place to ensure the quality of water supplied meets the drinking water guidelines. Water from Rocky Creek Dam and the Wilsons River Source is treated at the 70 ML/d Nightcap Water Treatment Plant (WTP) built in 1991. Water from Emigrant Creek Dam is treated at the 7.5 ML/day Emigrant Creek WTP, commissioned in 2006. Water drawn from the Lumley Park and Convery's Lane groundwater bores is chlorinated prior to being pumped into the network. Water drawn from the Woodburn bores is filtered and chlorinated.

Treated water from the Nightcap WTP is distributed through three trunk mains owned and operated by Rous Water. One trunk main delivers water to Lismore and to the Richmond Valley area. The other two mains supply Lismore City Council, Byron Bay and Ballina Shire. Treated water from Emigrant Creek WTP is distributed to partly meet the water demands of Ballina and Lennox Head.

The Rous Water supply system is interconnected and considered to be a single system with any existing or future customer benefiting equally from all parts of the system. During various operating scenarios, supply to the whole system could be sourced from Rocky Creek Dam or from a combination of sources.

4.3 System Capacity

Rous Water plans to augment its water supply systems to cater for population growth, improve security of supply during drought, adapt to new water access rules and to manage water quality. The system capacity is based on the following:

- Headworks secure yield of water sources (ML/yr) and average annual demand of 200kL/ET/year (refer Table 2);
- Reservoirs capacity in ML and peak day demand of 2,500L/ET/day (unless the total capacity is less than the distribution system capacity); and
- Distribution system projected number of tenements served at the end of the design horizon (30 years).

Design demand is based on agreed service levels as documented in the Water Supply Agreement (2008) between Rous Water and the Constituent Councils.

The current system capacity is equivalent to the capacity of all existing sources excluding the Wilsons River Source (which was commissioned in 2008 to serve future customers).

Source	Secure Yield (ML/a)	Capacity (ET)
Rocky Creek Dam and Emigrant Creek Dam	10,000	50,000
Bores	1,000	5,000
Existing System Capacity (2008/09)	11,000	55,000
Wilsons River Source	4,200	21,000
Future System Capacity	15,200	76,000

Table 2 – Headworks Capacity

4.4 **Tenement Projections**

Developer charges contribute to the provision of system capacity to meet the demands of future development. New development may be served by a combination of existing and/or new assets. Annual growth (Figure 2) is based on the most probable growth scenario as documented in GeoLINK (2005).

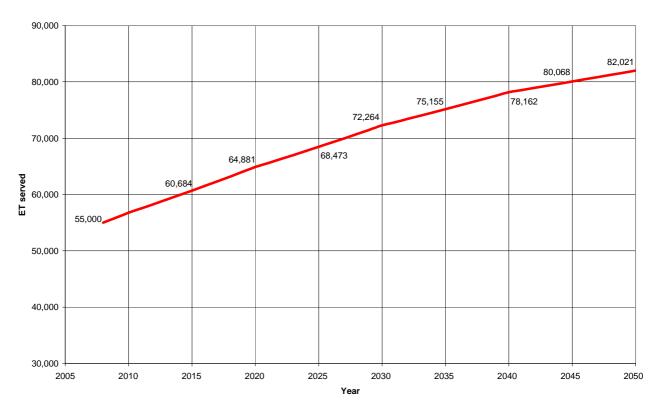


Figure 2 – Rous Water Growth Projections (ET served)

Source: GeoLINK (2005)

4.5 Design Parameters

Investigation and design of water supply system components is based on the Water Supply Investigation Manual (1986), WSAA water supply code of Australia - WSA 03 2002, and AUSPEC design specifications for water supply.

4.6 Standards of Service

System design and operation are based on the following standards of service. The Levels of Service are the targets which Rous Water aims to meet and are not intended as a formal customer contract.

Table	3 –	Levels	of	Service
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Description	Unit	Level	el of Service		
		Current	Target		
Service Provided					
Service area		Constituent Council areas served by the bulk water supply scheme	Constituent Council areas served by the bulk water supply scheme		
Availability of Supply					
Average annual/equivalent tenement (non-drought periods)	kL	200	200		
Domestic peak day (non-drought periods)	L/tenement/day	2,500	2,500		
Interruptions					
Supply interruptions (90% of time)					
Maximum duration of interruption to supply	Hours	8 (unplanned)	8 (unplanned)		
Main breaks	Number	1/20km/year	1/20km/year		
Water Quality					
Microbiological Results					
E. Coli	CFU/100 mL	0	0		
Total coliforms CFU/100 mL		0 (95%)	0 (95%)		
Residual Chlorine/Chloramines					
Minimum	mg/L	1.5	1.5		
Maximum	mg/L	2.0	2.0		
Chemical/Physical Results					
Maximum alkalinity	mg/L	50 - 60	50 - 60		
Colour	TCU	5	5		
Turbidity	NTU	0.5	0.5		
рН	-	7.5 – 8.5	7.5 – 8.5		
Taste and odour complaints	No/year	<30	<30		
Dirty water complaints	No/year	<30	<30		

Description	Unit	Level of	Service
		Current	Target
Minimum Sampling carried out to achieve statistical reliability		complies	complies
Corrosion Control (for longevity of assets and minimisation of heavy metals entering water from pipe fittings, household plumbing etc)		Lime/ Carbon Dioxide process at Water Treatment Plants and Woodburn Bores	Lime/ Carbon Dioxide process at Water Treatment Plants and Woodburn Bores

4.7 Future Capital Works

Capital works of \$131 M (2008/09 \$) will be required over the next 30 years to provide bulk water supply services (refer Figure 3 and Appendix 2). Any capital works in addition to those identified in this plan will be funded by developers. The developer shall be responsible for the full cost of the design and construction of reticulation works within subdivisions.

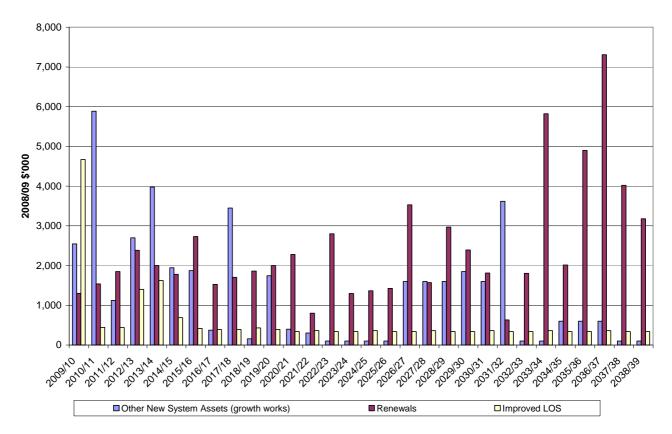


Figure 3 – Capital Works Expenditure

5. CALCULATION OF DEVELOPER CHARGES

The developer charge was calculated for the bulk water supply scheme as shown in Table 4. Calculations are given in Appendix 2.

Table 4 – Calculated Developer Charge (2008/09 \$ per ET)

Capital Charge	\$9,119 per ET		
Reduction Amount	\$1,178 per ET		
Developer Charge	\$7,941per ET		

Rous Water intends to levy developer charges equivalent to the calculated developer charge. This results in full cost recovery and no cross-subsidy of developer works by existing customers.

Background information and calculations relating to this DSP are included in the Background Document attached in Appendix 2. This document contains detailed calculations for the capital charge and reduction amount, including asset commissioning dates, size/length of existing assets, MEERA valuation of assets and calculation of the reduction amount.

ABBREVIATIONS AND GLOSSARY

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

REFERENCES

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

GeoLINK (2005) Dunoon Dam - Population and Demand Projections

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

Appendix 1 - DSP Background Document

Growth Projections

Permanent Population	% of population in Water Supply Area	Medium Growth Scenario (GeoLINK, 2005)				Permament population	Bulk Supply Customers	
LGA	(GeoLINK, 2005)	2001-2010	2010-2020	2020-2030	2030-2040	2040-2050	at 2006 Census	(persons) in 2006
Byron Bay	62%	2.5%	2.0%	1.6%	1.4%	1.2%	28,766	17,835
Ballina	82%	2.3%	2.0%	1.5%	0.9%	0.2%	38,461	31,538
Lismore	69%	0.5%	0.4%	0.4%	0.4%	0.4%	42,681	29,450
Richmond Valley	25%	0.8%	0.7%	0.7%	0.7%	0.7%	21,617	5,404
Total Bulk Supply		1.6%	1.3%	1.1%	0.8%	0.5%	131,525	84,227

Equivalent Tenement (ET) projections

Year	System Demand (ET)
2008	55,000
2009	55,873
2010	56,760
2011	57,524
2012	58,298
2013	59,083
2014	59,878
2015	60,684
2016	61,501
2017	62,329
2018	63,169
2019	64,019
2020	64,881
2021	65,584
2022	66,295
2023	67,013
2024	67,739
2025	68,473
2026	69,215
2027	69,965
2028	70,723
2029	71,490
2030	72,264
2031	72,834
2032	73,407
2033	73,985
2034	74,568
2035	75,155
2036	75,747
2037	76,344
2038	76,945
2039	77,551
2040	78,162

