TRANSPARENCY STATEMENT – PART A

2010-11 POTABLE WATER AND SEWERAGE PRICES

SOUTH AUSTRALIA

Government of South Australia

May 2010

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OVERVIEW

This Transparency Statement on the 2010-11 potable water and sewerage prices in South Australia continues to provide transparency by documenting and reporting on the matters considered by the Government in making its water and sewerage pricing decisions.

The Government continues to improve water security by expansion of the Adelaide Desalination Plant to 100Gl, improving network infrastructure, water purchases and rebates for water saving products. The investment in these significant initiatives and the ongoing provision of water and sewerage services are funded through prices and community service obligations. This is consistent with the Government's obligations under the National Water Initiative. These investments were a major influence on the Government's 2010-11 pricing decision.

Taking into account economic efficiency, equity, social justice and regional policies, customer impacts, and the recently released National Water Initiative Pricing Principles, the Government announced that potable water charges would rise by 21.7% on average in real terms in 2010-11.

The Government also announced that metropolitan sewerage charges will increase by 0.8% on average in real terms in 2010-11. Regional wastewater charges will increase by 1.3% in real terms in 2010-11, to achieve over time similar average sewerage bills in country regions in comparison to the metropolitan area. Further details of the Government's pricing decision are included in Chapter 2.

The Government will refer this 2010-11 Transparency Statement (Part A) to the Essential Services Commission of South Australia to assist it in undertaking an independent inquiry into the Government's pricing processes.

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ABBREVIATIONS

ADP	Adelaide Desalination Plant
COAG	Council of Australian Governments
CSO	community service obligation
DWLBC	Department of Water, Land and Biodiversity Conservation
EPA	Environment Protection Authority
ESCOSA	Essential Services Commission of South Australia
GFFCR	go forward full cost recovery
GL	gigalitre
kL	kilolitre (1000 litres)
LRMC	long run marginal cost
ML	megalitre
n.a.	not available
NCC	National Competition Council
NPR	National Performance Report
NRM	Natural Resources Management
NWC	National Water Commission
NWI	National Water Initiative
OMA	operating, maintenance and administrative
pa	per annum
RAB	regulatory asset base
RMIP	River Murray Improvement Program
SA Water	South Australian Water Corporation
TBD	to be determined
URB	upper revenue bound
WACC	weighted average cost of capital
WPA	Water Proofing Adelaide
WSAA	Water Services Association of Australia

1 Introduction

1.1 Purpose

The Transparency Statement documents the South Australian Government's 2010-11 potable water and sewerage pricing decision. It aims to:

- continue to provide transparency around the setting of SA Water's potable water and sewerage prices by the Government.
- document the process involved in setting SA Water's potable water and sewerage prices by the Government for 2010-11.
- demonstrate that the Government's pricing decision is consistent with the National Water Initiative (NWI) Pricing Principles.
- assist the Essential Services Commission of South Australia (ESCOSA) in its independent inquiry into the Government's 2010-11 potable water and sewerage pricing process.

The price of non-potable water supplied in accordance with agreements under section 37 of the *Waterworks Act 1932* (e.g. recycled water at Mawson Lakes), or under the *Water Conservation Act 1936* (e.g. Terowie) is not discussed in this Transparency Statement.

Additional copies of this document can be downloaded from the Department of Treasury and Finance's website at www.treasury.sa.gov.au.

1.2 Structure of report

The Transparency Statement is made up of three separate documents, known as parts A, B and C. This report forms Part A. Part B will be ESCOSA's Final Report on its independent inquiry into price setting processes referred to ESCOSA by the Treasurer. Part C will be the Government's response to ESCOSA's Final Report. The Transparency Statement will be tabled in both Houses of Parliament to satisfy the requirements of the *Essential Services Commission Act 2002.*

The structure for Transparency Statement Part A is:

- Chapter 2 provides an overview of the pricing decision announced on 3 December 2009, the impacts of this decision on customers, and available concessions.
- Chapter 3 outlines the national policy context, including the NWI Pricing Principles, which the Government adopted in setting SA Water's potable water and sewerage prices for 2010-11.
- Chapter 4 deals with the legislative and operating context of SA Water and its consistency the NWI Pricing Principles.
- Chapter 5 assesses SA Water's performance in terms of its operations, financial performance and efficiency.
- Chapter 6 reports on the application of the NWI Pricing Principles to the revenue requirement, detailing each component, and the proposed revenue path.

- Chapter 7 explores the application of the NWI Pricing Principles to efficient resource pricing.

2 Pricing Decision

This chapter outlines:

- the South Australian Government's 2010-11 pricing decision for SA Water's potable water and sewerage services.
- the customer impacts of the 2010-11 pricing decision.
- concessions available to customers.

2.1 Pricing decision

On 3 December 2009, the South Australian Government announced water and sewerage price increases for 2010-11. For SA Water customers, on 1 July 2010:

- potable water prices rose by 21.7% on average in real terms.
- metropolitan sewerage charges rose by 0.8% and country sewerage charges rose by 1.3%, on average in real terms.

The potable water price increase reflects the Government's commitment to South Australia's future water security by the expansion of the capacity of the Adelaide Desalination Plant to 100Gl per year and previously approved water security measures. In 2008, the Government foreshadowed significant increases in water prices over the subsequent five years to finance vital water security measures, including:

- the Adelaide Desalination Plant (ADP).
- the Network Water Security Program (to improve connectivity between the northern and southern metropolitan water supply systems).
- River Murray water purchases (to ensure minimum required volume of water for critical human needs in South Australia).
- rebates (to encourage the public to buy water conserving products).

2.1.1 Potable water

The Government approved an increase in potable water prices in 2010-11 of 21.7% in real terms, on average. The new prices are to apply for water consumed during the 2010-11 financial year and will be charged typically on a quarterly basis to SA Water customers.

The price structures for residential, industrial and commercial customers are outlined below. These prices were gazetted in the South Australian Government Gazette on 4 December 2009. The commercial water property rate will be gazetted on or before 31 July 2010. The rationale for the structure of water prices is discussed in more detail in Chapter 7.

Residential

Residential water prices comprise a fixed service availability charge (or supply charge), and a three tier usage charge. The new prices for residential customers are provided in Table 1 below. The third tier only applies to single dwellings with a separate water meter (i.e. it does not apply to blocks of flats that have only one water meter).

Table 1: 2010-11 Water prices for residential water customers

Component	2009-10	2010-11
Water Service Availability	$137.60	$142.40
Water Usage		
- Tier 1 (0- 30 kL per quarter)	$0.97	$1.28/Kl
- Tier 2 (30-130 kL per quarter)	$1.88	$2.48/Kl
- Tier 3* (>130 kL per quarter)	$2.26	$2.98/Kl

Notes: *for single residential dwellings only.

Source: SA Water

Non-residential

SA Water has two categories of non-residential customers:

- commercial customers, including retail, wholesale, finance and insurance.
- other non-residential customers, including industrial and rural customers, hospitals and hotels.

The water price structure for commercial customers comprises a service availability charge, based on a property value, and a two tier water usage charge. These two tiers are the same as the first two tiers adopted for residential customers, described above.

The price structure for commercial customers is outlined in Table 2 below. Note the actual property rate is not available until July 2010 after revised property values are released.

Table 2: 2010-11 Water prices for commercial water customers

Component	2009-10	2010-11
Water Service Availability		
Property rate	0.0768%	TBD
Minimum	$174.60	$180.80
Water Usage		
- Tier 1 (0- 30 kL per quarter)	$0.97	$1.28/Kl
- Tier 2 (>30 kL per quarter)	$1.88	$2.48/Kl

Source: SA Water

Other non-residential customers have a fixed service availability charge and the same two tier usage charge as commercial customers. The price structure for other non-residential customers is outlined in Table 3 on the following page.

Table 3: 2010-11 Water prices for other non-residential water customers

Component	2009-10	2010-11
Water Service Availability	$174.60	$180.80
Water Usage		
- Tier 1 (0- 30 kL per quarter)	$0.97	$1.28/Kl
- Tier 2 (>30 kL per quarter)	$1.88	$2.48/Kl

Source: SA Water

2.1.2 Sewerage

Sewerage charges are based on a customer's property value, subject to a minimum charge.

The Government approved an increase in property based sewerage charges of 0.8% for metropolitan customers and 1.3% for country customers on average in real terms, with actual rates to be fixed by 31 July 2010. The slightly higher increase for country sewerage charges is designed to reduce the gap between the average country customer's charge and the average sewerage charge in the metropolitan area.

The minimum charge for 2010-11 will increase to $308 per year.

Sewerage rates to apply in 2010-11 will be gazetted around July 2010, when revised property values are available.

2.2 Customer impacts

The increase in potable water prices required to finance South Australia's water security investments is having a significant impact on customers in recent years. On the other hand, the impact of the increase in sewerage charges is relatively less. This section explores the customer impacts of the recent water and sewerage price increases.

2.2.1 Potable water

SA Water supplied an average of 190 kL of water per household in Adelaide in 2008-09. Based on this average, households would pay $469.60 in 2010-11 for their total water bill (i.e. including the service availability and water usage charges). This equates to an increase of about $84 per year, or about $1.62 per week.

Table 4 on the following page provides a comparison of annual residential water bills for households with varying water usage.

Table 4: Residential water bill comparisons

Annual use (single dwellings)	Annual water use charges	Annual service availability charge	Total annual water bill	Annual water use charges	Annual service availability charge	Total annual water bill	Difference per year	Difference per week
kL	2009-10			2010-11				
60	$58.20	$137.60	$195.80	$76.80	$142.40	$219.20	$23.40	$0.45
120	$116.40	$137.60	$254.00	$153.60	$142.40	$296.00	$42.00	$0.81
190	**$248.00**	**$137.60**	**$385.60**	**$327.20**	**$142.40**	**$469.60**	**$84.00**	**$1.62**
240	$342.00	$137.60	$479.60	$451.20	$142.40	$593.60	$114.00	$2.19
520	$868.40	$137.60	$1006.00	$1145.60	$142.40	$1288.00	$282.00	$5.42
700	$1275.20	$137.60	$1412.80	$1682.00	$142.40	$1824.40	$411.60	$7.92
1000	$1953.20	$137.60	$2090.80	$2576.00	$142.40	$2718.40	$627.60	$12.07

Source: SA Water

For commercial customers, water prices are expected to increase by 16.5%, on average in nominal terms. Eighty-four per cent of commercial customers are expected to experience an increase of less than or equal to $100 per year, while 96% are expected to experience an increase of less than or equal to $500 per year.

For other non-residential customers, water prices are expected to increase by 30.3%, on average in nominal terms. Sixty-six percent of other non-residential customers are expected to experience an increase of less than $100 per year, while 78% are expected to experience an increase of less than or equal to $500 per year.

2.2.2 Sewerage

Approximately 23% of metropolitan residential customers and 45% of residential country customers pay the minimum sewerage rate. This will rise by $10.00 per annum to $308 per annum.

Residential customers occupying the average metropolitan residential property ($364 000 as at June 2009) will pay an additional $15.00 per annum, or a total charge of $459 per annum.

Residential customers occupying the average country residential property ($244 000 as at June 2009) will pay an additional $15.00 per annum or a total charge of $382 per annum.

2.3 Concessions

Currently pensioners and Commonwealth Low-Income Health Care Card holders are assisted in adjusting to the new water prices with concessions of 20% of the total annual water bill, from a minimum of $95 to a maximum of $200. A $95 sewerage concession is also available.

In view of the significant increases in water charges required to finance South Australia's future water security, the Government announced on 17 February 2010 further enhancements to these concessions to assist specific vulnerable customers with the adjustment to higher water prices.

The maximum and minimum levels of the water concession will increase 5% from 1 July 2010, and a further 5% each year to the 2012-13 financial year. The sewerage concession will increase 5% from 1 July 2010, and a further 5% each year to the 2012-13 financial year.

Table 5: Concessions

	Current concession	Concession in 2010-11	Concession in 2012-13
Water (maximum, for tenants)	$160	$168	$185
Water (maximum, for owner occupier)	$200	$210	$232
Sewerage (maximum)	$95	$100	$110

Source: Department of Premier and Cabinet

2.4 Community service obligations

The Government assists customers in regional areas by providing SA Water with a community service obligation (CSO) to implement its statewide uniform pricing policy, under which regional customers pay the same water charges and similar sewerage charges as metropolitan customers. Further details of CSOs are outlined in section 6.9.

3 National Policy Context

This chapter outlines the national policy context, including the development of the National Water Initiative (NWI) Pricing Principles. It also describes the National Water Commission's (NWC) role in the implementation of NWI reforms and the national performance and reporting framework established under the NWI.

3.1 Council of Australian Governments

In February 1994, the Council of Australian Governments (COAG) endorsed the strategic framework for the efficient and sustainable reform of the Australian water industry. The 1994 COAG pricing principles included high level pricing principles about consumption based pricing, full cost recovery, and the treatment of cross subsidies and CSOs. Subsequently, in 1999, more detailed guidelines were approved which centred around two core principles of avoiding monopoly rents and maintaining the ongoing commercial viability of the utility.

Appendix 2: COAG Strategic Framework provides the relevant excerpts from the COAG Strategic Framework.

3.2 National Water Initiative

The NWI arose as part of the ongoing process of national water reform to improve the management of Australia's water resources. It builds on and incorporates the 1994 COAG strategic framework. The NWI represents a shared commitment by governments to increase the efficiency of Australia's water use, leading to greater certainty for investment and productivity, for rural and urban communities, and for the environment. It was signed by the Commonwealth and all state and territory governments.

Under the NWI, States and Territories are responsible for implementing the NWI actions within their respective jurisdictions, consistent with their implementation plans. The South Australian Government's strategy for implementing its obligations was set out in the *South Australian National Water Initiative Implementation Plan 2005*.

The South Australian Government's commitments under the NWI include pricing policies that are consistent across sectors and jurisdictions where entitlements are able to be traded, independent bodies to set or review prices, or price setting processes, and the development of a national performance reporting framework.

Consistent with the NWI, ESCOSA undertakes an independent inquiry into the extent to which the South Australian Government's price setting pricing process is consistent with NWI principles.

Appendix 3: National Water Initiative Clauses provides a copy of relevant clauses of the NWI.

3.3 National Water Initiative Pricing Principles

In 2007, the NWC undertook a stock take of nationwide pricing practices to identify any inconsistencies in pricing policies and to determine whether these inconsistencies would impede the achievement of the NWI outcomes.

A Steering Group was subsequently established to progress the development of consistent approaches to pricing. This resulted in the development of the NWI Pricing Principles, which consist of principles for:

- recovering capital expenditure
- setting urban water tariffs
- recovering the costs of water planning and management activities
- recycled water and stormwater use.

The South Australian Government adopted these pricing principles for its 2008-09 and 2009-10 pricing decisions. The Australian Government, in collaboration with State and Territory governments, recently released these NWI Pricing Principles together with a regulation impact statement for public consultation. These NWI Pricing Principles were endorsed by the Natural Resource Management Ministerial Council on 23 April 2010.

The South Australian Government's water pricing methodology for 2010-11 continued to adopt these NWI Pricing Principles. Chapters 6 and 7 describe the Government's application of these pricing principles in its pricing decision.

Appendix 4: NWI Pricing Principles provides a copy of the NWI Pricing Principles.

3.4 National Water Commission assessment

Under the NWI, the NWC was established as a Commonwealth statutory body to provide advice to COAG on national water issues and to assist in the implementation of the NWI.

As a component of managing the implementation of the NWI, the NWC undertakes an analysis every two years of each jurisdiction's progress in the implementation of its NWI actions and publicly reports this information in biennial assessments. The NWC released its First Biennial Assessment in October 2007, updated in February 2008, and its Second Biennial Assessment in September 2009.

The biennial assessments do not report on compliance, rather, they provide an assessment of whether actions undertaken by Governments to date are likely to lead to the outcomes and objectives of the NWI.

3.4.1 First Biennial Assessment and update

The First Biennial Assessment and the February 2008 update reported on South Australia's progress in implementing the NWI. The NWC's update concluded that across a number of pricing related areas, South Australia had made further progress.

3.4.2 Second Biennial Assessment

In its Second Biennial Assessment, the NWC found that South Australia was one of the jurisdictions that had demonstrated achievement of, or moving towards being consistent with, its obligations with regard to pricing under the NWI (i.e. achievement of lower-bound pricing and moving towards upper bound pricing for metropolitan water storage and delivery).

Although the NWC expressed some concern about progress towards nationally consistent urban water pricing policies, it acknowledged that the NWI Pricing Principles aim to remove this lack of consistency and would soon be endorsed (see section 3.3).

The NWC also recommended to COAG that more be done in some jurisdictions, including South Australia, to establish and put into operation independent economic regulation to improve the efficiency, accountability, national consistency and transparency of water pricing across Australia.

The NWC also made a submission to the 2008-09 inquiry that the Government should strengthen the role of ESCOSA in water price setting process.

Nevertheless, the NWC acknowledged that there was some progress in South Australia due to the Government's endorsement in June 2009 of the role of ESCOSA being extended to include independent economic regulation of the South Australia's monopoly water and sewerage services.

3.5 National Performance Report

Under the NWI, governments agreed to report independently, publicly and on an annual basis to facilitate benchmarking of pricing and service quality for urban water delivery agencies. The first National Performance Report (NPR) for 2005-06 was based on the National Performance and Reporting Framework, developed by the NWC, NWI parties and the Water Services Association of Australia (WSAA).

The NPR comprehensively reports on the performance of Australian water utilities. It is based on the principles of comparability, accuracy and consistency and is designed to be the central source of information relating to performance of major urban water utilities. The NPR:

- highlights the trends in the performance of each utility.
- enables comparisons between them.
- seeks to improve performance reporting by ensuring the definitions are consistent and the data accurate.

The NPR compares key indicators for utilities with greater than 10 000 connections, which includes SA Water's metropolitan Adelaide customers and regional customers in Whyalla and Mount Gambier.

The 2008-09 NPR, which is discussed in Chapter 5, was released in April 2010.

The NPR documents can be accessed from the NWC's website at www.nwc.gov.au.

4 SA Water's Operational Context

This chapter outlines the context established by the South Australian Parliament and Government within which SA Water operates. It describes the:

- legislative basis for fixing water prices and sewerage rates.
- capital planning, approval and procurement arrangements.
- operating expenditure scrutiny, approval and procurement arrangements.
- water price and sewerage rates determination methodology.

This chapter will demonstrate that these arrangements together support compliance with the NWI Pricing Principles and COAG Strategic Framework.

4.1 Legislation

This section describes the legislative framework in relation to fixing water prices and sewerage rates under the following sections:

- water prices
- sewerage rates
- administrative arrangements.

4.1.1 Water prices

The water prices are fixed by the Minister for Water Security under part 5, section 65C of the *Waterworks Act 1932.* Section 65C states:

(1) The Minister may, after consultation with the Corporation, by notice in the Gazette, fix—

(a) the supply charge in respect of non-commercial land;
(b) the minimum supply charge in respect of commercial land;
(c) the rate to be applied to the capital value of commercial land in order to determine the supply charge in respect of that land;
(d) the water use charge or charges in respect of water supplied to land.

(2) A notice under subsection (1)—

(a) may fix different charges or rates under subsection (1)(a), (b), (c), or (d) in relation to different classes of land;
(b) may, in relation to all land or to a particular class of land, fix a series of water use charges that vary according to the volume of water supplied to the land over a specified period or periods;
(c) will have effect in relation to a financial year specified in the notice.

(3) Land may be classified for the purposes of subsection (2) by reference to one, or to a combination of two or more, of the following factors—

(a) whether the land is commercial, country or residential land or any other kind of land;
(b) the part of the State in which the land is situated;
(c) any other factor or factors.

The fixing of water prices are also subject to further principles and requirements outlined in Part 5 of the Act.

The 2010-11 pricing decision was subject to transitional provisions contained in Schedule 1 of the Act associated with the introduction of quarterly billing in 2009. These provisions required the 2010-11 pricing decision to be gazetted on or before 7 December 2009.

4.1.2 Sewerage rates

The sewerage rates are fixed by the Minister for Water Security under section 73 of the *Sewerage Act 1929.* Section 73 states:

(1) The Minister may, after consultation with the Corporation, by notice published in the Gazette, fix the scale or scales upon which sewerage rates to be levied in respect of land subject thereto within any drainage area or drainage areas shall be calculated.

(1a) A notice under subsection (1) will have effect in relation to a financial year specified in the notice.

(2) Sewerage rates shall be calculated, in accordance with the scale fixed under subsection (1) of this section, on the basis of determinations of the capital value of land subject thereto, in force under the Valuation of Land Act 1971, at the first day of the financial year to which the notice under subsection (1) relates.

(3) A determination of capital value shall be deemed to be in force at the time referred to in subsection (2) of this section if it is in force as at that time under the Valuation of Land Act 1971, whether the determination is actually made before or after that time.

(4) Where a determination of capital value, in force at the time referred to in subsection (2) of this section, is subsequently corrected or amended pursuant to the provisions of the Valuation of Land Act 1971 (whether in pursuance of an objection, review or appeal under that Act, or otherwise) the determination of value, as corrected or amended, shall be deemed to have been in force at the time referred to in subsection (2) of this section.

(5) The sewerage rates to be levied under this Act may be differential and may vary—

(a) according to the drainage area or portion thereof in which the land subject to the rates is situated; or

(b) according to whether the land is vacant land or not; or

(c) according to any other factor.

The sewerage rates fixed are also subject to other principles and requirements outlined in Part 6 of the *Sewerage Act 1929*.

4.1.3 Administrative arrangements

Following Westminster conventions, the power to fix prices and rates by the Minister for Water Security under the *Waterworks Act 1932* and the *Sewerage Act 1929* is only exercised by the Minister after receiving approval of Cabinet.

To receive approval of Cabinet, the Minister for Water Security submits to Cabinet a document recommending water prices and sewerage rates, with supporting documents to justify the recommendations. The details of this supporting information are further discussed in Chapters 6 and 7 of this document.

The Cabinet document represents the culmination of a number of Government processes relating to:

- capital planning, approval and procurement.
- operating expenditure scrutiny and approval.

- water price and sewerage rates determination methodology.

These processes are further discussed in the following sections.

4.2 Capital planning, approval and procurement

The capital planning, approval and procurement arrangements work towards delivering prudent and efficient capital expenditure. There are four stages to these arrangements. They are:

- SA Water's asset management and approval process.
- Government approval process for large projects recommended by SA Water.
- Parliamentary scrutiny of major projects approved by SA Water.
- Government procurement policies.

The following sections further describe these stages.

4.2.1 SA Water's asset management processes

SA Water has a formalised asset management framework through its corporate Asset Management Policy, which is approved periodically by the SA Water Board.

The Asset Management Policy governs the process through which the necessary infrastructure is created and managed to ensure that services to customers are provided reliably and efficiently over time.

More detail about SA Water's asset management arrangements is provided in Appendix 7.

SA Water's asset management decisions rely on:

- clear definition of expected customer service standards.
- adequate description of regulatory and other imposed operating environment constraints.
- sound risk management analysis.
- proper analysis of sustainability issues.
- whole of life analysis of installed assets covering planning, creation, operations, maintenance, renewal/replacement and disposal.
- well defined projections of growth in demand for services.

The outputs of the asset management process are well scoped asset management plans that detail the infrastructure related actions and investments necessary to manage the operating environment risk profile. Asset management translates a utility's operating environment into the maintenance and capital investment plans to be applied to its infrastructure assets.

The SA Water Board approved capital investment plan is submitted to the Government as part of the State Budget Process.

4.2.2 Government approval process for projects recommended by SA Water

SA Water is subject to the South Australian Government's financial management arrangements. Key legislative elements of the financial management arrangements include the:

- *Public Corporations Act 1993*
- *Public Finance and Audit Act 1987* and associated Treasurer's Instructions.

Pursuant to Treasurer's Instruction 17 issued under the *Public Finance and Audit Act 1987*, the Chief Executive of SA Water is required to:

- ensure that all public sector initiatives are evaluated in accordance with the evaluation framework detailed in *Guidelines for the Evaluation of Public Sector Initiatives*.
- ensure that proposed initiatives are clearly linked to and are consistent with strategic plans of the public authority, and that those plans underpin the authority's corporate objectives as directed by the Government.
- justify initiatives on economic grounds, and to specify the implications of a public sector initiative on the financial performance of the proponent public authority and on the State budget, when seeking approval to proceed with a public sector initiative.

As part of the State Budget Process, SA Water submits a proposed capital investment plan to the Government. The capital investment plan of SA Water is scrutinised and subject to the prioritisation process approved by Cabinet. It is documented in the State Budget Papers – Capital Investment Statement.

Under the Treasurer's Instruction 17, public sector initiatives require approval of either the Minister or Cabinet in relation to projects that exceed $1.1 million (GST inclusive) and by Cabinet only above $11.0 million (GST inclusive).

4.2.3 Parliamentary scrutiny

SA Water capital projects are also subject to scrutiny of the South Australian Parliament's Public Works Committee under the *Parliamentary Committees Act 1991.* Section 16A states that:

> *(1) Subject to subsection (3), a public work is referred to the Public Works Committee by force of this section if the total amount to be applied for the construction of the work will, when all stages of construction are complete, exceed $4 000 000.*
>
> *(2) No amount may be applied for the actual construction of a public work referred to in subsection (1) unless the work has first been inquired into by the Public Works Committee under this Act and the final report of that Committee on the work has been presented to its appointing House or published under section 17(7).*

The functions of the Public Works Committee pursuant to section 12C are:

> *(a) to inquire into, consider and report on any public work referred to it by or under this Act, including—*
>
> *(i) the stated purpose of the work;*
>
> *(ii) the necessity or advisability of constructing it;*
>
> *(iii) where the work purports to be of a revenue-producing character, the revenue that it might reasonably be expected to produce;*
>
> *(iv) the present and prospective public value of the work;*

(v) the recurrent or whole-of-life costs associated with the work, including costs arising out of financial arrangements;

(vi) the estimated net effect on the Consolidated Account or the funds of a statutory authority of the construction and proposed use of the work;

(vii) the efficiency and progress of construction of the work and the reasons for any expenditure beyond the estimated costs of its construction;

(b) to perform such other functions as are imposed on the Committee under this or any other Act or by resolution of both Houses.

While the Public Works Committee cannot prevent any of SA Water's capital project from proceeding, it does provide public scrutiny on the necessity and desirability of a project proceeding. It should be noted, that a work cannot commence until after the report has been presented to Parliament, or published.

4.2.4 Procurement

SA Water is a prescribed authority under the *State Procurement Act 2004* for the procurement purposes.

SA Water's Procurement Policy sets out the principles that apply to procurement activity throughout the Corporation. One of the key objectives of this policy is to ensure that SA Water's procurement activities optimise its commercial focus.

Two policy principles that support this objective are that SA Water adopts commercial practices to optimise the return for each dollar spent and potential suppliers are given equal opportunity to do business with SA Water to the maximum extent practicable.

Under-pinning this policy is a requirement to, wherever possible, seek competitive offers for procurements greater than $5,000.

4.2.5 Conclusion

SA Water is subject to extensive scrutiny to ensure that capital investment decisions are prudent and efficient. Scrutiny for major capital investment decisions involves the following:

- a formal SA Water Asset Management Policy and SA Water Board approval of SA Water's proposed capital investment plan.
- approval by Cabinet of SA Water's capital investment plan as part of the State Budget process.
- approval by Cabinet to proceed from concept to procurement.
- scrutiny by the Parliamentary Public Works Committee.
- a formal SA Water Procurement Policy.
- approval by Cabinet to execute a contract.

Conclusion 1

The financial management arrangements of the South Australian Government subjects SA Water's Capital Investment Plan to extensive Cabinet scrutiny of information prepared in accordance with Treasurer's Instructions. This promotes prudent and efficient capital expenditure by SA Water.

4.3 Operating expenditure scrutiny and approval

The operating expenditure scrutiny and approval arrangements promote efficient operating expenditure. Key legislative elements of the financial management arrangements include the:

- *Public Corporations Act 1993*
- *Public Finance and Audit Act 1987* and associated Treasurer's Instructions.

SA Water cannot receive appropriations directly from the consolidated account, rather it receives monies from government by way of CSOs, subsidies and grants. SA Water's procurement policies are discussed in section 4.2.4 and Appendix 7. SA Water is also subject to the disciplines of the State Budget, described below.

4.3.1 State Budget and Cabinet

The SA Water Board is required to prepare and submit to the Department of Treasury and Finance its operating budget for the next financial year and the forward estimates period. This information is collated as part of the State Budget process and is scrutinised and approved by Cabinet. The outcome of the State Budget process is captured and formally approved in the performance statement issued under section 13 of the *Public Corporations Act 1993*.

Throughout the year, SA Water's performance against budget is subject to scrutiny by the SA Water Board and the Department of Treasury and Finance. The Mid-Year Budget Review provides an opportunity for changed circumstances to be reflected in adjustments to SA Water's Budget. The Mid-Year Budget Review is a formal process whereby proposed changes to the budget are subject to scrutiny and formally approval by Cabinet.

4.3.2 Conclusion

SA Water is subject to extensive scrutiny in order to promote efficient operating expenditure. Scrutiny of operating expenditure involves the:

- State Budget process and associated Cabinet approval.
- Mid Year Budget Review and associated Cabinet approval.
- ongoing monitoring of budget performance by the SA Water Board and the Department of Treasury and Finance.

Conclusion 2

The financial management arrangements of the South Australian Government subjects SA Water's operating expenditure to extensive Cabinet scrutiny of information prepared in accordance with State Budget process, which is administered by the Department of Treasury and Finance. This promotes the efficiency of SA Water's operating expenditure.

4.4 Water price and sewerage rates determination methodology

In December 2009, the Minister for Water Security submitted to Cabinet options and recommendations for the 2010-11 metropolitan and regional water prices and sewerage rates. The submission was prepared in accordance with a methodology approved by Cabinet.

The following sections address:

- preparation of the water prices and sewerage rates determination methodology.
- application of the methodology.

4.4.1 Preparation of the methodology

Under the administrative arrangements adopted by the South Australian Government, the Treasurer has responsibility for preparing the water prices and sewerage rate determination methodology.

The approved methodology addresses the approach to setting urban water tariffs and key principles and assumptions for the calculation of SA Water's revenue requirement and associated revenue path, including:

- the valuation of assets.
- setting the rate of return on assets.
- the methodology for depreciating assets.
- setting community service obligations.

In approving this methodology, Cabinet considered:

- South Australian Government policies, such as statewide pricing.
- the national policy context and agreements set out Chapter 3.
- ESCOSA's 2009-10 Final Report on water prices and sewerage rates.

4.4.2 Application of the methodology

The Minister for Water Security's December 2009 Cabinet Submission is based on the Cabinet approved methodology. SA Water's modelling of revenue and prices and the Minister for Water Security's Cabinet Submission on water prices and sewerage rates for 2010-11, take into account:

- capital expenditure that has been subject to Cabinet scrutiny and approval.
- operating expenditure that has been subject to Cabinet scrutiny and approval.

- a methodology that complies with South Australia's obligations under national inter-governmental agreements.

Once the Cabinet Submission is approved, the Minster responsible for SA Water, using legislative power described in section 4.1 fixes the prices and rates.

Conclusion 3

The South Australian Government's 2010-11 pricing decision is based on prudent and efficient capital and operating expenditure and is calculated in a manner consistent with South Australia's obligations under national inter-governmental agreements.

The following chapters of this document provide information to support this conclusion by:

- examining SA Water's performance.
- describing how SA Water's revenue requirement has been calculated.
- describing how efficient resource pricing has been achieved for SA Water.

5 SA Water Performance

The NWI requires jurisdictions to report independently, publicly and on an annual basis, benchmarking of pricing and service quality for urban water and sewerage service providers (clause 75).

The National Performance Report (NPR) publicly and independently reports on the performance of water utilities and is published on the NWC's website. The Annual Efficiency Report provided as Appendix 7 provides further details of SA Water's performance.

This chapter examines SA Water's performance in accordance with the national performance reporting framework. SA Water's water and sewerage operations in metropolitan Adelaide, Whyalla and Mt Gambier are compared to relevant interstate utilities in terms of:

- water resources
- asset performance
- customer service
- health
- environment
- finance.

The benefits of benchmarking of SA Water's service performance and costs compared with interstate water utilities are limited due to different markets, different regional conditions and operating environments. Therefore, conclusions based on this data should be interpreted with care.

5.1 Water resources

5.1.1 Residential water supplied

The average annual water supplied to residential properties by large metropolitan water utilities is outlined in Table 6 on the following page.

Sydney Water and Gold Coast Water experienced increases in the average water supplied to residential properties from 2007-08 to 2008-09, due to higher storage levels and the easing of water restrictions in Queensland.

SA Water and the Melbourne water retailers all experienced a decrease in average residential water supplied. This has been attributed to a further reduction in Melbourne's water storages. In South Australia, the decrease in average residential water supplied has been attributed to continuing low inflows into the River Murray and ongoing water restrictions.

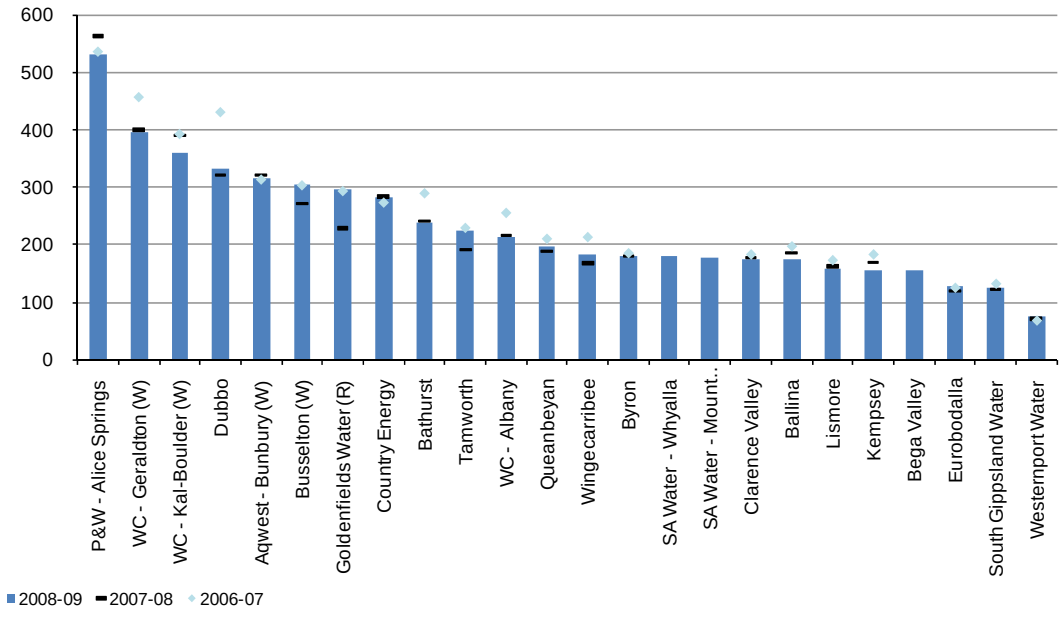
Table 6: Average annual residential water supplied (kL per property)

Utility	2003–04	2004-05	2005-06	2006-07	2007-08	2008-09
Sydney Water	224	211	203	199	182	198
Water Corporation - Perth	285	277	268	281	268	277
Yarra Valley Water	204	193	198	178	157	151
South East Water	186	184	187	167	152	143
SA Water Adelaide	245	235	233	235	194	190
Brisbane Water	258	264	185	153	128	133
City West Water	188	187	183	163	149	146
Gold Coast Water	198	244	200	183	149	166
Hunter Water	208	197	205	195	177	180
ACTEW	248	240	261	240	195	201
Barwon Water	218	206	216	169	156	156

Source: National Water Commission, 2008-09 National Performance Report

Figure 1 illustrates the average water supplied to residential properties by small regional water utilities. SA Water's operations in Mt Gambier and Whyalla have been included in this group for comparison for the first time in 2008-09.