Rous Water Capital Works Program

	in year 2008/09 \$'000																										
Area	Project		Type of works	s	30 year	1 2	3 4	5 6	7	8	9	10	11 12	13	14 15	16	17	18	19 20	21	22 23	24	25	26	27	28	29 30
					, i i																						
		New System	Renewals	Improved	Total	2009/10 2010/11	2011/12 2012/13	2013/14 2014/1	5 2015/16	5 2016/17	2017/18	2018/19 20	19/20 2020/21	2021/22	2022/23 2023/24	2024/25	2025/26	2026/27	2027/28 2028/29	2029/30 203	30/31 2031/32	2032/33	2033/34	2034/35	2035/36	2036/37 20	37/38 2038
		Assets		LOS																							
Catchment			1000/	1	1.000	1 1		150	-	100		075				-	100							-	· · ·		
All	Asset Renewals - All Sites Equipment and tools		100%	100%	1,032 310	15 15	13	156 10 10	10	163	68 10	275	109 10 10	30 10		10	128 10	24 10	10 10	1 10	11 4 10 10	10	14	10	10	10	10 10
FCD	ECD - Bush Regeneration			100%	2,300	150 150	150 150		100	100	100	100	100 50	50	50 50	50		50	50 50	50		50	50	50	50	50	50 50
ECD	ECD - Installation of Catchment Signage (Regulatory/Information)	ł		100%	15	150 150	150 150	130 100	100	100	100	100	100 30	50	30 30	50	50	50	30 30	50 .	30 30	30	30	50	50	30	50 50
ECD	ECD - Installation of Catchment Signage (Regulatory/Information) - renewal		100%	10070	30								15							15							
ECD	ECD - Installation of New Buffer Zone Fencing			100%	43		3	35 5																			
ECD	ECD - Installation of New Buffer Zone Fencing -renewal		100%		50														50								
ECD	ECD - Installation of New Park Furniture			100%	10			10																			
ECD	ECD - Installation of New Park Furniture - renewal		100%		20									10							10						
ECD	ECD - Installation of Buffer Zone/Park Signage (Regulatory/Information)	4		100%	15		5	5 5					-							_							
ECD	ECD - Installation of Buffer Zone/Park Signage (Regulatory/Information) -renewal	L	100%	400%	10 35		10	15 10					5							5							
ECD	ECD - Upgrade of Buffer Zone/Park Access Roads ECD - Upgrade of Buffer Zone/Park Access Roads -renewal		100%	100%	25		10	15 10		5				5				5			5					5	
ECD	ECD - Opgrade of Burlet Zone/Park Access Roads -Tenewar ECD - Upgrade of Park Amenities/Buildings		100%	100%	15			15		5				5				5			5					5	
FCD	ECD - Upgrade of Park Amerities/Buildings -renewal		100%	10070	15			10										15									
ECD	Emigrant Creek Dam logging/disposal/reuse of slash pine	1		100%	175		175																				
ECD	Emigrant Creek: installation of real-time environmental monitoring equipment			100%	30			30																			
ECD	Emigrant Creek: installation of real-time environmental monitoring equipment - renewal		100%		40									20							20						
ECD	Strategic land acquisition (Emigrant Creek Dam)			100%	315		65	250																			
RCD	Rocky Creek Dam Onsite upgrades (amenities, house)		100%		30	15	15																				
RCD	Rocky Creek Dam Diesel tank replacement/bunding		100%	40000	15	15								<u> </u>		-								_			
RCD	RCD - Installation of Catchment Signage (Regulatory/Information)	ł	1000/	100%	9	3	3	3	-					+	25	+						05	<u> </u>	+	+		
RCD	RCD - Installation of Catchment Signage (Regulatory/Information) -renewal RCD - Installation of New Catchment Gates	I	100%	100%	50	3	3	3	-	-				+	25	+	+					25		+	+ +		
RCD	RCD - Installation of New Catchment Gates RCD - Installation of New Catchment Gates -renewal	ł	100%	100%	9 10	3	3	3	-		+			+ +		+	1				10	+	<u>├</u> ──	+	++		
RCD	RCD - Installation of New Buffer Zone/Park Fencing (Musgrave)	t	10070	100%	54	4	45	5								1	1				10	1	1	1			
RCD	RCD - Installation of New Buffer Zone/Park Fencing (Musgrave) - renewal	1	100%		20			<u> </u>									1				20						
RCD	RCD - Installation of New Park Furniture/Buildings	1		100%	35	5		15				15															
RCD	RCD - Installation of New Park Furniture/Buildings -renewal		100%		20														10								10
RCD	RCD - Installation of Buffer Zone/Park Signage (Regulatory/Information)	L	4	100%	25	5	5	5 5	5																		
RCD	RCD - Installation of Buffer Zone/Park Signage (Regulatory/Information) - renewal	<u> </u>	100%		30											15	-						L	15			
RCD	RCD - Upgrade of Catchment Access Roads (DEC MOU)			100%	225		25		25			25		25		25			25		25		25			25	
RCD	RCD - Upgrade of Buffer Zone/Park Walking Tracks RCD - Upgrade of Buffer Zone/Park Walking Tracks -renewal	L	100%	100%	40		15	25							10							10					
RCD	RCD - Opgrade of Burrer Zone/Park Walking Tracks -renewal RCD - Playground Equipment		100%	100%	20 25			25							10							10					
RCD	RCD - Playground Equipment -renewal		100%	100 /8	25			23											25								
WRS	Wilsons River Source - Bush Regeneration	100%	10070		2,822	74 74	74 50	50 100	100	100	100	100	100 100	100	100 100	100	100	100	100 100	100 1	00 100	100	100	100	100	100	100 100
WRS	Wilsons River: installation of real-time environmental monitoring equipment	100%	-		120			120																			
WRS	Wilsons River: installation of real-time environmental monitoring equipment -renewal		100%		120								60								60						
WRS	WRS - Installation of Catchment Signage (Regulatory/Information)	100%			110		30	30 10	10	10	10	10															
WRS	WRS - Installation of Catchment Signage (Regulatory/Information) -renewal		100%		50													50									
WRS	WRS - Installation of Buffer Zone/New Park Fences	100%			50		10	10 10	10	10																	
	WRS - Installation of Buffer Zone/New Park Fences - renewal	100%	100%		50		-			-													50				
	WRS - Installation of Buffer Zone/Park Signage (Regulatory/Information) WRS - Installation of Buffer Zone/Park Signage (Regulatory/Information) - renewal	100%	100%		25		5	5 5	5	5						20								20			
	WRS - Upgrade of Buffer Zone/Park Access Roads	100%	100 %		40 15		10	5		-						20								20			
	WRS - Upgrade of Buffer Zone/Park Access Roads - renewal	10070	100%		25					5				5				5			5					5	
Treatment						. · · · · · · · · · · · · · · · · · · ·				÷				-				-		1					1	-	
ECWTP	ECDWTP - Upgrade SCADA and PLCs	1	100%		425					25								150								250	
ECWTP	ECDWTP - Upgrade of SCA		100%		240							40								2	200						
ECWTP	ECDWTP - instrument upgrade		100%		265					40				60				65								100	
ECWTP	ECDWTP - Drying bed refit		100%		90					30								30								30	
ECWTP ECWTP	ECDWTP - Raw water pumps ECDWTP - Pneumatic control system	L	100%		210													10			5						
ECWTP	ECDWTP - Predmatic control system ECDWTP - Ozone equpment upgrade						Ů			10				5												175	
ECWTP	ECDWTP - membrane rebuild				100					10				5				100			250					175	
ECWTP			100%		250									5							250						
ECWTP					250 2,150					350				5				600			250					1200	
	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade		100% 100% 100% 100%		250 2,150 600									5				600 100 50			250						
ECWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems		100% 100% 100% 100%		250 2,150 600 50 320					350				5				600 100 50 320			250					1200 500	
ECWTP ECWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media		100% 100% 100% 100%		250 2,150 600 50 320 750									5				600 100 50			250					1200	
ECWTP ECWTP ECWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner		100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10	10				250				5				600 100 50 320			250					1200 500	
ECWTP ECWTP ECWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade	100%	100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320					350				5		60		600 100 50 320			250		1200			1200 500	
ECWTP ECWTP ECWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade	100%	100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10	10 445				250						60		600 100 50 320					1200			1200 500	
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade	100% 100%	100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445					250	40				60	60		600 100 50 320			250		1200			1200 500	
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - JobML upgrade NCWTP - 100ML upgrade NCWTP - Ste & buildings NCWTP - Ste & Buildings NCWTP - She F filter media - 12510-007		100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320		150			250	40				60	60	145	600 100 50 320					1200			1200 500	
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Ozone upgrade NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - NolML upgrade NCWTP - Site & buildings NCWTP - DAFF filter media - 12510-007 NCWTP - DAFF filter media - 12510-007		100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 	445				250				5	60 850			600 100 50 320 250					1200			1200 500	
ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Strukchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - 100ML upgrade NCWTP - 100ML upgrade NCWTP - Site & buildings NCWTP - DAFF filter media - 12510-007 NCWTP - DAFF filter media - 12510-007 NCWTP - SAC replacement NCWTP - SCA replacement		100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 	445	150	50		250	40	160		5			180	600 100 50 320 250		275			1200			1200 500	50
ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - JoolML upgrade NCWTP - Ste & buildings NCWTP - Ste & buildings NC		100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 750 10 1,320 445 	445	225	50	50	350 250 60	650				850	155		600 100 50 320 250 150		275 275			1200		320	1200 500 250	50
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Strichroom and conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - 100ML upgrade NCWTP - 100ML upgrade NCWTP - Strike Suiklings NCWTP - DAFF filter media - 12510-007 NCWTP - CAC replacement NCWTP - Sca replacement Waste system upgrade NCWTP - Replacement of Analysers and Instruments	100%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 750 10 1,320 445 445 445 445 1,00 890 850 1,950 1,500 284	445		50	50	250	650 15	5		5	850		180	600 100 50 320 250	55				1200		320	1200 500	50 25 5
ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - 100ML upgrade NCWTP - Ste & buildings NCWTP - Ste & buildings NCWTP - Raw water pumps replacement NCWTP - Raw water pumps replacement NCWTP - Raw system upgrade NCWTP - Raw system upgrade NCWTP - Ray system upgrade NCWTP - Replacement of Analysers and Instruments NCWTP - Major Machinery Upgrade		100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 320 750 10 1,320 445 100 890 850 850 1,950 1,500 284 1,430	445	225 20	50	50	350 250 60	650	5	150		850	155	180	600 100 50 320 250 150	55		250		1200		320	1200 500 250	50 25 5
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Ozone upgrade NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Stile & buildings NCWTP - ScA replacement NCWTP - Replacement of Analysers and Instruments NCWTP - Replacement of Analysers and Instruments NCWTP - Najor Machinery Upgrade NCWTP - Major Machinery Upgrade	30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 750 10 1,320 445 445 445 445 1,00 890 850 1,950 1,500 284	445	225	50	50	350 250 60	650 15	5	150		850	155	180	600 100 50 320 250 150	55				1200		320	1200 500 250	50
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Otome upgrade NCWTP - NoAditional Centrifuge and WTS upgrade NCWTP - NoAditional Centrifuge and WTS upgrade NCWTP - DAFF filter media - 12510-007 NCWTP - Raw water pumps replacement NCWTP - SAC replacement Waste system upgrade NCWTP - Replacement of Analysers and Instruments NCWTP - Najor Machinery Upgrade NCWTP - Sludge Disposal NCWTP - Sludge Disposal	100%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 750 10 1,320 445 	445	225 20 240	50	50	350 250 60	650 15 1130	5	150		850	155	180	600 100 50 320 250 150	55				1200		320	1200 500 250	50 5
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Stolke & buildings NCWTP - Stelke & buildings NCWTP - Stelke & buildings NCWTP - Stolke Teplacement NCWTP - Stolke and the steries and instruments NCWTP - Replacement of Analysers and Instruments NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade	30%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 750 10 1,320 445 	445	225 20	50	50	350 250 60	650 15	5 150	150		850 15 405	155	180	600 100 50 320 250 150					360		320	1200 500 250	
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Otome upgrade NCWTP - NoAditional Centrifuge and WTS upgrade NCWTP - NoAditional Centrifuge and WTS upgrade NCWTP - DAFF filter media - 12510-007 NCWTP - Raw water pumps replacement NCWTP - SAC replacement Waste system upgrade NCWTP - Replacement of Analysers and Instruments NCWTP - Najor Machinery Upgrade NCWTP - Sludge Disposal NCWTP - Sludge Disposal	30%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 320 750 1,320 1,320 445 445 445 100 890 850 1,950 1,950 284 2,40 2,625 1,095	445	225 20 240		50	350 250 60	650 15 1130	5	150		850	155	180	600 100 50 320 250 150	55 350 850				1200		320	1200 500 250	50 25 5 356 856