Figure 1: Average annual residential water supplied (k/L per property)



Source: National Water Commission, 2008-09 National Performance Report

The average water supplied to residential properties in Mt Gambier and Whyalla is 178 kL per property and 180 kL per property, respectively. This is relatively low compared to other small regional utilities in Australia.

5.1.2 Recycled Water

Table 7 on the following page provides the total volume of recycled water supplied by large metropolitan retailers.

Table 7: Total recycled water supplied (ML) and recycled water (per cent of effluent recycled)

Utility	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
	Total recycled water supplied (ML)			Recycled water (% of effluent recycled)		
Sydney WC	21 129	24 163	25 442	4	4	5
WC – Perth	6 958	7 947	7 635	6	6	6
Yarra Valley Water	738	562	2 252	1	0	27
South East Water	2 961	2 569	5 118	3	2	30
SA Water – Adelaide	25 047	25 562	25 501	30	31	31
Brisbane Water	5 697	5 931	9 055	7	6	8
City West Water	0	73	539	0	0	3
Gold Coast Water	7 990	6 927	6 437	15	14	17
Hunter WC	4 060	4 471	5 092	5	6	8
ACTEW	2 104	3 789	4 207	7	12	14
Barwon Water	3 697	2 776	3 158	18	13	17
Melbourne Water[1]	61 062	61 984	60 285	22	23	23

Note 1: Melbourne Water is bulk water utility that treats sewage collected by the metropolitan retailers. The NWC has included it in this table to give a more accurate depiction of the recycled water supplied to Melbourne.

Source: NWC, 2008-09 National Performance Report

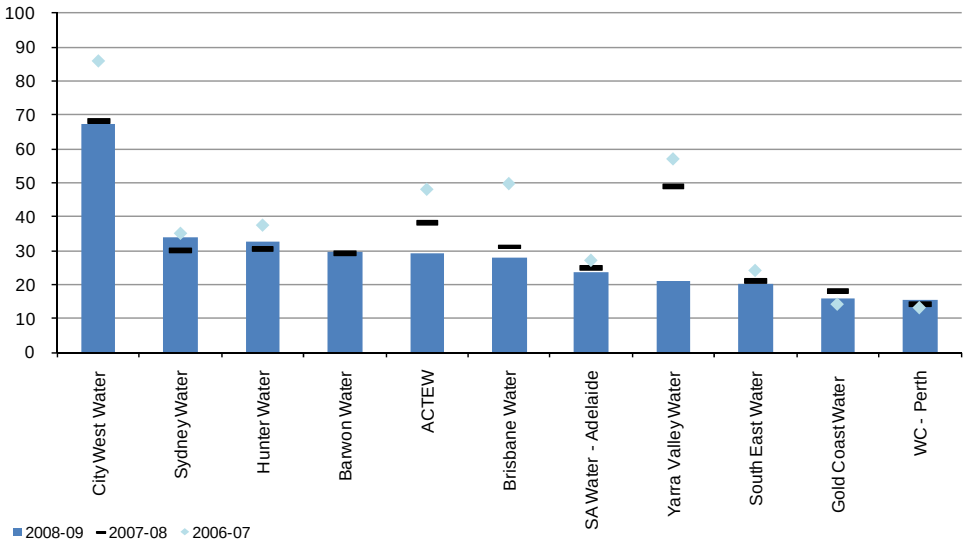
Of the large metropolitan retailers throughout Australia, SA Water produces the largest amount of recycled water and treats the highest percentage of sewage collected for use as recycled water. Nevertheless, Melbourne Water, a bulk water utility, treats a significant amount of the sewage collected from the three metropolitan retailers in Melbourne.

5.2 Asset performance

5.2.1 Water main breaks

Figure 2 and Figure 3 on the following page provide the total number of water main breaks, bursts and leaks in the distribution mains. Although it provides an indicator of customer service and the condition of water mains, this indicator may also be affected by differences in soil type, seasonal conditions and the age of the network.

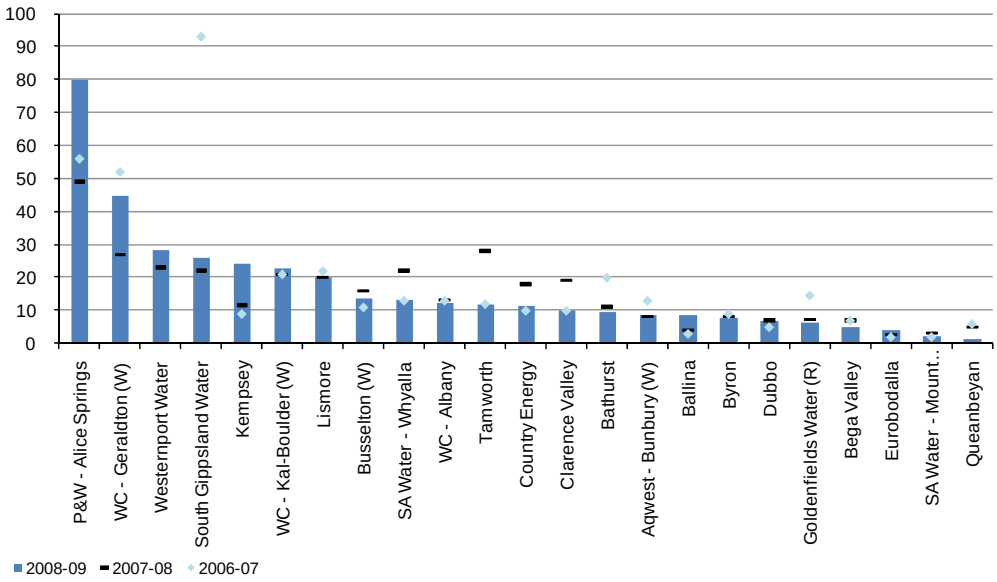
Figure 2: Water Main Breaks (per 100km of main)



Source: NWC, 2008-09 National Performance Report

Over the last three years SA Water has performed strongly for this indicator in the metropolitan area. Only three metropolitan utilities have consistently surpassed SA Water's performance.

Figure 3: Water Main Breaks (per 100km of main)



Source: NWC, 2008-09 National Performance Report

For its regional operations SA Water's performance against this indicator was mixed. In Mt Gambier, SA Water has very few water main breaks. On the other hand, in Whyalla, SA Water has a higher rate of water main breaks and experienced a significant increase in 2007-08. This has returned to more normal levels in 2008-09.

There is a strong correlation between water main breaks and dry seasonal conditions. Ground movement and soil types are two major causes of burst water mains. Soil types in Adelaide and Whyalla would increase the risk that seasonal changes in soil moisture affecting ground movement and pipe failure.

5.2.2 Sewer main break and chokes

Table 8 provides the number of sewer main breaks and chokes (i.e. partial or total blockages) in the metropolitan utility's sewerage system. Due to problems with comparability of this indicator for SA Water in the NPR, this data has been drawn from SA Water's Annual Efficiency Report. It does not include results for 2008-09.

Table 8 Sewerage main breaks and chokes (per 100km of main)

Utility	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Gold Coast Water						17.6
South East Water Ltd	16.6	18.1	15.3	16.4	21.3	20.7
Water Corporation	21.3	19.1	18	17.8	22.5	20.9
Brisbane Water	31.2	22.9	28	26.3	32	27.6
City West Water	35.1	31.8	28	27	27.2	28.6
Power & Water Corp – Darwin				36.6	34.1	30.2
Barwon Water	44.8	43.8	38.3	41	50.7	40.3
Yarra Valley Water			41.2	40.1	49.3	46.3
Hunter Water	67	64.1	68.4	58.1	63.4	50.2
SA Water	49.7	46.4	53.3	52.9	65.8	58.2
Sydney Water	83	73	82	87	90	64
ACTEW Corporation				157.4	166.4	166.9

Source: SA Water's 2009 Annual Efficiency Report

Although SA Water improved its performance in 2007-08, SA Water had more sewerage main breaks and chokes per 100 km of main than comparable metropolitan utilities, except Sydney Water and ACTEW Corporation. SA Water considers that this is due to Adelaide's reactive clay soils, seasonally dry conditions and clay pipes. Over 80% of sewer main breaks and chokes are attributed to tree root intrusion.

Table 9 on the following page, describes sewer main breaks and chokes in the sewerage system of selected regional utilities. This data series commenced in 2005-06.

SA Water's performance in Mt Gambier and Whyalla is better than the other selected regional utilities, and metropolitan Adelaide.

Table 9: Sewer main breaks and chokes

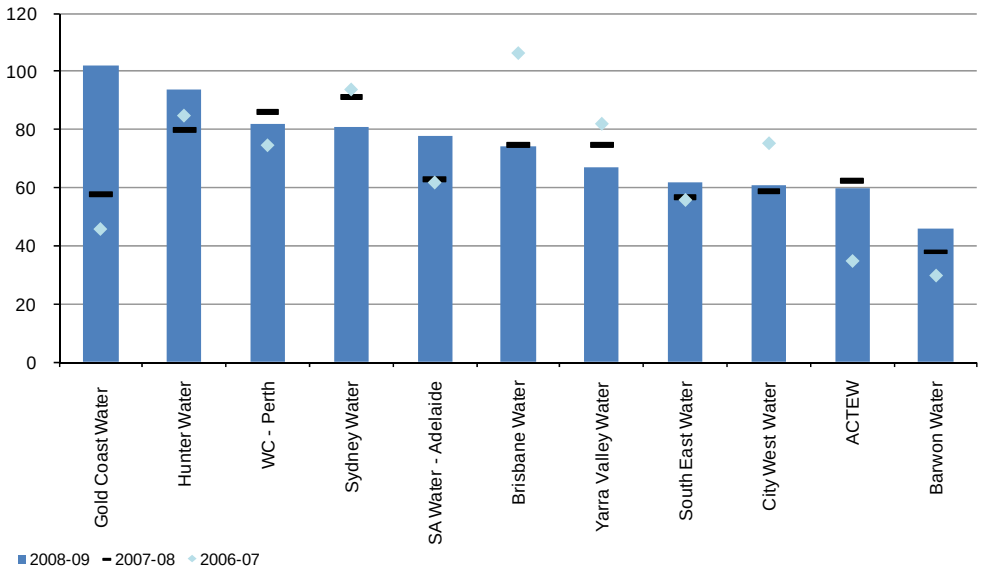
Utility	2005-06	2006-07	2007-08
SA Water - Mt Gambier	1.5	7.5	5.3
SA Water - Whyalla	4.8	22.8	10.1
South Gippsland Water	14	13.7	14.2
Byron Shire Council	34	23	15.1
East Gippsland Water	12.7	16.1	15.4
Power & Water Corp - Alice Springs	50.1	44.9	46.4
Country Energy	183	148	125.6

Source: SA Water's 2009 Annual Efficiency Report

5.2.3 Real losses

Figure 4 reports on real losses, or leakage and overflows from mains, service reservoirs and service connections before the customer meter. This indicator can be affected by the condition of mains, water pressure and water consumption.

Figure 4: Real losses (L per service connection per day)



Source: NWC, 2008-09 National Performance Report

SA Water's performance for its Adelaide operations is better than a number of other metropolitan water utilities, although it has deteriorated in 2008-09, compared to previous years.

5.3 Customer service

In its 2009 Annual Efficiency Report, SA Water reports that it has achieved a high level of service to both its metropolitan and regional customers in 2008-09, in relation to customer service indicators. Regional service levels achieved in 2008-09 have improved significantly when compared with the levels achieved in 2007-08.

Water restrictions and a new rebates program led to unprecedented levels of customer contact in 2008-09. During this period, the Customer Contact Centre relocated to Victoria Square and this combined with the increase of customer contacts, impacted on SA Water meeting some of its high internal customer targets.

Annual customer survey results reveal that overall customers are very satisfied with the levels of services provided by the Corporation. SA Water is aiming to further improve its customer services targets by 2013-14. SA Water's customer service targets are discussed in further detail in section 2.1 of Appendix 7: SA Water's Annual Efficiency Report.

SA Water is achieving a very high level of service to metropolitan and regional customers in water quality as reflected in compliance with the Australian Drinking Water Guidelines. This is despite the water quality challenges of generally poor source water quality and the current dry climatic conditions. These matters are discussed further in section 2.2 of Appendix 7: SA Water's Annual Efficiency Report.

As discussed in section 5.5, SA Water's performance in the metropolitan area relative to other water utilities has been strong in both microbiological compliance and water quality complaints.

The regional performance in microbiological compliance was strong relative to other water utilities. Whyalla reported a strong performance in water quality complaints, while Mt Gambier reported a poor result relative to previous years due to a change in source water for couple of months.

5.4 Environment

5.4.1 Sewer overflows reported to environmental regulator

Table 10 reports on sewer overflows that large metropolitan utilities have reported to the environmental regulator. This is a new indicator for the NPR.

Table 10: Sewer overflows reported to the environmental regulator (per 100 km of main)

Utility	2008-09
Sydney Water	0.11
WC – Perth	0.19
Yarra Valley Water	0.20
South East Water	0.10
SA Water - Adelaide	0.48
Brisbane Water	0.23
City West Water	0.40
Hunter Water	1.51
ACTEW	8.99
Barwon Water	0.40

Source: NWC, 2008-09 National Performance Report

SA Water's Adelaide operations reported a higher proportion of sewer overflows per 100km of main to the environmental regulator than a number of other metropolitan water utilities. This indicator may be affected by Adelaide's reactive soils and dry conditions impacting on mains.

Table 11 reports on sewer overflows that small regional utilities have reported to the environmental regulator.

Table 11: Sewer overflows reported to the environmental regulator

Utility	2008-09
Clarence Valley	0.61
Tamworth	0.00
Eurobodalla	5.12
South Gippsland Water	5.20
Wingecarribee	2.95
Dubbo	1.87
Orange	2.54
Queanbeyan	0.31
Westernport Water	0.00
WC – Albany	0.98
Bega Valley	0.51
Ballina	2.56
Kal-Boulder (S)	13.90
Lismore	1.45
SA Water – Mount Gambier	0.37
Kempsey	1.50
P&W - Alice Springs	1.99
SA Water - Whyalla	0.00
Byron	14.29

Source: NWC, 2008-09 National Performance Report

Compared to other regional utilities, SA Water has performed well against this indicator for its regional operations in Mt Gambier and Whyalla.

5.5 Health

5.5.1 Microbiological compliance

Table 12 and Table 13 on the following page, report the percentage of the population serviced by SA Water where microbiological compliance was achieved. Compliance is assessed against the Australian Drinking Water Guidelines (2004) or licence conditions imposed on the utility.

Table 12: Percentage of population where microbiological compliance was achieved

Utility	2005-06	2006-07	2007-08	2008-09
Sydney Water	100.0	100.0	100.0	100.0
WC – Perth	100.0	100.0	100.0	100.0
Yarra Valley Water	100.0	99.7	100.0	100.0
South East Water	100.0	100.0	100.0	100.0
SA Water – Adelaide	100.0	100.0	100.0	100.0
Brisbane Water	100.0	100.0	100.0	100.0
City West Water	100.0	100.0	100.0	100.0
Gold Coast Water	100.0	100.0	96.6	100.0
Hunter Water	99.6	99.8	100.0	100.0
ACTEW	100.0	100.0	100.0	100.0
Barwon Water	99.8	100.0	100.0	100.0

Source: NWC, 2008-09 National Performance Report

SA Water and most other metropolitan and regional utilities typically report very high (often 100%) compliance. SA Water reported 100% compliance for its Adelaide, Mt Gambier and Whyalla operations.