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Jondu Lugrade NCWTP - Stile & buildings NCWTP - Stale & buildings NCWTP - Stale & buildings NCWTP - Stale & buildings NCWTP - Raw water pumps replacement NCWTP - Stale pumps replacement NCWTP - Stale pumps replacement NCWTP - Studge Disposal NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Control system upgrade NCWTP - control system upgrade NCWTP - replacement of BAC media Telemetry upgrades	30%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 750 10 1,320 445 	445 145 145 	225 20 240 100 26	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	5	180 855	600 100 50 250 150 73 73 5	350 850		300		360			1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP All All	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - NoBAF filter media 12510-007 NCWTP - Raw water pumps replacement NCWTP - Ray replaced NCWTP - Ray replacement NCWTP - Ray of Additional Centers NCWTP - Ray mater pumps replacement NCWTP - Ray and pumps replacement NCWTP - Ray and pumps replacement NCWTP - Nagor Machinery Upgrade NCWTP - Nagor Machinery Upgrade NCWTP - Nenical Dosing and Storage upgrade - 100ML upgrade NCWTP - Iomical Dosing and Storage upgrade - 100ML upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 320 750 10 1,320 445 100 850 1,350 1,550 1,550 284 1,430 1,430 1,430 2,550 693 810	445 145 145 	225 20 240 100 26 20 25	15		350 250 60 13 300	650 15 1130	5 150 350 850	150 20 20	40	850 15 405	5	180 855	600 100 50 250 150 73	350		300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Stolk & buildings NCWTP - Stelk & buildings NCWTP - Stelk & buildings NCWTP - Raw water pumps replacement NCWTP - ScA replacement NCWTP - Replacement of Analysers and Instruments NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Control system upgrade NCWTP - control system upgrade NCWTP - control system upgrade NCWTP - control system upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement	30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 445 445 100 850 850 850 850 850 284 1,500 284 1,500 284 1,500 240 625 1,095 2,308	445 145 145 145 26 26 20	225 20 240 100 26	15 32 30		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	5	180 855	600 100 50 250 150 73 73 5	350 850	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP All All	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - Replace dosing systems ECDWTP - SWitchroom air conditioner ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Nothic upgrade NCWTP - Nothic upgrade NCWTP - Ste & buildings NCWTP - SAC replacement NCWTP - SAC keplacement NCWTP - SAC keplacement NCWTP - SAC keplacement NCWTP - Saw water pumps replacement NCWTP - SAC keplacement NCWTP - Najor Machinery Upgrade NCWTP - Najor Machinery Upgrade NCWTP - Sudge Disposal NCWTP - Control system upgrade NCWTP - Control system upgrade NCWTP - Ine System Upgrade NCWTP - Control system upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meet Replacement Flow Meet Replacement Flow Meet Replacement Ferradenya Water Reclamation Plant Flowide Dosing Plants	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%		250 2,150 600 50 320 750 10 1,320 445 100 850 1,350 1,950 1,950 1,950 1,950 1,950 2,840 2,840 2,400 4,000 2,550 6,93 8,100 2,550 2,5	445 145 145 	225 20 240 100 26 20 25	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	155	180 855 30	600 100 50 250 150 73 73 5	350 850	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP All All All	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Stolk & buildings NCWTP - Stelk & buildings NCWTP - Stelk & buildings NCWTP - Raw water pumps replacement NCWTP - ScA replacement NCWTP - Replacement of Analysers and Instruments NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Sludge Disposal NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Control system upgrade NCWTP - control system upgrade NCWTP - control system upgrade NCWTP - control system upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 445 445 100 850 850 850 850 850 284 1,500 284 1,500 284 1,500 240 625 1,095 2,308	445 145 145 145 26 26 20	225 20 240 100 26 20 25	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	5	180 855 30	600 100 50 250 150 73 73 5	350 850	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Strictnown are conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - NotML upgrade NCWTP - NotML upgrade NCWTP - Strictnown are conditioner NCWTP - Strictnown are pumps replacement NCWTP - ScA replacement NCWTP - ScA replacement NCWTP - Striptown and Advinery Upgrade NCWTP - Najor Machinery Upgrade NCWTP - Striptown Upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - replacement of Analysers NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement BAC media Flow Meter Replacement BAC media Flow Meter Replacement Flow Perradenya Water Reclamation Plant Flowide Dosing Plants Flowide Dosing Plants	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 10 1,320 445 445 445 445 445 890 850 850 850 850 284 1,500 284 1,500 284 1,500 240 625 1,095 2,556 693 810 2,2308 810 07 2,150 1,000 1,	445 145 145 145 26 26 20	225 20 240 100 26 20 25 300	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	155	180 855 30	600 100 50 250 150 73 73 5	350 850	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - NoPA diational Centrifuge and WTS upgrade NCWTP - NoPA diational Centrifuge and WTS upgrade NCWTP - NoPA filter media - 12510-007 NCWTP - Raw water pumps replacement NCWTP - SA c replacement WACY P - Replacement of Analysers and Instruments NCWTP - Nenioral Dosing and Storage upgrade - 100ML upgrade NCWTP - Iomical Dosing and Storage upgrade - 100ML upgrade NCWTP - replacement of BAC media Telemetry upgrades NCWTP - replacement NCWTP - Iomical Dosing and Storage upgrade - 100ML upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement Perradenya Water Replacament Perradenya Water Reclamation Plant Pluoride Dosing Plants Fluoride Dosing Plants Lumley Park boresite	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 100 850 1,350 1,550 284 1,500 284 2,550 625 2,550 603 810 2,308 810 2,308 1,007 2,150 1,075 2,150 1,50 2,50 1,50 2,50 2,50 1,50 1,50 1,50 1,50 1,50 1,50 1,50 1	445 145 145 145 26 26 20	225 20 240 100 26 20 25	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	155	180 855 30	600 100 50 250 150 73 73 5	350 850 20 30	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP STP NCWTP NC	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - 100ML upgrade NCWTP - 100ML upgrade NCWTP - Stie & buildings NCWTP - Ster & buildings NCWTP - Raw water pumps replacement NCWTP - Raw water pumps replacement NCWTP - Raw water pumps replacement NCWTP - Raw mater pumps replacement NCWTP - Raw mater pumps replacement NCWTP - Ray mater pumps replacement NCWTP - Ray mater pumps replacement NCWTP - Najor Machinery Upgrade NCWTP - Najor Machinery Upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Control System Upgrade NCWTP - Replacement 0 BAC media Telemetry upgrades Flow Meter Replacement Peradenya Water Reclamation Plant Fluoride Dosing Plants Fluoride Dosing Plants Fluoride Dosing Plants	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 1,320 445 445 100 890 850 850 1,950 2,84 1,500 2,84 1,500 2,84 4,500 693 810 625 693 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 603 810 810 80 80 80 80 80 80 80 80 80 80 80 80 80	445 145 145 145 26 26 20	225 20 240 100 26 20 25 300	15		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15 50 32	155	180 855 30	600 100 50 250 150 73 73 5	20 30 350 20 30 35	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP AU WCWTP NCW	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Nothich upgrade NCWTP - Ster & buildings NCWTP - Sch epiacement NCWTP - Sch replacement NCWTP - Sch replacement NCWTP - Sch applacement NCWTP - Sch replacement NCWTP - Sch replacement NCWTP - Sch replacement NCWTP - Sch replacement NCWTP - Najor Machinery Upgrade NCWTP - Scharge upgrade NCWTP - Scharge upgrade NCWTP - Studge Disposal NCWTP - Control system upgrade NCWTP - Control system upgrade NCWTP - replacement of BAC media Telemetry upgrades Flow Meter Replacement Perradenya Water Reclamation Plant Pluoride Dosing Plants Fluoride Dosing Plants Lumley Park boresite ECD - Upgrade aeration system	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 100 850 1,320 1,950 1,950 1,950 1,950 1,950 1,950 1,950 2,840 2,40 4,430 2,450 1,951 2,550 6,93 8,110 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,950 1,500 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,95	445 145 145 145 26 26 20	225 20 240 100 26 20 25 300 300	15 32 30 2008		350 250 60 13 300	650 15 1130 120	5 150 350 850		40	850 15 405 15	155	180 855 30	600 100 50 250 150 73 73 5	350 850 20 30	275	300	25	360	30		1200 500 250 13 5	350
ECWTP ECWTP ECWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP NCWTP AU WCWTP NCW	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade NCWTP - 100ML upgrade NCWTP - 100ML upgrade NCWTP - Ste & buildings NCWTP - Raw water pumps replacement NCWTP - Raw water pumps replacement NCWTP - Raw water pumps replacement NCWTP - Raw system upgrade NCWTP - Raw system upgrade NCWTP - Replacement of Analysers and Instruments NCWTP - Najor Machinery Upgrade NCWTP - Sludge Disposal NCWTP - Control system upgrade NCWTP - Studge Disposal Flow Meter Replacement BAC media Telemetry upgrades Flow Meter Replacement Perradenya Water Reclamation Plant Fluoride Dosing Plants Elumike Doresite ECD - Upgrade aeration system RCD - Une access upgrade and blue sealing	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 1,320 445 445 445 445 445 445 445 450 2,850 1,500 2,840 4,500 2,840 4,500 2,840 4,500 2,400 2,400 2,400 2,450 4,50 2,450 4,50 2,450 4,50 2,450 4,50 2,450 4,50 2,450 4,50 2,60 2,60 2,60 2,60 2,60 2,60 2,60 2,6	445 145 145 145 145 26 20 20 1007	225 20 240 100 26 20 25 300 30 30 30 80	15 15 32 30 2008 1020	30	350 250 60 13 13 300 25	650 15 1130 120 20	5 150 350 850 30 10	20 20	40	850 15 405 15 50 32 100	155 5 30 213	180 855 30	600 100 50 320 250 150 73 73 5 25 25	350 850 20 30 35 115	275	300 20 22		360 15 32		30	1200 500 250 13 5 25 	350 850 45 30
ECWTP ECWTP ECWTP NCWTP All All Bores ECD RCD All All All All	ECDWTP - Pumps and large machinery upgrade ECDWTP - compressor upgrade ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Switchroom air conditioner NCWTP - Ozone upgrade DCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - NoPA ditional Centrifuge and WTS upgrade NCWTP - NoPA filter media - 12510-007 NCWTP - Raw water pumps replacement NCWTP - Ray water pumps replacement NCWTP - ScA replacement of Analysers and Instruments NCWTP - Najor Machinery Upgrade NCWTP - Najor Machinery Upgrade NCWTP - Chemical Dosing and Storage upgrade - 100ML upgrade NCWTP - Control system Upgrade NCWTP - Stradecement Perradenya Water Reclamation Plant Fluoride Dosing Plants Euroide Dosing Plants ECD 1 Upgrade aeration system RCD 1 unrel access upgrade and plug sealing Equipment and tools <td>100% 30% 30%</td> <td>100% 100% 100% 100% 100% 100% 100% 100%</td> <td>100%</td> <td>250 2,150 600 50 320 750 10 1,320 445 100 850 1,320 1,950 1,950 1,950 1,950 1,950 1,950 1,950 2,840 2,40 4,430 2,450 1,951 2,550 6,93 8,110 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,950 1,500 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,95</td> <td>445 145 145 145 26 26 20</td> <td>225 20 240 100 26 20 25 300 30 30 80</td> <td>15 32 30 2008</td> <td>30</td> <td>350 250 60 13 13 300 25</td> <td>650 15 1130 120</td> <td>5 150 350 850 30 10</td> <td>20 20</td> <td>40</td> <td>850 15 405 15 50 32 100</td> <td>155 5 30 213</td> <td>180 855 30</td> <td>600 100 50 320 250 150 73 73 5 25 25</td> <td>20 30 350 20 30 35</td> <td>275</td> <td>300</td> <td></td> <td>360 15 32</td> <td></td> <td>30</td> <td>1200 500 250 13 13 5 25</td> <td>350 850 45 30</td>	100% 30% 30%	100% 100% 100% 100% 100% 100% 100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 100 850 1,320 1,950 1,950 1,950 1,950 1,950 1,950 1,950 2,840 2,40 4,430 2,450 1,951 2,550 6,93 8,110 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,550 1,500 2,840 1,950 2,950 1,500 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,950 1,950 2,95	445 145 145 145 26 26 20	225 20 240 100 26 20 25 300 30 30 80	15 32 30 2008	30	350 250 60 13 13 300 25	650 15 1130 120	5 150 350 850 30 10	20 20	40	850 15 405 15 50 32 100	155 5 30 213	180 855 30	600 100 50 320 250 150 73 73 5 25 25	20 30 350 20 30 35	275	300		360 15 32		30	1200 500 250 13 13 5 25	350 850 45 30
ECWTP ECWTP ECWTP NTCWTP NTCWTP NCWTP NCWTP NCWT	ECDWTP - Pumps and large machinery upgrade ECDWTP - Replace dosing systems ECDWTP - Replace dosing systems ECDWTP - BAC filter media ECDWTP - Strictroom are conditioner NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Additional Centrifuge and WTS upgrade NCWTP - Notification are conditioner NCWTP - 100ML upgrade NCWTP - State & buildings NCWTP - SAC replacement NCWTP - State & buildings NCWTP - Replacement of Analysers and Instruments NCWTP - Studge Disposal NCWTP - Studge Disposal NCWTP - Studge Disposal NCWTP - Studge Disposal NCWTP - Replacement of Analysers and Instruments NCWTP - Studge Disposal NCWTP - Studge Disposal NCWTP - Studge Disposal NCWTP - replacement of BAC media Telemetry upgrade NCWTP - Replacement of BAC media Flow Meter Replacement Paradenya Water Replacement Peradenya Water Replacement	100% 30% 30%	100% 100%	100%	250 2,150 600 50 320 750 10 1,320 445 45 1,950 2,84 1,950 2,84 1,430 2,440 445 1,950 2,84 1,430 2,440 40 2,250 6,93 8,10 2,15 1,00 2,15 3,05 3,05 2,15 1,000 2,150 3,05 3,05 3,05 3,05 3,05 3,05 3,05 3,	445 145 145 145 145 26 26 20 1007 15	225 20 240 100 26 20 25 300 300 30 10 10	15 15 32 30 2008 1020	30	350 250 60 13 13 300 25	650 15 1130 120 20	5 150 350 850 30 10	20 20	40	850 15 405 15 50 32 100	155 5 30 213	180 855 30 10	600 100 50 320 250 150 73 73 5 25 25	350 850 20 30 35 115	275	300 20 22		360 15 32		30	1200 500 250 13 5 25 	350 850 45 30

Rous Wat																																	
	orks Program																																
All values are	in year 2008/09 \$'000																					-											
Area	Project	ту	ype of works		30 year	1	2 3	4	5	6	7	8	9	10	11	12	13	14	15	16 1	17 18	i 19	20	21	22	23	24	25	26	27	28	29	30
		New System	Renewals	Improved LOS	Total	2009/10	2010/11 2011/	12 2012/13	2013/14	2014/15	2015/16	2016/17	2017/18 2	2018/19	2019/20	2020/21	2021/22	2022/23 20	023/24 20	24/25 202	25/26 2026	/27 2027/2	8 2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39
		Assets		LOS																													
Distribution S	Equipment and tools	-	1	100%	305	15	10 10	10	10	10	10	10	10	10	10	10	10	10	10	10 1	10 1/) 10	10	10	10	10	10	10	10	10	10	10	10
Bulk	Brunswick 375mm	50%	50%	10078		2055	995	10	10	10	10	10	10	10	10	10	10	10	10	10		, 10	10	10	10	10	10	10	10	10	10	10	10
Bulk	Patterson St	50%	50%		100	2000	000	100																									
Bulk	Knockrow Reservoir	90%	10%		2,495		2495																										
Bulk	Byron 300mm replacement - Dorroughby to Binna Burra	50%	50%		14,200		200	3500	3500	3500	3500																						
Bulk	Bulk Reservoir Bypass			100%	40	40																											
Bulk	Howards Grass Metering Byron 150 replacement (300mm from Coopers Shoot to Cemetery Rd)	50%	500/	100%	20	20	1000																										
Bulk Bulk	Tongarra Reservoir connection	50%	50%		1,000 70		1000			70																							
Bulk	Byron 375 (Binna Burra to St. Helena)	50%	50%		6,500					70														3500	3000								
Bulk	Knockrow 450 duplication	50%	50%		9,000																300	0 3000	3000		0000								
Bulk	Dorroughby 600 upgrade	100%			3,520																					3520							-
Bulk	Ballina Trunk Main - Knockrow to Ross Lane Reservoir	100%			1,600										1600																		
Bulk	Surge Tank, Dorroughby	100%			63	63								-		_																_	
Bulk	Wategoes 150 replacement	50%	100%		770			_								600				770				-									
Bulk Bulk	Byron Bay 200mm replacement Filling Station replacement	50%	50% 100%		600 110	20		_						45		600									+	+	45						
Bulk	Filling Station replacement Brunswick 300mm replacement		100%		110 4,500	20		_		-				40										-		+	45	900	900	900	900	900	
Bulk	Tullera 150 replacement		100%		1,200																						600	600	500	500	500	500	
Bulk	Warrambool 200mm replacement		100%		90															9	90												
Bulk	Coraki 150 (river crossing to reservoir)		100%		500																						500						
Bulk	Richmond Hill 150 replacement		100%		1,750																						350	350	350	350	350		
Bulk	Langs Hill 200mm replacement		100%		900						900																						
Bulk	Langs Hill 300mm replacement		100%		1,900											1900																	
Bulk	Ballina 300 (Pacific Hgwy/Gallens Rd) Ross Lane 200mm	50%	50%		400 1,700										4700		400																
Bulk Bulk	Ross St 375		100%		2,500										1700			1250	1250														
Bulk	City View Drive reservoir - roof replacement		100%		2,500							250						1230	1230														
Bulk	Lagoon Grass pump station		100%		400							200					400																
Bulk	St. Helena Reservoir	100%			3,250							250	3000																				
Bulk	Evans Head 300mm replacement		100%		6,000																										3000	3000	
Bulk	Coopers Shoot 375 replacement		100%		2,800																									2800			
Bulk	Richmond Hill 300 - replace with 150mm		100%		200 2.300																								200				
Bulk Bulk	Broadwater 150 Ross St reservoir (remote close)	100%	100%		2,300	F				-																		2300					
Bulk	Evans Head 200mm	50%	50%		3.000	5				-																			1000	1000	1000		
Bulk	St. Helena Reservoir	5078	100%		250																						250		1000	1000	1000		
Future Water													1									1											
FWS	Project Management	100%			429	101	104 109	115	1																								
FWS	Legal Advice	100%																															
FWS	Stakeholder Consultation	100%			953	241																											
FWS	Concept Design and Investigations	100%			1,810	591	513 556	150																									
Other Projects				100%	070		1	070	1	1	, ,									1				-	-	1	1	-	1	,			
Depot Depot	Depot upgrading Tools and Equipment (Construction Crew)			100% 100%	270	15	10 10	270	10	10	10	10	10	10	10	10	10	10	10	10 1	10 10) 10	10	10	10	10	10	10	10	10	10	10	10
Depot	Plant Fleet Replacement			100%	305 7,600	350	250 250			250	250	250		250	250	250	250	250			50 25				250		250	250	250	250	250	250	250
BH	Ballina Heights Dual Water Supply	100%			1.756	000	1611 145	200	200	200	200	200	200	200	200	200	200	200		2	20	- 200	200	200	200	200	200	200	200	200	200	200	
R	• • • • • • • • • • • • • • • • • • • •		1		.,		1 1 1																										
Totals					131.446	8.517	7,869 3,41	6.482	7.607	4.415	5.025	2.291	5.543	2.445	4.139	3.020	1.467	3.241 1	.737 1.	.833 1.8	368 5.4	3,535	4,910	4.581	3.776	4.591	2.245	6.286	2.955	5.840	8.273	4.460	3.617
	stem Assets (growth works)		1		40,951	2,548	5.886 1.12	5 2,700	3.978	1.945	1.875	375	3.449	155	1 745	400	300	100	100	100 1	00 1.6	0 1 600	1 600	1 850	1 600	3 620	100	100	600	600	600	100	100
Renewals					72,596	1,301	1,538 1,84	5 2,383	2,003	1,780	2,730	1,526 390	1,704	1,860	2,004	2,280	802	2,801 1 340	,297 1	,368 1,4	428 3,5	27 1,570	2,970	2,391	1,811	631	1,805	5,821	2,015	4,900	7,308	4,020	3,177
Improved LOS					17,899	4,669	445 440	1,399	1,626	690	420	390	390	430	390	340	365	340	340 :	365 3	40 34	0 365	340	340	365	340	340	365	340	340	365	340	340
Asset Owner 1	otals				131,446			-					-										-					-				-	
Catchment Ass			1		8,554	289	239 234		702	535	265	408	288	535 1,595	339	220	255	231	160 1 57 1	220 2 573 1,1	88 25	9 235	195	181 630	276	214	195 35	249	195	160	195	160	170
Source and Tre					32,431 77,338	4,713						1,113 510	1,985	1,595 55		30		1,490 1,260 1	5/	573 1,3 780 1	220 1,9 00 3,0		1,445 3,010			587		1,617	40	360		130	3,177 10
Distribution Sys Future Water S					3,192	2,218 933	4,700 10 858 906	3,610	3,510	3,580	4,410	510	3,010	00	3,310	2,510	010	1,200 1	,200	100 1	00 3,0	3,010	3,010	3,510	3,010	3,530	1,700	4,160	2,460	5,060	5,260	3,910	IU
Other Projects					9,931	365	1.871 405	495 530	260	260	260	260	260	260	260	260	260	260	260	260 2	60 26	0 260	260	260	260	260	260	260	260	260	260	260	260
1					-,		,	000	200													200	200	200	200		_00				-30		
Expected Gran	its	Subsidy		1		1	1					1	1	1		1	1	1					1				1					1	
RCD	Rocky Creek Dam Embankment Upgrade	20%	1		603	603																					1	1	Ì				
Total Grants			T		603	603																											