Table 13: Percentage of population where microbiological compliance was achieved

Utility	2005-06	2006-07	2007-08	2008-09
Clarence Valley			98.0	98.9
Tamworth	95.1	100.0	98.0	100.0
South Gippsland Water	100.0	100.0	100.0	100.0
Wingecarribee	100.0	100.0	100.0	100.0
Dubbo	100.0	99.0	100.0	98.2
WC - Geraldton (W)	100.0	100.0	100.0	100.0
Orange	100.0	100.0	100.0	100.0
Queanbeyan	100.0	100.0	100.0	100.0
Aqwest – Bunbury (W)		100.0	100.0	100.0
Westernport Water		100.0	99.8	100.0
Bathurst	100.0	99.0	100.0	100.0
WC – Albany	100.0	100.0	100.0	100.0
Bega Valley	100.0	100.0	100.0	100.0
Ballina	100.0	100.0	100.0	100.0
Lismore		97.0	100.0	100.0
WC - Kal-Boulder (W)	100.0	100.0	100.0	100.0
SA Water – Mount Gambier	100.0	100.0	100.0	100.0
Kempsey	100.0	99.0	100.0	100.0
P&W - Alice Springs	100.0	100.0	100.0	100.0
SA Water – Whyalla	100.0	100.0	100.0	100.0
Byron	100.0	100.0	100.0	100.0
Busselton (W)	100.0	100.0	100.0	100.0
Country Energy	100.0	100.0	100.0	100.0
Goldenfields Water (R)	100.0	100.0	95.0	100.0

Source: NWC, 2008-09 National Performance Report

5.6 Finance

SA Water's financial information is presented for its metropolitan and country water and sewerage operations. At this stage information is not available for individual regions (i.e. Mt Gambier and Whyalla).

5.6.1 Capital expenditure

This indicator reports on the level of capital expenditure incurred by each large metropolitan utility on a per property basis. Table 14 on the following page, shows the effect over time of water security investments by Sydney Water, Water Corporation (WA) - Perth, Gold Coast, and most recently SA Water, particularly on desalination. The Melbourne retailers have reported comparatively low capital expenditure per capita because most capital expenditure was undertaken by Melbourne Water and therefore does not feature in this table.

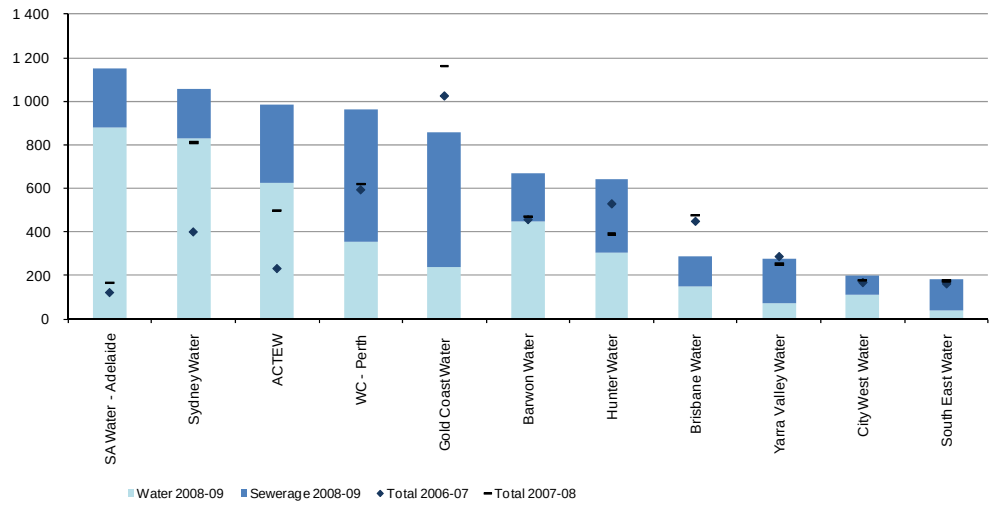
Table 14: Water and sewerage capital expenditure (real $ per property)

Utility	2003–04	2004-05	2005-06	2006-07	2007-08	2008-09
Sydney Water	363	282	327	401	811	1 059
WC – Perth	419	341	731	595	620	964
Yarra Valley Water			305	288	252	278
South East Water	200	187	113	162	175	182
SA Water - Adelaide	247	134	123	122	165	1 150
Brisbane Water	363	497	353	450	476	289
City West Water	229	246	286	168	179	201
Gold Coast Water	322	790	597	1 027	1 161	856
Hunter Water	440	523	413	530	390	644
ACTEW	361	478	226	232	497	987
Barwon Water	396	398	394	458	469	671

Source: NWC, 2008-09 National Performance Report

Figure 5 also indicates the predominance of capital expenditure in the water segment of SA Water, Sydney Water and ACTEW in 2008-09. ACTEW is augmenting the Cotter Dam, while Sydney Water and SA Water are investing in desalination. The bulk water assets of Brisbane Water and Gold Coast Water have been transferred recently to the new South East Queensland bulk water entities.

Figure 5: Water and sewerage capital expenditure ($ per property)



Source: NWC, 2008-09 National Performance Report

Table 15: Water and sewerage capital expenditure (real $ per property)

Utility	2005-06	2006-07	2007-08	2008-09
SA Water – Country		586	655	589
Clarence Valley			3 063	3 391
Tamworth			820	1 426
Eurobodalla			1 194	974
South Gippsland Water				601
Wingecarribee			486	1 279
Dubbo			280	397
WC - Geraldton (W)	118	158	402	310
Orange			110	410
Queanbeyan			379	249
Aqwest – Bunbury (W)		280	875	144
Westernport Water			389	179
Bathurst			404	373
WC - Bunbury (S)	438	449	398	968
WC – Albany	2 044	2 210	1 293	886
Bega Valley			1 998	874
Ballina			385	442
Kal-Boulder (S)	41	20	88	61
Lismore			649	236
WC - Kal-Boulder (W)	2 458	5 472	4 366	3 285
Kempsey			380	1 122
P&W - Alice Springs	303	477	447	965
Byron			755	841
Busselton (W)			293	199
Country Energy			936	1 894
Goldenfields Water (R)			230	134

Source: NWC, 2008-09 National Performance Report

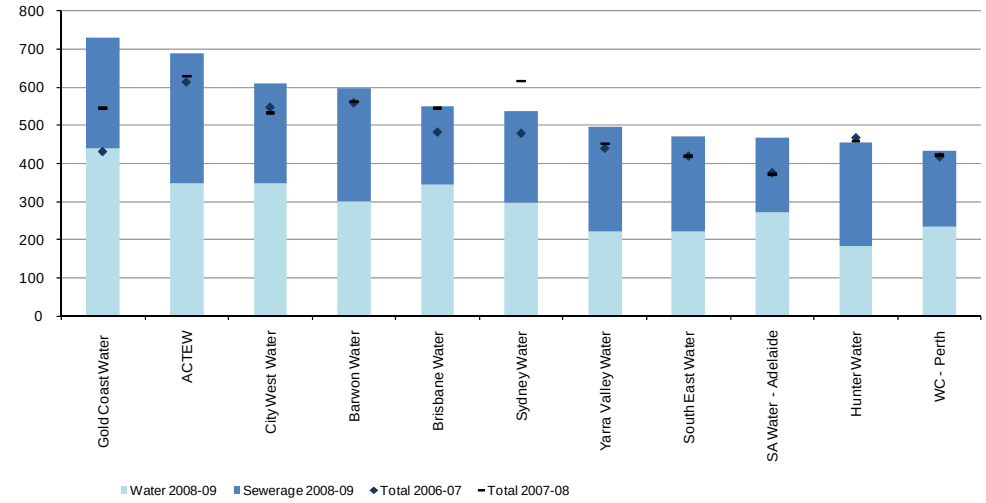
Table 15 shows the level of capital expenditure incurred by each regional utility on a per property basis. There is a significant degree of variation in the amount of capital expenditure incurred per property for regional utilities, particularly where a major new capital project (e.g. sewerage treatment plant) is undertaken. Capital expenditure per property for SA Water's country segment is around the middle for comparable utilities and fairly constant over time.

5.6.2 Operating costs

Figure 6 and Figure 7 on the following page show the operating costs of each water utility in relation to the number of properties served.

SA Water's operating cost per property for its Adelaide operations are amongst the lowest compared to other metropolitan utilities in Australia.

Figure 6: Operating cost – water and sewerage (real $ per property)



Source: NWC, 2008-09 National Performance Report

Figure 7: Operating cost – water and sewerage (real $ per property)

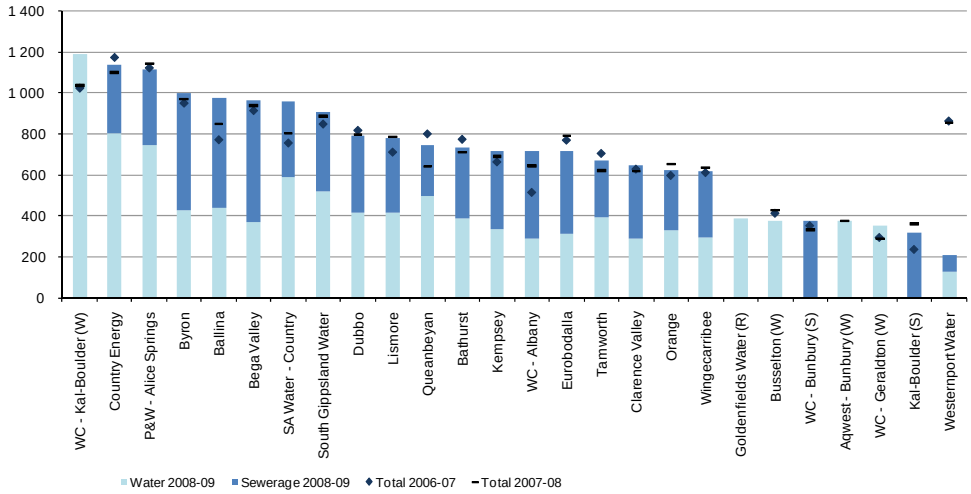


Figure 7 illustrates that the operating costs per property for SA Water's country operations are higher than its metropolitan Adelaide operations and relatively higher than some other regional utilities in Australia.

SA Water has experienced increases in operating cost per property in 2008-09 due to temporary water purchases, water security measures (e.g. rebates and introduction of quarterly billing), and the costs associated with moving SA Water's head office to Victoria Square.

5.6.3 Community service obligations

This indicator shows the revenue that a water utility receives from CSOs as a percentage of its total revenue. CSOs are payments made to a utility in return for the utility undertaking activities as a result of government policy.

Table 16 on the following page, shows that SA Water receives a small percentage of its total revenue from CSOs for its metropolitan Adelaide operations.

Table 16: Revenue from Community Service Obligations (%)

Utility	2003–04	2004-05	2005-06	2006-07	2007-08	2008-09
Sydney Water			6.0	6.0	5.0	6.0
WC – Perth			9.0	9.0	10.0	9.6
Yarra Valley Water				7.0	7.0	7.1
South East Water	5.0	5.0	5.0	6.0	6.0	5.4
SA Water - Adelaide				2.0	2.0	2.0
Brisbane Water			1.0	1.0	1.0	0.7
City West Water	4.0	4.0	4.0	5.0	5.0	4.6
Gold Coast Water			0.0	0.0	0.0	0.0
Hunter Water	6.0	5.0	5.0	4.0	4.0	4.6
ACTEW				4.0	4.0	3.4
Barwon Water				5.0	5.0	5.0

Source: NWC, 2008-09 National Performance Report

Table 17 on the following page indicates that, apart from Water Corporation (WA) – Kalgoorlie-Boulder, SA Water's country operations receive the largest percentage of its revenue in CSOs. This is mainly the result of the South Australian Government's statewide pricing policy. This policy aims to ensure that regional customers pay around the same as metropolitan customers for water and sewerage services.

Table 17 Revenue from Community Service Obligations (%)

Utility	2003–04	2004-05	2005-06	2006-07	2007-08	2008-09
SA Water - Country				48.9	49.1	48.9
Clarence Valley			2.0	2.0	1.0	1.7
Tamworth			1.0	1.0	1.0	1.1
Eurobodalla			2.0	2.0	2.0	1.5
South Gippsland Water			4.0	4.0	4.0	3.9
Wingecarribee			1.0	1.0	1.0	2.0
Dubbo			1.0	1.0	1.0	1.0
WC - Geraldton (W)			20.0	20.0	22.0	9.6
Orange			1.0	1.0	1.0	0.9
Queanbeyan			1.0	1.0	1.0	1.0
Aqwest – Bunbury (W)						0.0
Westernport Water						2.7
Bathurst			1.0	1.0	1.0	1.1
WC - Bunbury (S)			10.0	2.0	8.0	11.6
WC – Albany			34.0	36.0	27.0	33.1
Bega Valley			2.0	1.0	1.0	1.2
Ballina			3.0	2.0	2.0	2.0
Lismore			2.0	2.0	2.0	2.0
WC - Kal-Boulder (W)			61.0	61.0	59.0	64.2
Kempsey			2.0	1.0	2.0	1.8
P&W - Alice Springs						15.0
Byron			1.0	1.0	1.0	0.9
Busselton (W)			0.0	0.0	0.0	0.1
Country Energy			2.0	2.0	2.0	1.6
Goldenfields Water (R)			1.0	2.0	2.0	1.6

Source: NWC, 2008-09 National Performance Report

5.6.4 Net Profit after tax

Table 18 on the following page shows net profit after tax (NPAT) in real terms and as a percentage of total income for the utility. NPAT data for SA Water and Water Corporation (WA) are presented for the whole of the utility. SA Water and Water Corporation (WA) have quite high NPAT due to the large CSO components (e.g. SA Water receives a large CSO from the Government to implement statewide pricing for its regional customers).

Table 18: Net profit after tax (real $000) and NPAT ratio (%)

	Net profit after tax ($000s)			NPAT ratio (%)		
Utility	**2006-07**	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Sydney Water	358 153	186 095	177 501	21	11	9
SA Water - Corporation	234 342	207 262	181 558	26	23	18
Water Corporation	547 378	542 990	512 436	58	57	53
Yarra Valley Water	23 533	9 349	19 764	6	2	4
South East Water	59 486	39 388	42 376	14	10	10
Brisbane Water	66 643	48 468	58 251	11	8	10
City West Water	28 813	24 003	40 784	11	9	13
Hunter Water	63 120	37 152	44 253	29	18	22
ACTEW	33 862	35 111	20 524	17	17	9
Barwon Water	6 502	4 661	9 983	6	4	8

Source: NWC, 2008-09 National Performance Report

5.6.5 Dividend

Table 19 shows the dividend payable for metropolitan water utilities and the dividend payout ratio (i.e. the dividend payable divided by the NPAT). SA Water and Water Corporation (WA) report on this indicator for the whole of the utility.

SA Water's dividend has decreased over the last few years, as has its dividend payout ratio. The dividends payable for SA Water and the Water Corporation (WA) are influenced by the large CSO components, which tend to increase the NPAT.

Table 19: Dividend (real $000) and Dividend payout ratio (%)

	Dividend ($000s)			Dividend payout ratio (%)		
Utility	**2006-07**	**2007-08**	**2008-09**	**2006-07**	**2007-08**	**2008-09**
Sydney Water	149 240	195 890	205 000	42	105	116
SA Water – Corporation	221 791	191 822	161 296	95	93	89
WC – Perth	402 985	393 442	378 522	74	73	74
Yarra Valley Water	22 812	8 660	5 700	97	93	29
South East Water	18 442	24 847	28 900	31	45	68
Brisbane Water	19 008	27 141	34 897	29	56	60
City West Water	26 117	22 167	29 600	91	92	73
Gold Coast Water	81 522	83 844	92 881			
Hunter Water	37 417	35 673	30 400	59	96	69
ACTEW	33 862	35 111	20 524	100	100	100
Barwon Water	0	0	0	0	0	0

Source: NWC, 2008-09 National Performance Report

5.7 Conclusion

The national performance reporting for SA Water's operations in Adelaide, Mt Gambier and Whyalla indicate that its operations are generally efficient and provide value for money to customers.

In recent years, SA Water has invested in improving water security for its customers, including the construction of the Adelaide Desalination Plant. This has also been the case in other states. SA Water's operating costs are relatively low, particularly for metropolitan Adelaide, although costs have increased in 2008-09 due to temporary costs (e.g. rebates for water saving products and movement of head office).

SA Water has generally provided a high quality of service in terms of microbiological compliance and asset performance. Nevertheless, local factors such as soil type, age and type of pipes and seasonally dry conditions have affected the performance of sewerage infrastructure.

SA Water has also performed well financially, although to some extent this can be attributed to the South Australian Government's support of regional customers via a CSO paid to SA Water to ensure that its regional customers pay a similar amount for water and sewerage services as its metropolitan customers.

Conclusion 4

SA Water's performance reporting indicates that the Government's 2010-11 pricing decision is compliant with the NWI Pricing Principles. SA Water's operating costs and standard of service indicate that its business costs are efficient.

6 Revenue Requirement

6.1 Introduction

This chapter provides details of SA Water's revenue requirement and the associated revenue path to 2013-14.

The NWI requires that SA Water's water business move towards upper revenue bound (URB) pricing. The NWI Pricing Principles (see Appendix 4) define the upper revenue bound as the sum of:

- efficient operating, maintenance and administrative costs.
- return on assets (based on the weighted average cost of capital).
- provision for the cost of asset consumption (depreciation).
- externalities, where feasible and practical.
- taxes, or tax equivalent regimes.

Each component of the URB is discussed below. The pricing principles and guidelines are applied to SA Water's water and sewerage segments in metropolitan Adelaide and regional areas. Estimates of the URB for 2006-07 to 2013-14 are included in Appendix 1.

6.2 Operating, maintenance and administrative costs

The NWI Pricing Principles require SA Water's operating, maintenance and administrative (OMA) costs included as the basis of a pricing decision to be based on efficient business costs.

In its 2009-10 Inquiry into the 2009-10 Metropolitan and Regional Water and Wastewater Pricing Process Final Report, ESCOSA stated that:

> *… in the material provided to Cabinet and to the Commission for review, there is insufficient information that would have reasonably enabled Cabinet to make pricing decisions consistent with the high level outcomes. The inadequacy relates primarily to showing that the forward looking costs, upon which a pricing decision must rely, are efficient (ESCOSA, 2009, p 23).*

In its response to ESCOSA's Final Report, the Treasurer stated that:

> *The Government is satisfied that Cabinet has received sufficient information in relation to efficient business costs and capital expenditure. Cabinet decisions in respect of the base efficient business costs and capital expenditure of SA Water are taken separately from the annual pricing decision. They are consolidated and reconfirmed each year in the context of the Budget process preceding the annual pricing decision, updated by various Cabinet decisions made throughout the year. Additional operating and capital expenditure included in Cabinet Submissions outside the Budget process is subject to Cabinet Approval, with submissions including detailed analyses of costs and commercial justification, not only for the forward estimates but for the life of a project.*
>
> *SA Water's forward estimates are reviewed by the Department of Treasury and Finance on an ongoing basis. Not all of this information relating to operating and capital project approvals is forwarded to ESCOSA for review in connection with the annual pricing decision. Market testing is one means used to ensure that the projected costs of the various proposals are efficient.*

Procurement information is typically included in the material provided to Cabinet as it makes each decision.

The Government is provided with sufficient information to enable it to consider the prudence and efficiency of SA Water's OMA costs through the Government's financial management and procurement arrangements, discussed in Chapter 4.

SA Water's OMA costs for the period 2008-09 to 2013-14, as presented and scrutinised by Cabinet in the various processes discussed in Chapter 4, are included in Table 20 below and in Appendix 1.

Table 20: SA Water's OMA Costs (2007-08 dollars)

($M)	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
	actual			estimated		
Water	256	271	308	286	327	329
Sewerage	120	118	118	118	118	117
Total SA Water	**376**	**388**	**427**	**403**	**446**	**446**

Note: Figures in this table may not add due to rounding

Source: SA Water

As discussed in Chapter 5, South Australia satisfies its NWI obligation to report independently and publicly on SA Water's performance through the publication of the NPR. The data from the NPR and SA Water's Annual Efficiency Report support the proposition that SA Water's operations in Adelaide, Mt Gambier and Whyalla are efficient in terms of the relative performance on a range of indicators of operating costs, asset performance, health and environment. This benchmarking of SA Water's performance against comparable metropolitan and regional utilities is included in Chapter 5.

Conclusion 5

The Government is satisfied that it has received sufficient information to enable it to consider the efficiency of SA Water's OMA costs.

The Government considers that SA Water's OMA costs are efficient and therefore compliant with the NWI Pricing Principles.

6.3 Recovery of capital expenditure

The NWI Pricing Principles provide that, in setting SA Water's revenue requirement, the Government can recover efficient capital expenditure and a commercial return on that investment, which is based on the weighted average cost of capital. The two main approaches to setting the revenue requirement for capital investments that are proposed in the NWI Pricing Principles are:

- the annuity approach.
- the regulated asset base (RAB), or building blocks approach.

Although these two approaches should achieve similar outcomes, the annuity approach is generally only applied in situations where it is necessary to ensure that a utility (e.g. a small regional utility) has the cash requirements needed to renew non-financial (e.g. physical assets) over a medium to long term period. Most economic regulators and the South Australian Government have adopted the RAB approach to ensure that the utility owner is returned the value of its financial investment and a commercial rate of return on that investment.

The RAB approach provides that, in establishing the RAB, the assets can be categorised as either:

- legacy assets that were acquired prior to the legacy date (i.e. no later than 1 January 2007); or
- new or replacement assets acquired after the legacy date.

Legacy investment decisions are considered to warrant special treatment, as governments may not have made those particular investment decisions if the NWI Pricing Principles were in place at the time. Nevertheless, some jurisdictions have not defined a legacy date. In this case there would be no differentiation between legacy investment decisions and new investment decisions.

The South Australian Government has adopted a legacy date of 30 June 2006 for SA Water's regulated asset base.

6.3.1 Valuation of new assets

The NWI Pricing Principles require that new and replacement assets are initially valued at its efficient actual cost. A new asset is defined as any investment that occurs after the legacy date.

All new and replacement assets are included in SA Water's regulated asset base after 30 June 2006 at their efficient actual cost.

6.3.2 Valuation of legacy assets

The NWI Pricing Principles provide that legacy investments may be valued using a number of methods, including either depreciated replacement cost, or a line-in-the-sand valuation that essentially locks in the rate of return on the legacy investments as at the legacy date.

SA Water's legacy assets are currently valued at depreciated replacement cost as at the legacy date.

6.3.3 Rolling forward of asset base

The NWI Pricing Principles require that:

the RAB comprising legacy assets and prudent new capital expenditure on new and replacement assets should be rolled forward each year in accordance with the following formula, which can be expressed in real or nominal terms.

$$RAB_t = RAB_{t-1} + \text{prudent capital expenditure}_t - \text{depreciation}_t - \text{disposal of assets}_t$$

Where t = the year under consideration

SA Water's RAB, comprising new and legacy assets, is rolled forward by adding prudent and efficient capital expenditure, and deducting depreciation and asset disposals.

Existing asset values are escalated at 3.5% per annum to reflect financial market expectations of inflation. This is consistent with the inflation forecast assumption in the real WACC calculation.

SA Water's RAB, including new and legacy assets are detailed in Appendix 1.

6.3.4 Capital expenditure

The NWI Pricing Principles require that capital expenditure that is rolled into the asset base should be prudent and efficient.

In its 2009-10 Final Report, ESCOSA noted that:

> *Capital projections again include an assumption that capital costs will escalate by 6% per annum in nominal terms (ESCOSA, 2009, page 26).*

ESCOSA also stated that while this assumption

> *was the case until mid 2008…there is some evidence of a real reduction in capital costs in the sector and forecasts of cost escalation have been sharply reduced (ESCOSA, 2009, page 26).*

The Government considered this matter in its 2010-11 pricing decision and adopted an escalation factor of 3.5%, which was consistent with the assumed expected inflation adopted in the WACC calculation. This revised assumption applied to escalation of forecast new capital expenditure from 2010-11 onwards, and only to projects that do not have full financial approval (FFA). In the case of projects that have FFA, firmer estimates of future costs are generally available.

A significant factor in the 2010-11 pricing decision, as in the 2008-09 and 2009-10 decisions, was the substantial planned new capital expenditure for the Government's investments in water security, particularly the construction of the Adelaide Desalination Plant (ADP). The ADP is subject to a contract, established by competitive tendering processes, and forecast expenditure on the ADP would not be influenced by escalation rates.

The prudence and efficiency of SA Water's capital expenditure is reviewed by the SA Water Board and Government through financial management and procurement processes that are discussed in Chapter 4.

The South Australian Government has included prudent and efficient new capital expenditure in the RAB. Forecast new capital expenditure has been escalated at 3.5%, except for projects that have FFA.

6.3.5 Contributed assets

The NWI Pricing Principles require that:

> *new contributed assets (i.e. grants/gifts from governments and contributions from customers (e.g. developer charges)) should be excluded or deducted from the RAB or offset using other mechanisms so that a return on and of the contributed capital is not recovered from customers.*

The principles also require that funding should be recognised as a contribution to an asset only where there is clear contractual or policy evidence that this funding was meant to be used to lower long term prices.

Further, the principles allow for contributed assets to also be deducted from the legacy assets if there is adequate information available to identify them.

The Government has continued to adopt the treatment of contributed assets outlined in previous transparency statements. SA Water's estimate of post corporatisation contributed assets has been deducted from the RAB. The post corporatisation estimate of contributed assets is considered to be robust, defensible and consistent with the NWI Pricing Principles.

As noted in previous transparency statements, it is considered that adequate information is not available to identify contributed assets prior to 1995.

6.4 Return on assets

The NWI Pricing Principles require that in order to achieve full cost recovery, a water business should recover a return on assets, which is

generally calculated as a rate of return on the depreciated RAB.

The RAB comprises all regulated assets of the water business, but may differentiate between new assets and legacy assets, where a jurisdiction has drawn a line-in-the-sand.

Where a line-in-the-sand has been drawn, the Principles require that the rate of return for new and replacement assets should be consistent with the weighted average cost of capital (WACC).

The rate of return recovered on legacy assets, where the valuation of those assets is based on depreciated replacement cost, may be based on the rate of return at the legacy date.

In jurisdictions that have not defined a legacy date (i.e. there is no differentiation between legacy and new investment decisions) a rate of return consistent with the WACC may be applied to the entire RAB. This is known as the upper revenue bound.

The South Australian Government has adopted an approach referred to as go forward full cost recovery (GFFCR) to transition to, or move towards, upper revenue bound pricing. Under GFFCR, new and replacement assets earn a rate of return that is based on the WACC and the rate of return on legacy assets, valued at depreciated replacement cost, is based on the rate of return at the legacy date.

For SA Water's metropolitan sewerage assets, the rate of return on legacy assets is greater than the current estimate of WACC. Although a price path based on GFFCR complies with NWI principles, the additional revenue could be considered to be monopoly profits. As part of the transition to independent economic regulation, the rate of return earned on metropolitan sewerage legacy assets is being reduced to, and is expected to achieve in 2010-11, the current estimate of WACC. This is consistent with the Government's NWI obligation to 'move towards' upper revenue bound.

For SA Water's metropolitan water assets, the rate of return on legacy assets is lower than the current estimate of WACC. GFFCR therefore lies below the upper revenue bound. Nevertheless, these legacy assets will, over time, be replaced with new assets, which will earn a rate of return that is consistent with the WACC. This is consistent with the Government's NWI obligation to 'move towards' upper revenue bound.

As discussed in section 6.9, upper revenue bound pricing is achieved in SA Water's regional water and sewerage business by a transparently reported CSO.

6.4.1 WACC

The NWI Pricing Principles require that new or replacement assets should recover a rate of return that should be:

> *consistent with the weighted average cost of capital (WACC) with the cost of equity derived from the Capital Asset Pricing Model.*

In its 2009-10 Final Report, ESCOSA stated that:

> *The information provided regarding the weighted average cost of capital (WACC) is broadly satisfactory and, to the extent that go forward full cost recovery incorporates a separate WACC for new capital expenditure and legacy assets, is consistent with the NWIC (sic) draft urban water pricing principles (ESCOSA, 2009).*

However, ESCOSA considered that some discussion was warranted:

> *…relating to the risks of not reflecting market conditions in the WACC, and the relationship between the frequency of setting prices and debt refinancing (ESCOSA, 2009).*

As implied by ESCOSA, there may be a hypothetical financial risk to a utility if the WACC adopted by a regulator in setting a price path is not updated to reflect current market conditions and the utility needs to refinance some of its debt during the period of the price path at the prevailing costs of capital. Nevertheless the Government is satisfied that this is not the case for SA Water given yearly reassessment of water pricing, and consideration of the economic impact of the change in interest rates on SA Water when setting debt duration.

In general, economic regulators determine a price path (including the WACC) for a period of three to five years, based on prevailing conditions in the financial markets. The input parameters that underlie this WACC estimate (e.g. inflation, debt margins, and interest rates) will fluctuate constantly. It is assumed that an efficient utility would then make financial arrangements, which would mitigate against the risk of future fluctuations in interest rates over the period which the price path was set. If the utility does not, then it would bear the cost.

The duration of SA Water's debt has been extended recently by the Government to approximately three years, following a broader analysis including debt levels, similar utilities interstate, sensitivity of profit to movements in interest rates and linked economic variables, and a desire by SA Water to smooth accounting interest costs. In general, medium to long term fluctuations in the cost of debt have tended to average out and the cost of debt over the long run is consistent with the estimate of the WACC. In any event, SA Water's total debt level in 2010-11, including financial lease liabilities, is approximately 29% of total assets.

In its 2007-08 pricing decision, the South Australian Government adopted a 6% pre tax real WACC. For the 2008-09 pricing decision, the relevant input values were updated on the basis of prevailing market observations and the Government continued to adopt a pre-tax real WACC of 6%. Details of the calculation of WACC and the WACC parameters for the 2008-09 pricing decision are included in Appendix 6. It is considered that the adoption of a medium term estimate of the WACC is consistent with the approach that would be taken by a regulator in setting a medium term price path.

The Treasurer considered relevant estimates of WACC considered by economic regulators. These WACC estimates included:

- the Essential Services Commission of Victoria, which adopted a feasible range of approximately 4.76% to 5.42% pre-tax real (average 5.09%) for its *Metropolitan Melbourne Water Price Review – Draft Decision in April 2009*.
- the Independent Pricing and Regulatory Tribunal, which adopted a feasible range of 5.7% to 7.5% pre tax real (average 6.5%) for its Gosford City Council Wyong Shire Council – Water - Determination and Final Report.
- the Australian Energy Regulator, whose Final Decision on WACC for electricity transmission and distribution network service providers was consistent with an estimated WACC of 5.7% pre-tax real.

The Treasurer approved that the rate of return on SA Water's new and replacement assets (WACC) should remain at 6% pre-tax real.

6.4.2 Return on legacy assets

The NWI Pricing Principles provide that, where legacy assets are valued on the basis of depreciated replacement cost, the return on those assets may be based on the rate of return at the legacy date.

The return on metropolitan water legacy assets is 3.1% and the return on metropolitan sewerage legacy assets is 7.2%.

As recommended by ESCOSA in its 2009-10 Final Report, the calculation of the rate of return on metropolitan legacy assets, based on a legacy date of 30 June 2006 is provided in Table 21 on the following page.

Table 21: Calculation of rate of return on metropolitan legacy assets

Item	Metro Water (Real $'000)	Metro Sewerage (Real $'000)
Regulated revenue	223 818	256 300
Less Operating expenditure	93 583	73 148
Less Depreciation	49 548	36 006
Sub-total	80 687	147 146
Divide regulatory asset value of legacy assets	2 563 614	2 052 348
Rate of return	3.1%	7.2%

Note: Figures in this table may not add due to rounding.

Source: SA Water

Conclusion 6

The South Australian Government's 2010-11 pricing decision is consistent with the NWI Pricing Principles by basing the rate of return on new and replacement assets on WACC and the rate of return on legacy assets on the prevailing rate of return as at the legacy date of 30 June 2006.

6.5 Depreciation

The NWI Pricing Principles require that the revenue requirement should include depreciation.

In its 2010-11 pricing decision, the Government estimated depreciation using the straight-line method over the estimated average useful lives of the assets.

The estimates of the average useful lives of assets adopted for the 2010-11 pricing decision are based on knowledge of the performance of those assets having regard to the specific materials and operating conditions.

Legacy assets, or those in existence as at 1 July 2006, are estimated to have an average useful life of 50 years. All other new or replacement assets have an estimated average useful life of 60 years except for water security related projects that are separately identifiable, for which individual depreciation schedules are used.

Depreciation estimates are consistent with the escalation of the RAB at 3.5% per annum. Asset depreciation is included in the regulatory model when new assets are expected to be commissioned.

SA Water's forward looking deprecation costs are outlined in Appendix 1.

Conclusion 7

The South Australian Government's 2010-11 pricing decision is consistent with the NWI Pricing Principles by including an estimate of straight line depreciation in the revenue requirement.

6.6 Externalities

Under the NWI, jurisdictions agreed to manage environmental externalities through a range of regulatory measures, to examine the feasibility of using market based mechanisms, and to implement pricing that includes externalities (where found to be feasible). The NWI and the NWI Pricing Principles require that externalities should be included in the revenue requirement where feasible and practical. A nationally consistent treatment of externalities was not developed at the same time as the NWI Pricing Principles and there has been a lack of clarity nationally about the difference between externalities and charging for water planning and management activities. It was noted in the *Stocktake of approaches to cost recovery for water planning and management in Australia*.

> *The key difference between the two is that water resource management and planning activities support an understanding of externalities and develop frameworks and infrastructure to address them (e.g. water plans to balance consumptive use against environmental needs, trading frameworks to improve resource allocation). Charging for externalities encompasses activities that seek to internalise the cost (or benefit) of the externality to the party causing it (e.g. by a specific charge or tax, or a tradeable credit (NWC, 2007b, p 8)).*

The NWC has further reported that:

> *In some states, cost recovery for water planning and management is a proxy for externality pricing – noting that it is set on a very different basis to externality pricing. (NWC, 2007b, p 56)*

> *While there is an overlap in some states between this [water planning and management] cost recovery and charges for externalities, more work needs to be done nationally to tease out these charges and further explore the scope for market-based responses to externalities of water use (NWC, 2007b, p 58).*

In its 2009-10 Final Report, ESCOSA concluded that the material provided to Cabinet was insufficient and further work is required to at least identify the relevant externalities.

In its 2009 Biennial Assessment, the NWC found that all states have further work to do to explore the feasibility of such actions. The NWC has recommended that:

> *NWI parties renew collective and individual efforts to respond to NWI clause 73 (use of pricing and markets to deal with environmental externalities), given that well-designed externality pricing can be a powerful and enduring way of dealing with the environmental impacts of water provision and use (NWC, 2009, page 186).*

The South Australian Government makes substantial effort to identify and manage externalities through a range of non-market mechanisms (e.g. water planning, Coastal Waters Study). SA Water also devotes significant time and effort to identify and manage externalities (e.g. Environmental Impact Assessment, SA Water's Climate Change Sector Agreement, environmental flow trials in the Mt Lofty Ranges). The Government considers that the development of market based instruments, including pricing principles, to address the impact of environmental externalities, should be done on a nationally consistent basis.