Deven Wester Devile Wester Oriente Oriente		1			1									
Rous Water Bulk Water Supply Scheme Capital Charge Calculation					Summary									
Pre 1996 discount rate	3%				per ET		Ta	otal						
Post 1996 discount rate	7%				Capital char	.00		,119	2008/09\$ pe	ar ET				
Peak day demand (L/ET/d)	2,500				Capital Chai	ge	φ9,	.119	2000/099 pe					
Asset	Capital cost	Year dollars ²	Capital Cost	Year commiss-	Effective	Present	Capacity	Capacity	Capital	Year of	Years to	Discount	ROI factor	Capital
	(\$'000) ¹	rear dollars	(\$'000, 2009\$) ³	ioned	year	value 2009	(ML)	(ETs)	cost	full take-	full take-	Rate		Charge (\$/ET)
	(\$ 000)		(\$ 000, 2003\$)	lonou	commiss-	(\$'000) ⁴	()	(=,	(\$/ET)	up	up	riato		ona go (4, 2 .)
					ioned	(\$000)			(*=-)					ł
Existing Water Sources and Treatment						1								
Bores	2	2008	2	1965	1996	2			0	2039	44	3%	1.76	0
Bores	500	2008	515	1967	1996	515			7	2039	44	3%	1.76	12
Bores	40	2008	41	1972	1996	41			1	2039	44	3%	1.76	1
Bores	53	2008	55	1977	1996	55			1	2039	44	3%	1.76	1
Bores	160	2008	165	1982	1996	165			2	2039	44	3%	1.76	4
Bores	4	2008	4	1987	1996	4			0	2039	44	3%	1.76	0
Bores	91	2008	93	1992	1996	93			1	2039	44	3%	1.76	2
Bores	24	2008	24	1994	1996	24			0	2039	44	3%	1.76	1
Bores	195 38	2008 2008	200 39	1997 1999	1997 1999	200 39			3	2039 2039	43 41	7% 7%	2.98 2.86	8
Bores Bores	29	2008	29	2001	2001	29			0	2039	39	7%	2.00	1
Bores	65	2008	67	2001	2001	67			1	2039	39	7%	2.47	2
Bores	12	2008	12	2000	2000	12			0	2039	33	7%	2.47	0
Emigrant Creek Dam	12,423	2008	12,793	1964	1996	12,793			168	2039	44	3%	1.76	296
Emigrant Creek Dam	294	2008	303	1997	1997	303			4	2039	44	7%	2.98	12
Emigrant Creek Dam	3	2008	303	1999	1999	3			0	2039	43	7%	2.86	0
Emigrant Creek Dam	215	2008	221	2005	2005	221			3	2039	35	7%	2.53	7
Emigrant Creek Dam	10,287	2008	10,594	2006	2006	10,594			139	2039	34	7%	2.47	345
Night Cap WTP	27,764	2008	28,592	1992	1996	28,592			376	2039	44	3%	1.76	663
Night Cap WTP	20	2008	21	1997	1997	21			0	2039	43	7%	2.98	1
Night Cap WTP	15	2008	15	1998	1998	15			0	2039	42	7%	2.92	1
Night Cap WTP	5	2008	5	1999	1999	5			0	2039	41	7%	2.86	0
Night Cap WTP	15	2008	15	2000	2000	15			0	2039	40	7%	2.80	1
Night Cap WTP	774	2008	797	2001	2001	797			10	2039	39	7%	2.75	29
Night Cap WTP	161	2008	166	2002	2002	166			2	2039	38	7%	2.69	6
Night Cap WTP	172	2008	177	2003	2003	177			2	2039	37	7%	2.64	6
Night Cap WTP	38	2008	39	2004	2004	39			1	2039	36	7%	2.58	1
Night Cap WTP	161	2008	165	2005	2005	165			2	2039	35	7%	2.53	5
Night Cap WTP	3,954	2008	4,071	2006	2006	4,071			54	2039	34	7%	2.47	132
Night Cap WTP	5 45,277	2008 2008	5	2007	2007	5			0	2039	33	7%	2.42	0
Rocky Creek Dam Rocky Creek Dam	260	2008	46,627 268	1953 2005	1996 2005	46,627 268			614 4	2039 2039	44 35	3% 7%	1.76 2.53	9
Rocky Creek Dam	18	2008	19	2005	2005	19			0	2039	35	7%	2.53	1
NWTP Disabled ramp access	70	2008	72	2003	2003	72			1	2039	31	7%	2.33	2
RCD Safety upgrade	100	2009	100	2003	2009	100			1	2039	31	7%	2.31	3
ECD upgrade diffusers	15	2009	15	2009	2009	15			0	2039	31	7%	2.31	0
ECWTP shower, laundry	10	2009	10	2009	2009	10			0	2039	31	7%	2.31	0
2009 NCWTP Asset expenditure	501	2009	501	2009	2009	501			7	2039	31	7%	2.31	15
Telemetry and bulk meters	96	2009	96	2009	2009	96			1	2039	31	7%	2.31	3
Future Water Sources and Treatment														[
Wilsons River Source	40,500	2009	40,500	2009	2009	40,500			533	2039	31	7%	2.31	1,232
Future Water Source Investigations	698	2009	698	2009	2009	698			9	2039	31	7%	2.31	21
Future Water Source	933	2009	933	2010	2010	872			11	2039	30	7%	2.26	26
Future Water Source	858	2009	858	2011	2011	749			10	2039	29	7%	2.21	22
Future Water Source	906	2009	906	2012	2012	740			10	2039	28	7%	2.16	21
Future Water Source	495	2009	495	2013	2013	378			5	2039	27	7%	2.11	10
NCWTP - Additional Centrifuge and WTS upgrade	445	2009	445	2010	2010	416			5	2039	30	7%	2.26	12
NCWTP - Major Machinery Upgrade	1,130	2009	1,130	2018	2018	615			8	2039	22	7%	1.86	15
NCWTP - Major Machinery Upgrade NCWTP - Major Machinery Upgrade	150 150	2009 2009	150 150	2019 2020	2019 2020	76			1	2039 2039	21 20	7% 7%	1.81 1.76	2
Perradenya Water Reclamation Plant	300	2009	300	2020	2020	229			3	2039	20	7%	2.11	6
Perradenya Water Reclamation Plant	2008	2009	2,008	2013	2013	1,432			19	2039	26	7%	2.05	39
	2000	2003	2,000	2014	2014	1,402			10	2000	20	1 /0	2.00	
Total Water Sources and Treatment	152,434					153,713		76,000	2,023					4,062
					+			. 3,000	_,520					.,
Existing Transfer System	İ • • • • • • • • • • • • • • • • • • •	1	1	İ	1									[
Trunk Mains	412	2008	424	1970	1996	424			6	2039	44	3%	1.76	10
Trunk Mains	856	2008	881	1971	1996	881			11	2039	44	3%	1.76	20
Trunk Mains	31,116	2008	32,044	1972	1996	32,044			416	2039	44	3%	1.76	733
Trunk Mains	3,498	2008	3,602	1974	1996	3,602			47	2039	44	3%	1.76	82
Trunk Mains	515	2008	530	1975	1996	530			7	2039	44	3%	1.76	12
Trunk Mains	4,046	2008	4,166	1976	1996	4,166			54	2039	44	3%	1.76	95
Trunk Mains	8,594	2008	8,850	1977	1996	8,850			115	2039	44	3%	1.76	203
Trunk Mains	1,474	2008	1,518	1978	1996	1,518			20	2039	44	3%	1.76	35
Trunk Mains	351	2008	362	1979	1996	362			5	2039	44	3%	1.76	8
Trunk Mains	2,802	2008	2,885	1981	1996	2,885			37	2039	44	3%	1.76	66
Trunk Mains	33,394	2008	34,391	1982	1996	34,391			447	2039	44	3%	1.76	787
Trunk Mains	34,690	2008	35,725	1983	1996	35,725			464	2039	44	3%	1.76	818
Trunk Mains	4,388	2008	4,519	1984	1996	4,519			59	2039	44	3%	1.76	103
Trunk Mains	6,456	2008	6,649	1985	1996	6,649			86	2039	44	3%	1.76	152
Trunk Mains	7,929	2008	8,165	1986	1996	8,165			106	2039	44	3%	1.76	187

Rous Water Bulk Water Supply Scheme			1											
Capital Charge Calculation					Summary									
Pre 1996 discount rate	3%				per ET			otal						
Post 1996 discount rate	7%				Capital char	ge	\$9,	119	2008/09\$ p	er ET				
Peak day demand (L/ET/d)	2,500	ļ												
Asset	Capital cost (\$'000) ¹	Year dollars ²	Capital Cost (\$'000, 2009\$) ³	Year commiss- ioned	Effective year commiss- ioned	Present value 2009 (\$'000) ⁴	Capacity (ML)	Capacity (ETs)	Capital cost (\$/ET)	Year of full take- up	Years to full take- up	Rate	ROI factor	Capital Charge (\$/ET)
Trunk Mains	7,751	2008	7,982	1987	1996	7,982			104	2039	44	3%	1.76	183
Trunk Mains	347	2008	357	1993	1996	357			5	2039	44	3%	1.76	8
Trunk Mains	1,176	2008	1,211	1995	1996	1,211			16	2039	44	3%	1.76	28
Trunk Mains	1,311	2008	1,350 817	1996 1997	1996 1997	1,350			18	2039 2039	44	7%	3.03 2.98	53
Trunk Mains	793 5,490	2008	5,654	1997	1997	817 5,654			73	2039	43 42	7% 7%	2.90	32 214
Trunk Mains	5,159	2008	5,313	2000	2000	5,313			69	2039	42	7%	2.92	194
Trunk Mains	314	2008	324	2000	2000	324			4	2039	39	7%	2.75	134
Trunk Mains	554	2008	571	2002	2002	571			7	2039	38	7%	2.69	20
Trunk Mains	100	2008	103	2003	2003	103			1	2039	37	7%	2.64	4
Trunk Mains	317	2008	326	2004	2004	326			4	2039	36	7%	2.58	11
Trunk Mains	1,943	2008	2,001	2005	2005	2,001			26	2039	35	7%	2.53	66
Trunk Mains	3,184	2008	3,279	2006	2006	3,279			43	2039	34	7%	2.47	105
Trunk Mains	1,076	2008	1,108	2007	2007	1,108			14	2039	33	7%	2.42	35
Trunk Mains	861	2008	887	2008	2008	887			12	2039	32	7%	2.36	27
Lagoon Grass Pump Station	1292	2008	1,330	1986	1996	1,330			17	2039	44	3%	1.76	30
Brunswick 375mm Stage 4	496	2009	496	2009	2009	496			6	2039	31	7%	2.31	15
Lismore 600mm (Arthurs Rd bypass)	45	2009	45	2009	2009	45			1	2039	31	7%	2.31	1
Valve replacement - James Road	30	2009	30	2009	2009	30			0	2039	31	7%	2.31	1
Mains - Sheehan Road	145	2009	145 10	2009 2009	2009 2009	145			2	2039	31	7%	2.31	4
Lismore (450mm decommission) Knockrow rising main	10	2009 2009	4	2009	2009	10			0	2039 2039	31 31	7% 7%	2.31 2.31	0
Filling stations	20	2009	20	2009	2009	20			0	2039	31	7%	2.31	1
Bexhill pump station	300	2009	300	2009	2009	300			4	2039	31	7%	2.31	9
Future Transfer System	500	2003	500	2003	2003	300				2000	51	1 70	2.01	
Brunswick 375mm	2,055	2009	2,055	2010	2010	1,921			25	2039	30	7%	2.26	56
Brunswick 375mm	995	2009	995	2010	2011	869			11	2039	29	7%	2.21	25
Patterson St	100	2009	100	2013	2013	76			1	2039	27	7%	2.11	2
Byron 300mm replacement - Dorroughby to Binna Burra	200	2009	200	2011	2011	175			2	2039	29	7%	2.21	5
Byron 300mm replacement - Dorroughby to Binna Burra	0	2009	0	2012	2012	0			0	2039	28	7%	2.16	0
Byron 300mm replacement - Dorroughby to Binna Burra	3,500	2009	3,500	2013	2013	2,670			35	2039	27	7%	2.11	73
Byron 300mm replacement - Dorroughby to Binna Burra	3,500	2009	3,500	2014	2014	2,495			32	2039	26	7%	2.05	67
Byron 300mm replacement - Dorroughby to Binna Burra	3,500	2009	3,500	2015	2015	2,332			30	2039	25	7%	2.00	61
Byron 150 replacement (300mm from Coopers Shoot to Cemetery Rd)	1,000	2009	1,000	2011	2011	873			11	2039	29	7%	2.21	25
Tongarra Reservoir connection	70	2009	70	2015	2015	47			1	2039	25	7%	2.00	1
Byron 375 (Binna Burra to St. Helena)	3,500	2009	3,500	2030	2030	845			11	2039	10	7%	1.33	15
Byron 375 (Binna Burra to St. Helena)	3,000	2009	3,000	2031	2031	677			9	2039	9	7%	1.29	11
Knockrow 450 duplication	3,000	2009	3,000	2027	2027	888			12	2039	13	7%	1.45	17
Knockrow 450 duplication	3,000	2009	3,000	2028	2028	830			11	2039	12	7%	1.41	15
Knockrow 450 duplication	3,000 3,520	2009 2009	3,000 3,520	2029 2032	2029 2032	775			10	2039 2039	11 8	7% 7%	1.37 1.25	14 12
Dorroughby 600 upgrade Ballina Trunk Main - Knockrow to Ross Lane Reservoir	1,600	2009	1,600	2032	2032	743			10	2039	20	7%	1.25	12
Surge Tank, Dorroughby	63	2009	63	2020	2020	59			10	2039	30	7%	2.26	2
Byron Bay 200mm replacement	600	2009	600	2010	2010	266			3	2039	19	7%	1.72	6
Ballina 300 (Pacific Hgwy/Gallens Rd)	400	2009	400	2021	2021	166			2	2039	18	7%	1.67	4
Ross St reservoir (remote close)	5	2009	5	2022	2022	5			0	2039	30	7%	2.26	0
Evans Head 200mm	1,000	2009	1,000	2010	2034	184			2	2039	6	7%	1.18	3
Evans Head 200mm	1,000	2009	1,000	2035	2035	172			2	2039	5	7%	1.14	3
Evans Head 200mm	1,000	2009	1,000	2036	2036	161			2	2039	4	7%	1.10	2
Total Transfer System	212,847					196,365		76,945	2,552					4,801
Existing Reservoirs														
City View Drive Roof	257	2008	264	1986	1996	264	9.10	3,640	3	2039	44	3%	1.76	6
Dorroughby Tank No 1	230	2008	237	1980	1996	204	0.33	132	3	2039	44	3%	1.76	5
Dorroughby Tank No 2	110	2008	113	1992	1996	113	0.09	36	1	2039	44	3%	1.76	3
Langs Hill Roof	170	2008	175	2002	2002	175	4.50	1,800	2	2039	38	7%	2.69	6
Shakley's Tank	65	2008	67	1970	1996	67	0.46	184	1	2039	44	3%	1.76	2
St Helena Res Roof	257	2008	264	2002	2002	264		-	3	2039	38	7%	2.69	9
Tintenbar Res	268	2008	276	1987	1996	276	0.57	228	4	2039	44	3%	1.76	6
Tintenbar ResRoof	47	2008	49	1987	1996	49		-	1	2039	44	3%	1.76	1
Tullera Res	379	2008	391	1976	1996	391	1.00	400	5	2039	44	3%	1.76	9
Tullera Res Roof	83	2008	86	1976	1996	86		-	1	2039	44	3%	1.76	2
Tullera Reservoir	10	2009	10	2009	2009	10		-	0	2039	31	7%	2.31	0
Reservoir entrance improvements	15	2009	15	2009	2009	15		-	0	2039	31	7%	2.31	0
Knockrow Reservoir SID	500	2009	500	2009	2009	500		-	6	2039	31	7%	2.31	15
Future Reservoirs	0.405	20000	0.405	2011	2011	0.470	10.00	4 000		20000		70/	2.01	
Knockrow Reservoir	2,495	2009	2,495	2011	2011	2,179	10.00	4,000	28	2039	29	7%	2.21	63
St. Helena Reservoir St. Helena Reservoir	250 3,000	2009 2009	250 3,000	2017 2018	2017 2018	146	9.10	3,640	2	2039 2039	23 22	7% 7%	1.91 1.86	4 39
	3,000	2009	3,000	2010	2010	1,032				2039		1 70	1.00	
Total Reservoirs	8,135		+			6,403	35.2	76,945	83	+				171
1010111000110110	0,100	1	1		1	0,403	J 35.2	10,340	00	1	1		1	1/1