In the meantime, the Government has continued to adopt the COAG definition of externalities (i.e. only externalities that are 'both attributable to and incurred by' SA Water are included in the revenue requirement).

Using this definition, the key externality costs that are attributable to and incurred by SA Water are its licence fees to the Environmental Protect Authority (EPA) ($1.4m in 2008-09) and costs of the environmental improvement program agreed with the EPA. The EPA is responsible for setting environmental standards applicable to SA Water's activities.

SA Water also incurs water planning and management costs, discussed in section 6.7, including payments to the Natural Resource Management (NRM) Boards. As discussed above, some of these water planning and management costs were previously regarded as externalities.

Conclusion 8

The South Australian Government's 2010-11 pricing decision is consistent with the NWI by including externalities that are both attributable to and incurred by SA Water in its revenue requirement.

6.7 Water planning and management costs

The NWI (Clause 67) requires states and territories to bring into effect consistent approaches to pricing and attributing costs of water planning and management. In *NWI First Biennial Assessment of Progress in Implementation* the NWC noted that implementation of this specific NWI obligation for South Australia and for all other jurisdictions was dependent on timing of the development of principles through the Steering Group on Water Charges (NWC, 2007a, p 102).

In its Second Biennial Assessment, the NWC noted that progress in implementing cost recovery for both surface and groundwater has been limited. Further, the NWC noted that the *Commonwealth Water Act 2007* gives the Commonwealth Minister insufficient powers to progress nationally consistent water planning and management (WPM) rules, because it requires a regulated water charge to be imposed for the rules to apply. The NWC recommended that the NWI Pricing Principles should be implemented quickly within the Murray Darling Basin.

With regard to South Australia, the NWC noted that cost recovery for WPM activities predominantly occurs through a state-based levy (i.e. Save the River Murray Levy) and regional levies (i.e. NRM Board levies). The NWC commented that the link between these levies and costs and the attribution of costs between users and governments are unclear. NRM Board Levies and the Save the River Murray Levy are discussed below.

The Department of Water Land and Biodiversity Conservation (DWLBC) has a project underway to:

- identify the costs of providing WPM in South Australia.
- introduce a WPM cost-recovery framework.

- set charges in accordance with the framework from 2011-12 (South Australian Government, 2009, page 49).

This work will continue in concert with the implementation of the NWI Pricing Principles.

6.7.1 NRM Board levy

NRM Boards manage South Australia's water resources and catchment areas to ensure they are used sustainably and to balance environmental, social and economic demands for water. There are eight NRM Boards in South Australia, operating under the *Natural Resource Management Act 2004*. SA Water's payments to NRM Boards in 2008-09 are estimated to be about $3.4m, which is included in SA Water's revenue requirement.

6.7.2 Save the River Murray Levy

The Save the River Murray Levy is a significant source of cost recovery from SA Water's water consumers for WPM costs in South Australia.

While SA Water collects the Levy from its customers, it does not retain the funds nor are any of the associated costs attributed to SA Water. Therefore, the regulatory model does not include any of the Levy revenue or the associated water planning and management costs.

In 2008-09, $25.3 million was received by the Save the River Murray Fund (the Fund) and payments were made of $38 million for a range of associated River Murray projects. At the end of 2008-09 the Fund held approximately $1.8 million, $12.7 million less than last year. The Fund is held by the Minister for the River Murray and administered by DWLBC on behalf of the Minister.

The Fund contributes to the River Murray Improvement Program (RMIP), which is integrated within a larger Murray-Darling Basin Initiative program of works and measures, the South Australian Murray Salinity Strategy and the South Australian Environmental Flows for the River Murray Strategy. The RMIP contributes to the delivery of three high level outcomes:

- improved environmental health of the River Murray system in South Australia.
- high security of water of acceptable quality for irrigation in South Australia at an appropriate price.
- high security of water quality for urban water supplies.

Table 22 below provides information on the receipts and payments from the Fund.

Table 22: Save the River Murray Fund - receipts and payments

($M)	2006-07	2007-08	2008-09
Receipts	21.1	22.0	25.3
Payments	15.8	20.1	38.0
Net increase in Funds	**5.3**	**1.9**	**(12.7)**
Funds held at end of year	**12.53**	**14.5**	**1.8**

Note: Figures in this table may not add due to rounding.

Source: Save the River Murray Annual Reports for 2006-07 and 2007-08 and 2008-09.

In 2008-09, payments were made to a number of projects and activities from the Fund, including:

- Implementation of Water Allocation Plan
- Investment in Salinity Accountability
- River Murray Act
- Murray Darling Basin Commission State Contribution
- Environmental Flows and Wetland Management
- River Murray Environmental Manager
- Surface and Groundwater Modelling
- Prescription of Easter Mount Lofty Ranges
- Investing in River Murray Ecology
- Drainage Disposal Basins Management
- Upgrade of River Murray Waste Disposal Stations
- Improved Information Management
- Water Acquisition for Environmental Flows
- Murray Darling Basin Commission Independent Commissioner
- Lower Murray Levee Banks
- Murray-Darling Basin Reform
- Water Systems Reform
- Riverbank Slumping
- WAP Angus Bremer/Mallee/Marne Saunders
- Lake Bonney Refill
- E-Flows and Wetland Management
- Irrigation Research, Technology Diffusion and Education
- Water Quality Improvement.

Conclusion 9

The South Australian Government is developing an implementation framework for the recovery of water planning and management costs in accordance with the NWI Pricing Principles.

It is noted that SA Water customers already meet a range of WPM costs through the separately charged Save the River Murray Levy.

6.8 Tax equivalent regime

The NWI Pricing Principles require that the water business should recover taxes, or tax equivalent regimes.

SA Water is liable for the full range of rates and taxes or their equivalents as if it were not a State owned business. This includes corporate tax and a range of land tax and council rates.

It is unnecessary to include a separate taxation amount in the revenue requirement, as the return on assets, discussed above, is estimated using a pre-tax WACC.

Conclusion 10

The South Australian Government's 2010-11 pricing decision is consistent with the NWI Pricing Principles by using a pre-tax real rate of return on assets.

6.9 Community Service Obligations

CSOs are payments made to a utility in return for the utility undertaking activities as a result of government policy. The largest CSO paid to SA Water by the Government is for the implementation of statewide pricing, under which regional customers pay the same water charges and similar sewerage charges as metropolitan customers.

6.9.1 NWI obligations and statewide pricing

The NWI recognises that the provision of water services to some small rural and regional communities 'will never be economically viable' but water services need to be maintained to meet social and public health obligations. Clause 66(v)(c) of the NWI states:

> *Rural and Regional…*
> *where full cost recovery is unlikely to be achieved in the long term and a Community Service Obligation (CSO) is deemed necessary, the size of the subsidy is to be reported publicly and, where practicable, jurisdictions consider alternative management arrangements aimed at removing the need for an ongoing CSO. (clause 66(v)(c))*

The Government's water security plan, Water for Good, endorses continued support for regional communities using SA Water's networks through statewide pricing. The Government's 2010-11 pricing decision also confirmed continuation of its statewide uniform pricing policy for reticulated water and sewerage. Consistent with this policy, SA Water provides reticulated water and sewerage services to its customers in South Australian regional areas at prices similar to the metropolitan area. Given higher costs in many regional areas, water and sewerage services are provided to many regional customers at less than total economic cost, including return on assets.

Full cost recovery for water and sewerage services in regional areas, and therefore compliance with the NWI, has been achieved via transparently reported CSO payments. For the 2010-11 pricing decision, SA Water's regional business segment, through the government's statewide uniform charging policy and the application of its Community Service Obligation policy, will achieve the URB. CSO payments are reported transparently in SA Water's Charter and disclosed in SA Water's Annual Report, which is tabled in Parliament.

Indicative estimates of CSOs adopted for the 2010-11 pricing decision are included in Appendix 1. The CSO payment for country water charges based on statewide pricing is expected to decrease significantly. Indicative revenue estimates indicate that continued application of the current statewide pricing policy may result in URB, based on country water assets and operations, no longer exceeding country water revenues in 2013-14. In its water security plan, Water for Good, the Government has endorsed a review by ESCOSA into the effect of statewide pricing in 2011. This review would examine indicative estimates of SA Water's revenue from country water sales.

Table 23: Estimated CSO payments to SA Water (nominal)

$M	**2008-09** actual	**2009-10** estimated	**2010-11** estimated
Total Statewide Uniform pricing	166.52	179.12	158.63
Water Proofing Adelaide	3.69	6.04	6.19
Exemptions and Concessions	11.20	11.62	12.04
Emergency Functional Services	0.59	0.60	0.57
Emergency Services Concession (SAPOL)	0.05	0.05	0.06
Administration of Pensioner Concessions	0.52	0.41	0.41
Government Radio Network	0.42	0.47	0.48
River Murray Levy Administration	0.06	0.06	0.06
Administration of Rain Water Tank Rebate Scheme	0.04	-	-
Total CSO payments	**183.09**	**198.36**	**178.43**

Note: Figures in this table may not add due to rounding

Source: SA Water

Table 23 provides actual and estimated CSO payments to SA Water for 2008-09 and 2009-10. The statewide uniform pricing CSO is discussed above. A brief discussion of each of the other CSOs follows.

6.9.2 Water Proofing Adelaide

SA Water receives a CSO to compensate for some non-commercial activities in the metropolitan area that SA Water may undertake under the Water Proofing Adelaide program.

6.9.3 Exemptions and concessions

SA Water receives a CSO payment, calculated as an estimate of payments forgone, for providing service charge exemptions to certain customers, such as places of worship, charitable organisations and sporting clubs.

6.9.4 Emergency Functional Services

SA Water is a sponsor for the emergency functional services and is required to coordinate the response and recovery of infrastructure following a major incident, emergency or disaster.

6.9.5 Emergency Services

SA Police provide a CSO to SA Water for water rate concessions that have been granted to emergency services' entities.

6.9.6 Administration of the pensioner concession scheme

SA Water administers pensioner entitlement applications and the distribution of concessions to local government for pensioners who are SA Water customers. SA Water receives a CSO payment only for the costs of administration of the pensioner concession scheme.

The actual pensioner concession payments will continue to be funded through a subsidy from the Department for Families and Communities calculated as the amount of the concessions paid.

6.9.7 Government Radio Network

SA Water receives a CSO for the Government Radio Network. SA Water was required to enter into a non-commercial agreement for use of the Government Radio Network for both operational and emergency communications within SA Water, as well as for use of Government Radio Network pagers.

6.9.8 Administration of the Save the River Murray Levy

SA Water will continue to administer the Save the River Murray Levy in 2010-11. The estimated cost is based on actual administration costs incurred by SA Water.

It should be noted that SA Water does not retain funds raised by the Levy.

6.9.9 Administration of the Rain Water Tank Rebate Scheme

As part of the *Water Proofing Adelaide* strategy, the South Australian Government introduced, from July 2006, a rainwater tank plumbing rebate scheme. Up until 2008-09, SA Water administered this scheme and therefore received a CSO for the administration costs (approximately $40,000-$50,000 per annum). The scheme is now part of SA Water's H2OME rebate scheme and is fully funded by SA Water.

Conclusion 11

The South Australian Government's 2010-11 pricing decision is consistent with the NWI by publicly reporting the CSOs that are paid to SA Water.

6.10 Revenue Path

The NWI Pricing Principles require water businesses to move towards recovering efficient costs consistent with the NWI definition of URB. In accordance with the NWI, regional and rural businesses may achieve this by a transparently reported CSO.

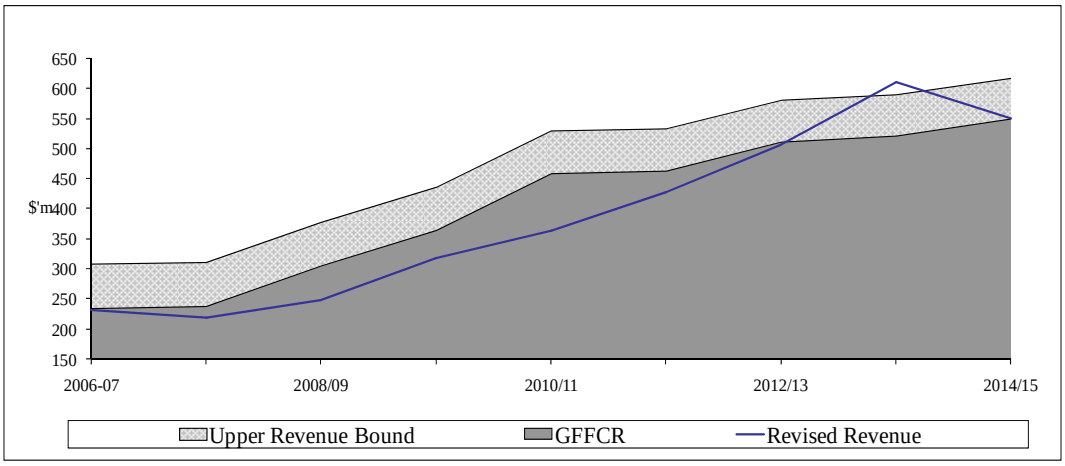
As discussed in section 6.4, SA Water's metropolitan sewerage business is expected to achieve the URB in 2010-11. SA Water's regional water and sewerage businesses already achieve the URB by a transparently funded CSO from the Government. The tables in Appendix 1 illustrate that the Government's 2010-11 pricing decision for these business segments would achieve the URB.

As discussed in section 6.4, for SA Water's metropolitan water business, the South Australian Government continues to adopt the approach to achieving the URB over a period of time, known as GFFCR. Nevertheless, there is expected to be large expenditure on water security measures over the period 2010-11 to 2013-14, which is expected to result in significant fluctuations in GFFCR and the URB from year to year.

In setting 2010-11 prices, the Government considered a number of options to smooth annual price increases over the period 2010-11 to 2013-14. For the purposes of setting 2010-11 prices only, the Government adopted an indicative revenue path that is based on annual increases in SA Water's metropolitan water revenue of the same magnitude over the period 2010-11 to 2013-14. This indicative revenue path aims to match GFFCR on a cumulative basis, rather than each year, over the same period. For example, although SA Water's indicative revenue estimate in 2013-14 exceeds URB, it does not exceed GFFCR over the entire period 2011-12 to 2013-14.

The Government also considered a number of pricing structures that aimed to achieve this indicative revenue path. These pricing structures adopted different assumptions about the responsiveness of customer's consumption to price increases.

Figure 8 SA Water's indicative revenue path for the metropolitan water business (2007-08 dollars)



Source: SA Water

Figure 8 illustrates the estimates for SA Water's metropolitan water business of upper revenue bound, GFFCR and proposed revenue as a result of the indicative revenue path and the pricing structure adopted by the Government in its 2010-11 pricing decision. Further detail of these estimates is provided in Appendix 1.

In June 2009, the Government endorsed its water security plan, Water for Good, including the appointment of ESCOSA as independent economic regulator of SA Water's water and sewerage services by 2010. ESCOSA would be expected to make its first pricing decision to apply for a period from 2012-13. In its first pricing decision, ESCOSA would review SA Water's indicative revenue path for the period 2012-13 to 2014-15, included in Figure 8 above. So long as any cumulative shortfall against GFFCR is recovered without delay, this may result in a modified revenue path over this period.

The pricing structure that the Government adopted for its 2010-11 pricing decision is described in section 2.1.1 and the consistency of the pricing structure with the NWI Pricing Principles is discussed in the next chapter.

7 Efficient Resource Pricing

Chapter 7 explores the application of the NWI Pricing Principles on efficient resource pricing to the tariff structure for:

- potable water prices
- sewerage charges
- trade waste charges.

The Government also considered overall water security as well as equity issues such as affordability, customer impacts and regional policies.

7.1 Potable water charges

The NWI Pricing Principles require the adoption of two part tariffs, including:

- a water usage charge
- a service availability charge based on the difference between the revenue requirement and the revenue recovered through water usage charges.

The usage charge should send an efficient resource pricing signal to consumers, while the access charge should recover remaining costs and ensure the ongoing viability of the business (Expert Group, 1995, p 45).

7.1.1 Usage charge: consumption based pricing

The NWI Pricing Principles require that:

> *The water usage charge should have regard to the long run marginal cost of the supply of additional water.*
>
> *…governments may decide on more than one tier for the water usage charge for policy reasons, e.g. sending a strong pricing signal to encourage efficient water use; and having regard to equity objectives.*

Long run marginal cost (LRMC) is the cost of providing an extra unit of service when all production costs (including capital) are allowed to vary. It is equivalent to the cost that would be saved in the long term from additional water not being consumed.

In its 2008-09 Final Report, ESCOSA stated that:

> *The Commission supports the greater use of consumption based pricing and the move towards pricing at LRMC. However, the Commission considers that more information should be provided in relation to consumption forecasting and the calculation of LRMC.*

LRMC is a forward looking concept incorporating:

- long run marginal operating costs
- long run marginal capital costs.

LRMC is estimated, rather than being observed in the market place. It is difficult to determine and is sensitive to the range and quality of projections and assumptions underlying the estimate.

For its 2010-11 pricing decision, the same method of determining LRMC was adopted by the Government as for its 2009-10 pricing decision. This method is based on the expansion of the planned Adelaide Desalination Plant from 50 GL to 100 GL. Based on the assumptions adopted for the 2009-10 pricing decision, LRMC is estimated to be about $2.40 per kL in 2010-11 dollars.