Rous Water Bulk Water Supply Scheme		1	1			1	-							
Capital Charge Calculation					Summary									
Pre 1996 discount rate	3%				per ET	ł	Т	otal						
Post 1996 discount rate	7%				Capital char	ae		,119	2008/09\$ p	erET				
Peak day demand (L/ET/d)	2,500		1		oupital ontai	90	ψũ		2000,000 p					
Asset	Capital cost	Year dollars ²	Capital Cost	Year commiss-	Effective	Present	Capacity	Capacity	Capital	Year of	Years to	Discount	ROI factor	Capital
	(\$'000) ¹	real donars	(\$'000, 2009\$) ³	ioned	year	value 2009		(ETs)	cost	full take-	full take-	Rate		Charge (\$/ET)
	(\$ 555)		(*****, 2*****)		commiss-	(\$'000)4			(\$/ET)	up	up			
					ioned	(\$ 000)								
						1								
Existing Catchment Assets						1	·							
Access Control	1	2008	1	1992	1996	1			0.0	2039	44	3%	1.76	0.0
Access Control	7	2008	8	1997	1997	8			0.1	2039	43	7%	2.98	0.3
Access Control	16	2008	16	2001	2001	16			0.2	2039	39	7%	2.75	0.6
Roads and Trails	32	2008	33	1983	1996	33			0.4	2039	44	3%	1.76	0.8
Roads and Trails	5	2008	5	1989	1996	5	1		0.1	2039	44	3%	1.76	0.1
Roads and Trails	63	2008	65	1992	1996	65			0.8	2039	44	3%	1.76	1.5
Roads and Trails	86	2008	88	1995	1996	88	1		1.1	2039	44	3%	1.76	2.0
Roads and Trails	93	2008	96	1998	1998	96			1.2	2039	42	7%	2.92	3.6
Walking Tracks	6	2008	6	1983	1996	6			0.1	2039	44	3%	1.76	0.1
Walking Tracks	71	2008	73	1989	1996	73			1.0	2039	44	3%	1.76	1.7
Walking Tracks	29	2008	30	1995	1996	30			0.4	2039	44	3%	1.76	0.7
Walking Tracks	24	2008	25	2000	2000	25			0.3	2039	40	7%	2.80	0.9
Walking Tracks	130	2008	133	2001	2001	133			1.7	2039	39	7%	2.75	4.8
Walking Tracks	20	2008	21	2002	2002	21	ļ		0.3	2039	38	7%	2.69	0.7
Walking Tracks	120	2008	124	2003	2003	124			1.6	2039	37	7%	2.64	4.2
Buildings/Amenities	6	2008	6	1983	1996	6	ļ		0.1	2039	44	3%	1.76	0.1
Buildings/Amenities	33	2008	34	1989	1996	34	ļ		0.4	2039	44	3%	1.76	0.8
Buildings/Amenities	8	2008	8	1995	1996	8			0.1	2039	44	3%	1.76	0.2
Buildings/Amenities	21	2008	22	2000	2000	22			0.3	2039	40	7%	2.80	0.8
Benches and seats	4	2008	4	1995	1996	4			0.1	2039	44	3%	1.76	0.1
Benches and seats	30	2008	31	2001	2001	31			0.4	2039	39	7%	2.75	1.1
Benches and seats	13	2008	13	2003	2003	13			0.2	2039	37	7%	2.64	0.5
Benches and seats	8	2008	8	2006	2006	8			0.1	2039	34	7%	2.47	0.2
Bins	1	2008	1	1998	1998	1			0.0	2039	42	7%	2.92	0.0
Bins	3	2008	3	2001	2001	3			0.0	2039	39	7%	2.75	0.1
Bins	1	2008	1	2003	2003	1			0.0	2039	37	7%	2.64	0.0
Bins	0	2008	0	2006	2006	0			0.0	2039	34	7%	2.47	0.0
Board Walk	69	2008	71	2003	2003	71			0.9	2039	37	7%	2.64	2.4
Board Walk	15	2008	15	2006	2006	15			0.2	2039	34	7%	2.47	
Bollards	0	2008 2008	0	2001 2003	2001 2003	0			0.0	2039 2039	39 37	7%	2.75 2.64	0.0
Bollards	0	2008	0	2003	2003	0			0.0	2039	34	7% 7%	2.64	0.0
Closed trail gate	3	2008	3	1992	1996	3			0.0	2039	44	3%	1.76	0.0
Closed trail gate	6	2008	6	1992	1990	6			0.0	2039	44	7%	2.98	0.1
Closed trail gate	12	2008	12	2001	2001	12			0.1	2039	39	7%	2.75	0.4
Educational	14	2008	14	2001	2001	14			0.2	2039	39	7%	2.75	0.5
Educational	91	2008	94	2003	2003	94			1.2	2039	37	7%	2.64	3.2
Educational	4	2008	4	2006	2006	4			0.0	2039	34	7%	2.47	0.1
Fireplace	1	2008	1	1995	1996	1			0.0	2039	44	3%	1.76	0.0
Fireplace	1	2008	1	1998	1998	1			0.0	2039	42	7%	2.92	0.0
Formed steps	1	2008	1	1989	1996	1			0.0	2039	44	3%	1.76	0.0
Formed steps	3	2008	3	1995	1996	3			0.0	2039	44	3%	1.76	0.1
Information	4	2008	4	1995	1996	4	1		0.1	2039	44	3%	1.76	0.1
Information	14	2008	14	1998	1998	14			0.2	2039	42	7%	2.92	0.5
Information	17	2008	18	2001	2001	18			0.2	2039	39	7%	2.75	0.6
Information	14	2008	15	2003	2003	15			0.2	2039	37	7%	2.64	0.5
Information	7	2008	7	2006	2006	7			0.1	2039	34	7%	2.47	0.2
Locked gate	1	2008	1	1992	1996	1			0.0	2039	44	3%	1.76	0.0
Locked gate	4	2008	4	2001	2001	4			0.0	2039	39	7%	2.75	0.1
Locked gate	4	2008	5	2006	2006	5	ļ		0.1	2039	34	7%	2.47	0.1
Log fence	0	2008	0	1992	1996	0			0.0	2039	44	3%	1.76	0.0
Picnic shelters	195	2008	201	1985	1996	201	ļ		2.6	2039	44	3%	1.76	4.6
post line fence	0	2008	0	2001	2001	0	ļ		0.0	2039	39	7%	2.75	0.0
Ramp-Grid	0	2008	0	1992	1996	0			0.0	2039	44	3%	1.76	0.0
Regulatory	1	2008	1	1995	1996	1			0.0	2039	44	3%	1.76	0.0
Regulatory	1	2008	1	1998	1998	1			0.0	2039	42	7%	2.92	0.0
Regulatory	1	2008	1	2001	2001	1			0.0	2039	39	7%	2.75	0.0
Regulatory	5	2008	5	2003	2003	5			0.1	2039	37	7%	2.64	0.2
Regulatory	13	2008	13	2006	2006	13			0.2	2039	34	7%	2.47	0.4
Swings	2	2008	2	2001	2001	2			0.0	2039	39	7%	2.75	0.1
Swings	2	2008	2	2003	2003	2			0.0	2039	37	7%	2.64	0.1
Tap - Potable Tap - Potable	5	2008	5	1995 2001	1996	5			0.1	2039	44	3%	1.76	0.1
	5		5	2001	2001	5			0.1	2039	39	7%	2.75	
Tap - Potable	2	2008	2		2003	2			0.0	2039	37	7%	2.64	0.1
Toilets Water took	2	2008	2	1995 2001	1996	2	+		0.0	2039	44 39	3%	1.76	0.0
Water tank	434	2008	1		2001	434	<u> </u>		0.0	2039		7% 7%	2.75	
2009 Catchment Assets Management	434	2009	434	2009	2009	434			5.6	2039	31	1%	2.31	13.0
Future Catchment Assets WRS Catchment Assets	74	2009	74	2010	2010	69	+		0.9	2039	30	7%	2.26	2.1
WRS Catchment Assets	74	2009	74	2010	2010	65			0.9	2039	29	7%	2.26	1.9
TTTO OUTOINITOIIL ABBELS	/4	2009	1 /4	2011	2011	1 00	1		1 0.9	2003	23	1 70	L 2.21	1.3

Rous Water Bulk Water Supply Scheme														
Capital Charge Calculation					Summarv								1	
Pre 1996 discount rate	3%				per ET		т	otal					+	
Post 1996 discount rate	7%				Capital char	de		,119	2008/09\$ p	er ET			1	
Peak day demand (L/ET/d)	2.500				oupliai olla	30	Ç.		2000/000 p	1			+	
Asset	Capital cost	Year dollars ²	Capital Cost	Year commiss-	Effective	Present	Capacity	Capacity	Capital	Year of	Years to	Discount	ROI factor	Capital
	(\$'000) ¹	real dollars	(\$'000, 2009\$) ³	ioned	year	value 2009		(ETs)	cost	full take-	full take-	Rate		Charge (\$/ET)
	(\$ 000)		(\$ 000, 2003\$)		commiss-	(\$'000)4	()	(=:=)	(\$/ET)	up	up			g= (+-=- /
					ioned	(\$ 000)			(**=*)					
WRS Catchment Assets	74	2009	74	2012	2012	60			0.8	2039	28	7%	2.16	1.7
WRS Catchment Assets	105	2009	105	2013	2013	80			1.1	2039	27	7%	2.11	2.2
WRS Catchment Assets	220	2009	220	2014	2014	157			2.1	2039	26	7%	2.05	4.2
WRS Catchment Assets	125	2009	125	2015	2015	83			1.1	2039	25	7%	2.00	2.2
WRS Catchment Assets	125	2009	125	2016	2016	78			1.0	2039	24	7%	1.96	2.0
WRS Catchment Assets	125	2009	125	2017	2017	73			1.0	2039	23	7%	1.91	1.8
WRS Catchment Assets	110	2009	110	2018	2018	60			0.8	2039	22	7%	1.86	1.5
WRS Catchment Assets	110	2009	110	2019	2019	56			0.7	2039	21	7%	1.81	1.3
WRS Catchment Assets	100	2009	100	2020	2020	48			0.6	2039	20	7%	1.76	1.1
WRS Catchment Assets	100	2009	100	2021	2021	44			0.6	2039	19	7%	1.72	1.0
WRS Catchment Assets	100	2009	100	2022	2022	41			0.5	2039	18	7%	1.67	0.9
WRS Catchment Assets	100	2009	100	2023	2023	39			0.5	2039	17	7%	1.63	0.8
WRS Catchment Assets	100	2009	100	2024	2024	36			0.5	2039	16	7%	1.58	0.8
WRS Catchment Assets	100	2009	100	2025	2025	34			0.4	2039	15	7%	1.54	0.7
WRS Catchment Assets	100	2009	100	2026	2026	32			0.4	2039	14	7%	1.50	0.6
WRS Catchment Assets	100	2009	100	2027	2027	30			0.4	2039	13	7%	1.45	0.6
WRS Catchment Assets	100	2009	100	2028	2028	28			0.4	2039	12	7%	1.41	0.5
WRS Catchment Assets	100	2009	100	2029	2029	26			0.3	2039	11	7%	1.37	0.5
WRS Catchment Assets	100	2009	100	2030	2030	24			0.3	2039	10	7%	1.33	0.4
WRS Catchment Assets	100	2009	100	2031	2031	23			0.3	2039	9	7%	1.29	0.4
WRS Catchment Assets	100	2009	100	2032	2032	21			0.3	2039	8	7%	1.25	0.3
WRS Catchment Assets	100	2009	100	2033	2033	20			0.3	2039	7	7%	1.21	0.3
WRS Catchment Assets	100	2009	100	2034	2034	18			0.2	2039	6	7%	1.18	0.3
WRS Catchment Assets	100	2009	100	2035	2035	17			0.2	2039	5	7%	1.14	0.3
WRS Catchment Assets	100	2009	100	2036	2036	16			0.2	2039	4	7%	1.10	0.2
WRS Catchment Assets	100	2009	100	2037	2037	15			0.2	2039	3	7%	1.07	0.2
WRS Catchment Assets	100	2009	100	2038	2038	14			0.2	2039	2	7%	1.03	0.2
WRS Catchment Assets	100	2009	100	2039	2039	13			0.2	2039	1	7%	1.00	0.2
Total Catchment Assets	4,924					3,142		76,000	41					86
						L								L
Notes						L							ļ	
1. Capital cost from Council's asset registers and MEERA cost for future works													ļ	
2. Base year of capital cost varies depending on asset data													L	
3. Capital cost adjusted to 2009\$ using CPI for Sydney (ABS)						ļ								ļ
 Capital cost of future works discounted to 2009\$ 	1					1								

Reduction Amount – Rous Water - Water Supply

The Reduction Amount is calculated for the whole of the Rous Water supply as Rous Water operates a single water supply fund for its bulk supply and retail services.