In its 2010-11 pricing decision, the Government increased the first two tiers of the water usage charge that is applied to all SA Water customers (i.e. residential, commercial and industrial) to a level that is more consistent with LRMC. For residential customers in single dwellings, the third tier usage charge for consumption greater than 130 kL per quarter is higher than the current estimate of LRMC. This aims to achieve the policy objective of discouraging excessive water use in residential premises. This is consistent with the NWI Pricing Principles.

Conclusion 12

The South Australian Government's 2010-11 pricing decision for potable water is consistent with the NWI Pricing Principles by having regard to the LRMC of the supply of additional water.

7.1.2 Demand forecasts

SA Water's revenue is set based on the following 'normal' consumption forecasts. While these figures take account of anticipated customer growth, the forecasts recognise the likely impact of demand management initiatives and the likely further demand impact associated with ongoing substantial increases in water usage prices. They do not, however, take account of the reduction in consumption due to temporary water restrictions (i.e. restricted consumption) which are not considered to have a long term impact. These have been disregarded for price setting purposes.

Consumption GL	2009-10	2010-11	2011-12	2012-13	2013-14
Normal	217	209	203	198	197
Restricted	190	190	198	198	197

Source: SA Water

7.1.3 Service availability charge

The NWI Pricing Principles require that:

> *the revenue raised recovered through the service availability charge should be calculated as the difference between the total revenue requirement as determined in Principle 1 and the revenue recovered through water usage charges and developer charges.*

The service availability charge could also vary between customers or customer classes, depending on service demands and equity considerations according to NWI Pricing Principles. Unattributable joint costs should be allocated such that total customer charges must not exceed stand-alone cost or be less than avoidable costs where it is practical to do so.

In its 2010-11 decision, the South Australian Government increased the water service availability charge for residential and industrial customers by 3.5 %.

The service availability charge for commercial customers continues to be based on property value with the minimum charge increased by 3.5 %. In its 2009 Biennial Assessment, the NWC recommended that jurisdictions move away from water charges based on property values where they still exist. In the Water for Good plan, the South Australian Government has endorsed the following action:

In consultation with customers and over a period of five years, transition SA Water customers to water supply charges based on the number and size of the customer's meters while managing any unreasonable impacts for individual customers.

Conclusion 13

The South Australian Government's 2010-11 pricing decision for potable water is consistent with the NWI Pricing Principles by including a service availability charge that is based on achieving the total revenue requirement.

7.2 Sewerage charges

Although COAG pricing principles indicate a preference for sewerage charges to be based on consumption, the National Competition Council (NCC) has noted that:

Charging on a consumption basis for wastewater services provided to households and small commercial consumers is generally not efficient (NCC, 2003, page 14).

Where usage charges are not practical, the COAG pricing principles do not stipulate how sewerage charges should be apportioned. This was confirmed by ESCOSA in its 2006-07 Final Report, where it stated:

The COAG principles do not specify the approach to be used where direct consumption charges are not cost effective; hence the tariff structure adopted is not inconsistent with the COAG principles (ESCOSA, 2005, page 42).

SA Water does not apply consumption based pricing, other than to the largest dischargers. The Commission acknowledges that this recognises the impracticality of metering direct usage for small customers and the minor benefit that price signals of this type would generate (ESCOSA, 2005, page 42).

Large trade waste customers are charged based on consumption (see 7.3). Otherwise, sewerage charging is based on property value, subject to a minimum charge.

The rating scales used to calculate sewerage charges are updated every June (on the basis of the latest Valuer-General property values) to ensure that the increase in total revenue from sewerage charges does not exceed the government's pricing decision (i.e. no windfall gain passes to SA Water as a result of significant property value increases).

For regional customers, higher rating scales are applied than Adelaide metropolitan customers, to counterbalance generally lower property values in regional areas. Nevertheless, regional customers still pay lower average charges than metropolitan customers.

Conclusion 14

The South Australian Government's decision with regard to sewerage charges is not inconsistent with COAG principles, given that direct consumption charges are generally not able to be applied cost-effectively in practice.

7.3 Trade waste charges

The NWI required the:

> *Review and development of pricing policies for trade wastes that encourage the most cost effective methods of treating industrial wastes, whether at the source or at downstream plants by 2006 (Clause 66(ii)).*

In its First Biennial Assessment, the NWC noted that South Australia had completed this review and developed pricing policies for trade waste (NWC, 2007, page 19).

The largest trade waste dischargers (currently around 40) face volumetric trade waste charges, reflecting the significant avoidable costs they impose on the sewerage system. Revision of the charges to apply for 2010-11 will be the subject of a separate review process.

Conclusion 15

The South Australian Government has completed its NWI commitment with regard to trade waste charges.

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APPENDICES

List of Appendices

Appendix 1: Regulatory Model Estimates

The table below shows the depreciation of assets and illustrates the annual increases and decreases in the capital base. The table includes information for SA Water Corporation and SA Water's water and sewerage business segments.

Adjusted infrastructure asset base (nominal)*

SA WATER ASSETS (nominal $M)						
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening balance	7,312	8,059	9,280	10,184	10,665	11,011
Capital Expenditure	650	1,113	802	363	224	293
Inflation adjustment	251	276	317	348	365	376
Depreciation	-154	-168	-215	-230	-243	-259
Closing balance	8,059	9,280	10,184	10,665	11,011	11,421
WATER ASSETS (nominal $M)						
Opening balance	4,836	5,437	6,442	7,070	7,335	7,576
Capital Expenditure	537	932	564	187	163	228
Inflation adjustment	166	186	220	242	251	259
Depreciation	-103	-113	-155	-164	-172	-183
Closing balance	5,437	6,442	7,070	7,355	7,576	7,880
SEWERAGE ASSETS (nominal $M)						
Opening balance	2,476	2,622	2,838	3,114	3,330	3,434
Capital Expenditure	113	181	238	176	61	64
Inflation adjustment	85	90	97	107	114	118
Depreciation	-51	-55	-60	-66	-71	-76
Closing balance	2,622	2,838	3,114	3,330	3,434	3,541

Note: * excludes post-corporatisation contributed assets.

Source: SA Water

Estimates of URB, GFFCR, and revenue

The following tables show the regulatory models estimates for regulated asset values, URB, GFFCR and revenue for each of SA Water's four segments (metropolitan water, country water, metropolitan sewerage and country sewerage) as well as for SA Water as a whole.

Regulatory model estimates for SA Water

SA WATER (2007-08 prices $M)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Regulated Asset Values						
Legacy Assets	6,868	6,787	6,704	6,619	6,532	6,442
New Assets	995	2,046	2,752	3,043	3,200	3,406
Asset Values	7,862	8,833	9,457	9,662	9,732	9,848
URB						
Operating Expenditure	376	388	427	403	446	446
Depreciation	150	160	200	208	215	223
Return On Assets (All 6%)	472	530	567	580	584	591
Total URB	998	1,077	1,194	1,191	1,245	1,260
GFFCR						
Operating Expenditure	376	388	427	403	446	446
Depreciation	150	160	200	208	215	223
Return on Assets (3.1%/6%)	400	459	497	510	515	523
GFFCR	926	1,006	1,124	1,122	1,176	1,193
Revenue						
Water Rates	125	109	111	136	166	204
Water Sales	214	336	412	486	575	695
Sewerage Rates	275	279	284	293	296	295
CSOs	179	189	166	115	76	48
Other	50	56	55	56	57	59
Total Revenue	843	969	1,027	1,086	1,171	1,301

Source: SA Water

Regulatory model estimates for metropolitan water

Metropolitan Water (2007-08 prices $M)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Regulated Asset Values						
Legacy Assets	2,481	2,452	2,422	2,391	2,360	2,327
New Assets	550	1,357	1,791	1,900	1,998	2,102
Asset Values	3,031	3,809	4,213	4,292	4,357	4,429
URB						
Operating Expenditure	141	147	181	177	218	218
Depreciation	56	61	96	99	101	106
Return On Assets (All 6%)	182	229	253	257	261	266
Total URB	378	436	530	533	581	590
GFFCR						
Operating Expenditure	141	147	181	177	218	218
Depreciation	56	61	96	99	101	106
Return on Assets (3.1% / 6%)	110	157	183	188	193	198
GFFCR	306	365	460	464	512	522
Revenue						
Water Rates	92	81	81	99	121	149
Water Sales	133	211	255	303	359	434
Sewerage Rates	0	0	0	0	0	0
CSOs	7	9	9	7	7	7
Other	16	17	17	18	20	21
Total Revenue	248	318	363	428	507	611

Source: SA Water

Regulatory model estimates for country water

Country Water (2007-08 prices $M)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Regulated Asset Values						
Asset Values	2,273	2,322	2,352	2,353	2,339	2,366
URB						
Operating Expenditure	115	124	127	109	109	111
Depreciation	45	46	48	50	51	52
Return On Assets (All 6%)	136	139	141	141	140	142
Total URB	296	309	316	300	300	305
Revenue						
Water Rates	32	29	30	37	45	55
Water Sales	81	125	156	183	216	261
Sewerage Rates	0	0	0	0	0	0
CSOs	142	147	121	71	31	0
Other	9	9	9	9	9	9
Total Revenue	265	309	316	300	300	325

Source: SA Water

Regulatory model estimates for metropolitan sewerage

Metropolitan Sewerage (2007-08 prices $M)

	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Regulated Asset Values						
Asset Values	2,136	2,242	2,389	2,493	2,495	2,489
URB						
Operating Expenditure	96	93	94	93	93	91
Depreciation	42	44	46	50	53	54
Return On Assets (All 6%)	128	135	143	150	150	149
Total URB	266	271	284	292	295	294
Revenue						
Water Rates	0	0	0	0	0	0
Water Sales	0	0	0	0	0	0
Sewerage Rates	246	248	253	261	264	263
CSOs	7	7	7	6	6	6
Other	21	25	24	25	25	25
Total Revenue	274	281	284	292	295	294

Source: SA Water

Regulatory model estimates for country sewerage

Country Sewerage (2007-08 prices $M)						
	2008-09	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Regulated Asset Values						
Asset Values	422	460	502	524	541	564
URB						
Operating Expenditure	24	25	24	25	25	26
Depreciation	8	9	9	10	11	11
Return On Assets (All 6%)	25	28	30	31	32	34
Total URB	58	61	64	66	68	71
Revenue						
Water Rates	0	0	0	0	0	0
Water Sales	0	0	0	0	0	0
Sewerage Rates	30	30	31	32	32	32
CSOs	23	26	29	30	32	35
Other	3	4	4	4	4	4
Total Revenue	56	61	64	66	68	71

Source: SA Water

SA Water Capital Expenditure Budget

SA Water's estimated capital expenditure for 2009-10, as per the South Australian Government Budget is presented in the table below. The values are in nominal terms.

	Expected completion*	Proposed expenditure 2009-10 $000	Estimated total cost** $000
New Works			
Adelaide Plains Water Supply Study	June 2010	3 910	5 000
Project to investigate the use of groundwater as an alternative supplementary source for Adelaide.			
Augmentation of the Middle River Water Supply System	June 2012	500	10 000
Project to augment the Middle River water supply to improve reliability of the water supplied to Kingscote and surrounding areas.			
Barossa Trunk Water Main Field Joint Renewal	June 2012	500	6 000
Project to manage the reliability of the aged infrastructure.			
Bird in Hand Waste Water Treatment Plant Nutrient Reduction	December 2012	10 250	38 500
Project to reduce nutrient levels and increase reuse of wastewater by improving effluent quality.			
Bolivar Waste Water Treatment Plant Clarifier Upgrade	December 2011	2 000	4 800
Project to replace aging infrastructure as part of the asset renewal strategy.			
Bolivar Waste Water Treatment Plant Dewatering Facility Upgrade	December 2012	1 000	7 000
Project to extend the hardstand area and expand the bio-solid management facilities.			
Bolivar Waste Water Treatment Plant — Increase Recycle Capacity	December 2011	1 300	5 100
Project to increase the dissolved air flotation filtration supply capacity of recycled wastewater to meet increasing demand.			
Bolivar Waste Water Treatment Plant Main Pumping Station Upgrade	December 2012	1 000	14 000
Project to improve plant capacity, performance and reliability due to critical operational risks and continuing northern area growth.			
Elizabeth East New Tank and Rezoning	June 2011	1 300	4 300
Project to address projected growth and increased system demand.			

	Expected completion*	Proposed expenditure 2009-10 $000	Estimated total cost** $000
Queensbury Waste Water Pump Station Upgrade	June 2012	730	5 100
Project to improve pump station condition to support the surrounding network.			
Marion Road Trunk Water Main Renewal	December 2012	1 000	7 160
Project to renew the Marion Road trunk water main from Anzac Highway to Henley Beach Road.			
Morgan Water Treatment Plant Balancing Storage	June 2011	2 200	4 460
Project to install a balancing filtered water supply to avoid interruption, minimise pumping costs and improve water quality for Morgan to Whyalla.			
Murray Bridge Waste Water Treatment Plant Upgrade	December 2016	670	n.a.
Project to investigate and implement strategies to increase plant capacity and to reduce its environmental impact.			
North Lefevre Peninsula Waste Water Diversion	December 2011	1 500	6 800
Project to reduce saline inflows of wastewater into the Bolivar main treatment plant.			
Water Proofing the South — Aldinga Additional Storage	June 2013	2 550	7 830
Project to increase the ability to supply reuse water by Aquifer Storage and Recovery (ASR) of initially 400 megalitres per year.			
Works in Progress			
Adelaide Desalination Plant	December 2012	832 811	1 824 000
100 gigalitre plant to diversify and secure South Australia's water supply and reduce reliance on the River Murray and Mt Lofty Ranges.			
Aldinga Waste Water Treatment Plant Capacity Upgrade	June 2012	9 116	22 800
Project to increase capacity to meet the demand of population growth and to improve environmental outcomes.			
Christies Beach Waste Water Treatment Plant Capacity Upgrade	Early 2012	80 000	272 000
Project to increase capacity to meet the demand of population growth and to improve environmental outcomes.			

	Expected completion*	Proposed expenditure 2009-10 $000	Estimated total cost** $000
Environment Program	n.a.	20 512	n.a.
Projects aimed at meeting changes in external environmental regulations, standards or internal targets.			
Glenelg to Adelaide Park Lands Recycled Water Project	December 2009	17 161	74 900
Project to improve the sustainability of water resources in the state and reduce the discharge of effluent into the gulf.			
Mullers / Regency Road Trunk Water Main Renewal	December 2010	9 000	11 000
Project to renew the trunk water main.			
Improve Business Program	n.a.	5 385	n.a.
Projects aimed at improving the management and coordination of existing infrastructure and business services within current service standards.			
Information Technology Program	n.a.	19 870	n.a.
Projects aimed at improving information technology based customer and business systems.			
Little Para Reservoir Dam Safety	July 2010	2 700	15 000
Project to comply with the Australian National Committee on Large Dams dam safety guidelines, by increasing flood capacity and strengthening the outlet tower anchor to improve its stability in the event of an earthquake.			
Maintain Business Program	n.a.	105 718	n.a.
Replacement or rehabilitation of existing SA Water infrastructure components in order to maintain current service levels and capacity.			
Morgan to Whyalla Pipeline	June 2014	2 000	8 000
Project to replace underground pipe sections at Port Augusta due to major bursts.			
Morgan to Whyalla Pipeline — Replace High Voltage Switchboard	June 2010	1 428	10 550
Replacement of high voltage switchboards at the eight pumping stations on the Morgan to Whyalla Pipeline.			
Safety Program	n.a.	11 160	n.a.
Projects relating to managing safety issues of the business, employees or the community.			
Southern Urban Reuse Project	December 2010	35 540	62 615
Project to increase the capability to supply reuse water to the southern suburbs (south of Onkaparinga).			

	Expected completion*	Proposed expenditure 2009-10 $000	Estimated total cost** $000
South Para Reservoir Dam Safety	December 2010	4 650	7 000
Project to comply with the Australian National Committee on Large Dams dam safety guidelines, by building flood control, increasing flood capacity and increasing resistance to major leaks.			
System Growth Program	n.a.	25 435	n.a.
Projects relating to the expansion (extension and/or capacity increase) of water and wastewater systems.			
Water Quality Program	n.a.	12 716	n.a.
Projects relating to meeting changes in external water quality standards or regulations and/or internal water quality targets.			
Total — SA Water		1 225 612	

Note *: The expected completion date given for each project indicates the date at which final expenditure on each project occurs. This date is often at variance to the date at which the project first becomes operational.

Note: financial capital expenditure shown above may not be comparable with regulatory capital expenditure as the latter is net of Federal Government funding and contributed assets.

Source: Department of Treasury and Finance, 2009-10 Capital Investment Statement.

Appendix 2: COAG Strategic Framework

Relevant clauses from the COAG Strategic Framework 1994

In relation to water resource policy, COAG agreed:

1 to implement a strategic framework to achieve an efficient and sustainable water industry comprising the elements set out in (3) … below.