The calculation uses the weighted average (by growth) capital charge for the bulk supply and retail services to represent the income from all developments (excluding reduction amount). Retail customers are required to contribute the bulk and retail developer charges. Refer to the Development Servicing Plan for Retail Water Supply Services (2009) for calculations relating to the Retail developer charges.

Component	Capital Charge (\$/ET)	Growth (ET)	Weighted Income	Weighted Capital Charge (per ET)
Bulk Supply	\$9,119	21,000	\$191,498,774	
Retail	\$14,113	882	\$12,447,670	
Total		21,882	\$203,946,444	\$9,320

The Reduction Amount calculation also requires input of debt and cash and investments, number of assessments served, renewal works and works to improve standards for the fund. Capital works are the total of the Bulk Supply and Retail Services components. The Reduction Amount calculation and the Retail Services capital works program are attached.

Calculation of Developer Charges using the Direct NPV Method

Rous Water - Water Supply

Year 1		clude borrow			uding sinking	fund etc.																									
Assessments at year e Year No. Year Residential (including backlog works) Non-residential	0 2008/09 2	009/10 2	2010/11		2012/13							11 2019/20 2 63,169		2021/22 2			024/25 20		026/27 20		028/29 2	2029/30 2			24 2032/33 72,834		26 2034/35 73,985				30 2038/39 76,000
ET per Residential assessment ET per non-residential assessment Capacity for future customers (ET)	-													I															I		
Capital works Brave year Year Renewals (2008/000) Inflation from 2008/010 to 2009/10 (%) Capital Works for Improved standards (2008/005/000) Government Grant on Works for Improved standards (2008/010 (%) Inflation from 2008/01 to 2004/10 (%) Last year of the program	3.00%	4,689 603	2010/11 1,586 465	1,846	2012/13 2,388 1,419	2,003	1,810	2015/16 3,252 440	1,884	1,704	1,910	2019/20 2 2,054 410	2020/21 2,330 360	2021/22 2 852 385	2022/23 2,851 360	2023/24 2 3,947 360	3,790 3,790 385	25/26 2 2,539 360	026/27 20 3,577 360	027/28 20 1,667 385	3,020 3,020 360	2029/30 2 2,441 360	030/31 2 1,861 385	2031/32 681 360	2032/33 2,585 360	2033/34 5,871 385	2034/35 4,127 360	2035/36 4,950 360	2036/37 2 7,358 385	037/38 2 4,468 360	2038/39 3,227 360
PV of ET Total equivalent terementa (ET) PV of 50 years of grown (ET) PV of 50 years of grown (ET)		55,000 866 10,350 64,483	55,873 873	56,760 887	57,524 764	58,298 774	59,083 785	59,878 795	60,684 806	61,501 817	62,329 828	63,169 839	64,019 850	64,881 862	65,584 703	66,295 711	67,013 718	67,739 726	68,473 734	69,215 742	69,965 750	70,723 758	71,490 766	72,264 775	72,834 569	73,407 574	73,985 578	74,568 583	75,155 587	75,747 592	76,00 25
PV of renewal works Year No. Renewals (\$000) in 2009/103 PV of 50 year of renewals at discount rate of 7% pa PV Renewals per ET (\$)		1 1,633 39,079 606	2 1,901	3 2,460	4 2,063	5 1,864	6 3,349	7 1,940			10 2,116	11 2,400	12 878	13 2,937	14 4,065	15 3,904	16 2,615	17 3,684	18 1,717	19 3,111	20 2,514	21 1,917	22 701	23 2,663	24 6,047	25 4,251	26 5,099	27 7,579	28 4,602	29 3,324	3 2,06
PV of Works for improved Standards to existing population Vear No. Works for Improved Standards (\$000) in 2009/105 after Government grant PV of works for Improved Standards at discount rate of 7% pa PV Standards per ET (\$)		1 -142 7,019 109	2 474	3 1,462	4 1,695	5 731	6 453	7 422	8 422	9 464	10 422	11 371	12 397	13 371	14 371	15 397	16 371	17 371	18 397	19 371	20 371	21 397	22 371	23 371	24 397	25 371	26 371	27 397	28 371	29 371	3
Performance PV Renewals per ET + PV Standards per ET (1) PV Renewals per ET + PV Standards per ET (2) Capital Charge - {[N(N-F)] * [Capital Charge - PV Renewals per ET + Net Det per T]] - PV Standards per ET - Net Det per T]] here: Capital Charge =	715 1,178 9,320 64,483 0 464		D	-	harge Calcul: Reduction A		herefore		\$1,178																						

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
2039/40 76.000	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49 76,000	2049/50	2050/51	2051/52	2052/53	2053/54 76,000	2054/55	2055/56	2056/57	2057/58 76,000	2058/59 76,00
2039/40	2040/41	2041/42	2042/43	2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55	2055/56	2056/57	2057/58	2058/59
2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2053/54	2,000	2,000	2,000	2,000	2058/59
76,000 0		76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,000	76,000 0	76,000 0	76,000 0	76,000 0	76,000 0	76,0
	0																		76,0

Rous Capita	Water al Works Program	Retail																																	
All value	es are in year 2008/09 \$'000		Type of work		.			2	1	F	6	7	0		10	11	10	10	44	45	10	47	40	10	20	24	22	22	24		26	07		20	
Area	Project				30 year total	2000/10	2010/11	3	4	0 2012/14	0	2015/16	0	9	10	11	12	13	14	15	10	17	10	19	20	21	22	23	24	25 2033/34	26	27 2035/36	20	29	2028/20
		Assets	Renewals	LOS	So year totar	2003/10	2010/11	2011/12	2012/13	2013/14	2014/13	2013/10	2010/11	2017/10	2010/13	2013/20	2020/21	2021/22	2022/25	2023/24	2024/23	2023/20	2020/21	2021120	2020/23	2023/30	2030/31	2031/32	2002/00	2000/04	2004/00	2000/00	2030/37	2031/30	2030/33
Distribut	tion System	7100010	1	200	I																											ł			
Retail	Coraki 225 (Sheehans to Riverbank Rd)		100%	1	500			1	1	1		250	250	1								1							1	<u> </u>					
Retail	Newrybar 150mm		100%		2.600							200	200							2600												t	·+		
Retail	Ewingsdale 200mm replacement		100%		214															2000		214										t	+		·
Retail	Tintenbar 150		100%		2.300																2300	2										t	·+		
Retail	Hyrama Cres		100%		72																72											t	·+		
Retail	Baxters Lane Pump Station		100%		28								28																				·+		ı ———
Retail	Glenross Drv		100%	1	163		1	1	1	1				1								163								1		t	+		·
Retail	Newrybar village 100mm	1	100%	1	127																	127								+		t	+		·
Retail	Baxters Lane - replace suction & pressure line		100%		27																	27													
Retail	Sth Gundurima tank - Road Runner caravan park		100%		5				5																								·+		ı ———
Retail	Bexhill Village upgrade	100%			1,390								200	500	690																		+		
Retail	Richmond Hill - replace 80mm with 100mm	40%	60%		177																	177											+		
Retail	McLeish Rd		100%		94																	94													
Retail	Eureka Village		100%		50																	50													
Retail	Sth. Gundurimba Village		100%		40																	40											+		
Retail	Bencluna Rd - Eureka		100%		240																	240											+		
Retail	Grace Rd & Julieanne - Bexhill		100%		280																								280			1	1		1
Retail	Richmond Hill reticulation replacement		100%		836																										836	1	1		1
Retail	Bridge and Emily St Wyrallah		100%		96																										96	1	1		1
Retail	Minor reticulation program			100%	600	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Retail	Ewingsdale mains replacement program		100%		1,450																								450		1000	1	1		1
Retail	Pacific Highway Mullumbimby		100%		130																										130	1	1		1
Retail	Grays & Prestons Lane replacement		100%		294																											1	1	294	1
Retail	Avocado Cres replacement		100%		104																												· · · · · ·	104	1
Retail	Rural services replacement program		100%		1,050										50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Retail	Gundurimba 80mm replacement with 100mm	40%	60%		453							453																				1	1		1
Retail	Newrybar Reservoir - roof replacement		100%		30						30																								
Retail	Tullera Reservoir - roof replacement		100%		80								80																						
Retail	Knockrow Reservoir PS	90%	10%		475		475																	•								1			·
Retail	Tintenbar Reservoir- roof replacement		100%		47																			47											·
Totals		-			13,952	20	495	20	25	20	50	723	578	520	760	70	70	70	70	2.670	2.442	1.202	70	117	70	70	70	70	800	70	2.132	70	70	468	70
Other Ne	ew System Assets (growth works)				2,070		428					181	200	500	690	-	-			1	, .=	71								<u> </u>					<u> </u>
Renewal					11,283		48	1	5	1	30	522	358		50	50	50	50	50	2,650	2,422		50	97	50	50	50	50	780	50	2.112	50	50	448	50
Improve					600	20		20		20	20		20	20	20	20		20	20	2,000	20		20		20				20	20		20			20