2 In relation to pricing:

(a) in general —

i. to the adoption of pricing regimes based on the principles of consumption-based pricing, full-cost recovery and desirably the removal of cross-subsidies which are not consistent with efficient and effective service, use and provision. Where cross-subsidies continue to exist, they be made transparent, …;

ii. that where service deliverers are required to provide water services to classes of customers at less than full cost, the cost of this be fully disclosed and ideally be paid to the service deliverer as a community service obligation;

(b) urban water services —

i. to the adoption by no later than 1998 of charging arrangements for water services comprising of an access or connection component together with an additional component or components to reflect usage where this is cost-effective;

ii. that in order to assist jurisdictions to adopt the aforementioned pricing arrangements, an expert group, on which all jurisdictions are to be represented, report to COAG at its first meeting in 1995 on asset valuation methods and cost-recovery definitions, and

iii. that supplying organisations, where they are publicly owned, aiming to earn a real rate of return on the written down replacement cost of their assets, commensurate with the equity arrangements of their public ownership;

Source: NCC, 1998, Compendium of National Competition Policy Agreements, 2nd Edition, p 103–104, available at www.ncc.gov.au

Guidelines for applying Section 3 of the Strategic Framework and Related Recommendations in Section 12 of the Expert Group Report

1. Prices will be set by the nominated jurisdictional regulators (or equivalent) who, in examining full cost recovery as an input to price determination, should have regard to the principles set out below.
2. The deprival value methodology should be used for asset valuation unless a specific circumstance justifies another method.
3. An annuity approach should be used to determine the medium to long-term cash requirements for asset replacement/refurbishment where it is desired that the service delivery capacity be maintained.
4. To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs (tax equivalent regime), provision for the cost of asset consumption and cost of

capital, the latter being calculated using a Weighted Average Cost of Capital (WACC).

5. To be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset refurbishment/replacement (as noted in (3) above). Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.
6. In applying (4) and (5) above, economic regulators (or equivalent) should determine the level of revenue for a water business based on efficient resource pricing and business costs.
7. In determining prices, transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, and tax equivalent regimes.

Terms requiring further comment in the context of these guidelines (these comments form part of the COAG Strategic Framework)

- The reference to *or equivalent* in principles 1 and 6 is included to take account of those jurisdictions where there is no nominated jurisdictional regulator for water pricing.
- The phrase *not including income tax* in principle 5 only applies to those organisations which do not pay income tax.
- *Externalities* in principles 5 and 7 means environmental and natural resource management costs attributable to and incurred by the water business.
- *Efficient resource pricing* in principle 6 includes the need to use pricing to send the correct economic signals to consumers on the high cost of augmenting water supply systems. Water is often charged for through a two-part tariff arrangement in which there are separate components for access to the infrastructure and for usage. As an augmentation approach, the usage component will ideally be based on the long-run marginal costs so that the correct pricing signals are sent.
- *Efficient business costs* in principle 6 are the minimum costs that would be incurred by an organisation in providing a specific service to a specific customer or group of customers. Efficient business costs will be less than actual costs if the organisation is not operating as efficiently as possible.

Source: NCC, 1998, Compendium of National Competition Policy Agreements, 2nd Edition, p 112–113, available at www.ncc.gov.au

Appendix 3: National Water Initiative Clauses

Best Practice Water Pricing and Institutional Arrangements

Outcomes

64. The Parties agree to implement water pricing and institutional arrangements which:

i) promote economically efficient and sustainable use of:

a) water resources;

b) water infrastructure assets; and

c) government resources devoted to the management of water;

ii) ensure sufficient revenue streams to allow efficient delivery of the required services;

iii) facilitate the efficient functioning of water markets, including inter-jurisdictional water markets, and in both rural and urban settings;

iv) give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management;

v) avoid perverse or unintended pricing outcomes; and

vi) provide appropriate mechanisms for the release of unallocated water.

Water Storage and Delivery Pricing

65. In accordance with NCP commitments, the States and Territories agree to bring into effect pricing policies for water storage and delivery in rural and urban systems that facilitate efficient water use and trade in water entitlements, including through the use of:

i) consumption based pricing;

ii) full cost recovery for water services to ensure business viability and avoid monopoly rents, including recovery of environmental externalities, where feasible and practical; and

iii) consistency in pricing policies across sectors and jurisdictions where entitlements are able to be traded.

66. In particular, States and Territories agree to the following pricing actions:

Metropolitan

i) continued movement towards *upper bound pricing* by 2008;

ii) development of pricing policies for recycled water and stormwater that are congruent with pricing policies for potable water, and stimulate efficient water use no matter what the source by 2006;

iii) review and development of pricing policies for trade wastes that encourage the most cost effective methods of treating industrial wastes, whether at the source or at downstream plants by 2006; and

iv) development of national guidelines for customers' water accounts that provide information on their water use relative to equivalent households in the community by 2006;

Rural and Regional

v) full cost recovery for all rural surface and groundwater based systems, recognising that there will be some small community services that will never be economically viable but need to be maintained to meet social and public health obligations:

a) achievement of *lower bound pricing* for all rural systems in line with existing NCP commitments;

b) continued movement towards *upper bound pricing* for all rural systems, where practicable; and

c) where full cost recovery is unlikely to be achieved in the long term and a Community Service Obligation (CSO) is deemed necessary, the size of the subsidy is to be reported publicly and, where practicable, jurisdictions consider alternative management arrangements aimed at removing the need for an ongoing CSO.

Cost Recovery for Planning and Management

67. The States and Territories agree to bring into effect consistent approaches to pricing and attributing costs of water planning and management by 2006, involving:

i) the identification of all costs associated with water planning and management, including the costs of underpinning water markets such as the provision of registers, accounting and measurement frameworks and performance monitoring and benchmarking;

ii) the identification of the proportion of costs that can be attributed to water access entitlement holders consistent with the principles below:

a) charges exclude activities undertaken for the Government (such as policy development, and Ministerial or Parliamentary services); and

b) charges are linked as closely as possible to the costs of activities or products.

68. The States and Territories agree to report publicly on cost recovery for water planning and management as part of annual reporting requirements, including:

i) the total cost of water planning and management; and

ii) the proportion of the total cost of water planning and management attributed to *water access entitlement* holders and the basis upon which this proportion is determined.

Investment in new or refurbished infrastructure

69. The Parties agree to ensure that proposals for investment in new or refurbished water infrastructure continue to be assessed as economically viable and ecologically sustainable prior to the investment occurring (noting paragraph 66 (v)).

Release of unallocated water

70. Release of unallocated water will be a matter for States and Territories to determine. Any release of unallocated water should be managed in the context of encouraging the sustainable and efficient use of scarce water resources.

71. If a release is justified, generally, it should occur only where alternative ways of meeting water demands, such as through water trading, making use of the unused parts of existing entitlements or by increasing water use efficiency, have been fully explored.

72. To the extent practicable, releases should occur through market-based mechanisms.

Environmental Externalities

73. The States and Territories agree to:

i) continue to manage environmental externalities through a range of regulatory measures (such as through setting extraction limits in water management plans and by specifying the conditions for the use of water in water use licences);

ii) continue to examine the feasibility of using market based mechanisms such as pricing to account for positive and negative environmental externalities associated with water use; and

iii) implement pricing that includes externalities where found to be feasible.

Institutional Reform

74. The Parties agree that as far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision continue to be separately institutionally.

Benchmarking Efficient Performance

75. The States and Territories will be required to report independently, publicly, and on an annual basis, benchmarking of pricing and service quality for metropolitan, non-metropolitan and rural water delivery agencies. Such reports will be made on the basis of a nationally consistent framework to be developed by the Parties by 2005, taking account of existing information collection including:

i) the major metropolitan inter-agency performance and benchmarking system managed by the Water Services Association of Australia;

ii) the non-major inter-agency performance and benchmarking system managed by the Australian Water Association; and

iii) the irrigation industry performance monitoring and benchmarking system, currently being managed by the Australian National Committee o Irrigation and Drainage (ANCID).

76. Costs of operating the above performance and benchmarking systems are to be met by jurisdictions through recovery of water management costs.

Independent pricing regulator

77. The Parties agree to use independent bodies to:

i) set or review prices, or price setting processes, for water storage and delivery by government water service providers, on a case-by-case basis, consistent with the principles in paragraphs 65 to 68 above; and

ii) publicly review and report on pricing in government and private water service providers to ensure that the principles in paragraphs 65 to 68 above are met.

Source: COAG, 25 June 2004, *Intergovernmental Agreement on a National Water Initiative*, available at www.coag.gov.au/meetings/250604/#water_initiative

Appendix 4: NWI Pricing Principles

Introduction

1. The National Water Initiative (NWI), agreed in 2004 by the Council of Australian Governments, is the national blueprint for water reform.

2. The NWI represents a shared commitment by governments to increase the efficiency of Australia's water use, leading to greater certainty for investment and productivity, for rural and urban communities, and for the environment.

3. Under the NWI, governments have made commitments to best practice water pricing including to:

    (i) promote economically efficient and sustainable use of:

        (a) water resources;

        (b) water infrastructure assets; and

        (c) government resources devoted to the management of water.

    (ii) ensure sufficient revenue streams to allow efficient delivery of the required services;

    (iii) facilitate the efficient functioning of water markets, including inter-jurisdictional water markets, and in both rural and urban settings;

    (iv) give effect to the principle of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management; and

    (v) avoid perverse or unintended pricing outcomes.

4. A stocktake on approaches to water charging was prepared by the Steering Group on Water Charges (SGWC)[1] identified three areas where differences in pricing approaches across jurisdictions were most marked:

    (i) approaches to recovering capital expenditure;

    (ii) approaches to setting urban water tariffs; and

    (iii) approaches to recovering the costs of water planning and management.

5. The SGWC developed draft pricing principles in each of the above areas to assist jurisdictions in moving towards consistent approaches to pricing as required under the NWI (paragraphs 65 (iii) and 67 refer).

6. An additional set of pricing principles for recycled water and stormwater reuse have also been developed to assist states and territories to meet their commitments under paragraph 66 (ii) of the NWI to develop pricing policies for recycled water and stormwater reuse that are congruent with pricing policies for potable water.

[1] The Steering Group on Water Charges was established by the National Water Initiative Committee to provide technical advice on water pricing to support the implementation of National Water Initiative pricing reforms.

7. These four sets of principles:

   (i) the principles for recovering capital expenditure;

   (ii) the principles for setting urban water tariffs;

   (iii) the principles for recovering the costs of water planning and management; and

   (iv) the principles for recycled water and stormwater use

   are collectively referred to in this document as the NWI pricing principles.

8. The NWI pricing principles do not limit the ability of governments to address equity issues related to the provision of water services.

9. These NWI pricing principles draw on those in the 1994 Council of Australian Governments (COAG) Water Reform Framework, the 1999 Tripartite agreement, and the NWI as well as the report of the Expert Group on Asset Valuation Methods and Cost Recovery Definitions for the Australian Water Industry (the Expert Group).

10. These principles have been agreed by Australian governments as the basis for setting water prices/charges in their jurisdictions. Governments agree that if a decision was made not to apply these principles in a particular case, the reasons for this would be tabled in parliament.

11. A review of the NWI pricing principles will be undertaken in 2010 to ensure consistency between the pricing principles and the Commonwealth *Water Act 2007*, as well as take into account any further changes required as a result of COAG water reforms.

1. Principles for the recovery of capital expenditure

Background

1. Capital expenditure constitutes the major proportion of costs recovered through water charges. Capital expenditure includes expenditure: for replacement of existing assets; and to expand the stock of assets to meet increases in demand, meet required service standards, and any increases in regulatory obligations.

2. These principles apply only to capital expenditure incurred to provide water services. They do not cover capital expenditure incurred to provide wastewater services or stormwater services[2].

3. The COAG pricing principles, upon which the NWI pricing principles are based provide for the use of a renewals annuity to fund future asset refurbishment/replacement (lower bound pricing), and a return of and on capital to reflect the cost of asset consumption and cost of capital (upper bound pricing). The COAG pricing principles are provided at Appendix A.

4. The Expert Group that played a role in developing the COAG pricing principles made a number of recommendations in their paper on asset valuation and cost recovery, including:

   a) the adoption of the deprival value methodology for asset valuation for charging purposes;

   b) that, as far as practicable, provision be made in charging arrangements for the loss of service delivery capacity[3] on the basis of full replacement cost;

   c) to the extent that it is not practicable to charge on this basis, that, as a minimum, provision be made in charging arrangements for the preservation of the ongoing service delivery capacity based on the infrastructure annuity approach where users desire that the service delivery capacity in the assets continue.

<u>Approaches to providing for capital investment</u>

5. The two main approaches used to calculate the revenue requirement for capital investments are:

   a) the annuity approach; and

   b) the Regulated Asset Base (RAB), or building blocks approach.

6. The annuity approach forecasts asset replacement and growth costs over a fixed period and converts these to a future annualised charge. The annuity approach is commonly applied to provide the cash requirements needed to renew non-financial assets over a medium to long-term time period.

7. The RAB approach includes an allowance for a return of capital (depreciation) and a return on capital[4]. Under the RAB approach the 'building blocks' equations are as follows:

[2] Stormwater services refer to the stormwater transportation network as distinct from stormwater reuse as a water supply option.
[3] The Pricing Principles Steering Group interprets "loss of service delivery capacity" to mean depreciation.

Revenue requirement = Benchmark operating expenditure (including operations, maintenance, administration costs) + Return on capital (RAB) + Return of capital (RAB) or depreciation.

8. Where a water business is using a RAB approach to recover capital expenditure, a number of factors have an effect on the revenue requirement: determination of the initial value for the asset base; the process for rolling forward the asset base over time; and the assumptions used to calculate the WACC.

9. There are a number of matters that need to be considered in establishing the initial asset base. These include:

   a) the methodology used to value the initial asset base[5] (including decisions on whether and where to draw a 'line in the sand'). In establishing this initial value, consideration is given to the extent to which past capital expenditure is deemed to be excessive for the needs of current users or was contributed by others and therefore excluded from the initial asset base; and

   b) the way in which contributed assets are dealt with in the establishment of the initial, and the rolled forward, asset base[6].

10. It is common practice for some jurisdictions to draw a 'line-in-the-sand' to differentiate between past (legacy) investment decisions and new investment decisions. Where a line in the sand is drawn, an opening RAB value is set (which essentially locks in the past rate of return on previous investments). The RAB is then updated (or rolled forward) each year to reflect prudent capital additions, disposals and depreciation)[7].

11. The principles distinguish between past (legacy) investment decisions made prior to the legacy date and new investment decisions made after the legacy date.

12. Some jurisdictions have not drawn a 'line in the sand' (defined a legacy date) and therefore do not currently differentiate between legacy investment decisions and new investment decisions.

Principle 1: Cost recovery for new capital expenditure

13. For new or replacement assets, charges will be set to achieve full cost recovery of capital expenditures (net of transparent deductions/offsets for contributed assets and developer charges – refer to principle 6 – and transparent community service obligations)[i, ii] through either:

[4]The 'return of capital' applied to the capital value invested reflects annual consumption of economic benefit or service capacity and is referred to as depreciation. The 'return on capital' reflects the opportunity cost of the investment.

[5] The initial asset base may be valued in a number of ways, including through: Depreciated Replacement Cost (DRC); Depreciated Optimised Replacement Cost (DORC); Optimised Replacement Cost (ORC); Economic Valuation; Optimised Deprival Value (ODV); Depreciated Actual Cost (DAC); or using another recognised asset valuation method.

[6] Contributed assets are those assets that are provided/funded by water users, or provided/funded on behalf of users by a third party (e.g. governments).

[7] This approach is also known as the financial capital maintenance approach and is an application of the deprival value approach to establishing and updating the RAB. The deprival value approach was recommended by the Expert Group.

a) a return of capital (depreciation of the RAB) and return on capital (generally calculated as rate of return on the depreciated RAB); or

b) a renewals annuity[iii] and a return on capital (calculated as a rate of return on an undepreciated asset base (ORC)).

14. Where jurisdictions have drawn a 'line in the sand', this principle would apply only to new investment decisions made after the date the line in the sand was drawn (the legacy date). For investment decisions made prior to the legacy date, see principles 3 and 4.

15. The rate of return should be consistent with the Weighted Average Cost of Capital (WACC[iv]) with the cost of equity derived from the Capital Asset Pricing Model (CAPM).

Notes:

i. Charges may be set to achieve up to full cost recovery of capital expenditures in the rural and regional sector where it is demonstrated that it is not practicable to move towards upper bound pricing as per the terms identified in clause 66 (v) of the NWI.
ii. See also Principles 4 and 5.
iii. To ensure revenue outcomes generally consistent with option (a), the renewals annuity should be structured as a sinking fund to include a provision on a forward-looking basis for the cost of replacing the relevant asset and/or asset components. In calculating the undepreciated asset base, the ORC should not include the renewals reserve.
iv. The WACC return sought should be tuned to the RAB valuation methodology adopted. The WACC used should be consistent with the form of asset valuation methodology used (e.g. a nominal WACC applies to a historical cost valuation, and a real WACC applies to a current cost valuation). The use of replacement cost valuations can give rise to capital gains and losses measured against the Consumer Price Index (CPI). Where an asset value is used to determine revenue requirements, a systematic escalation in the value of assets above the increase in the CPI will give rise to a capital gain in real terms, all other things being equal. Where an asset on revaluation is subject to a systematic decrement in real terms, a capital loss will result. Where replacement cost valuations methods are used, the WACC will need to be adjusted to cater for systematic capital gains or losses.

Principle 2: Valuation of new assets

16. New and replacement assets[i] should be initially valued at efficient actual cost[ii].

Notes:

i. A new asset refers to any investment (be it on a new asset or a replacement asset) that occurs after the legacy date.
ii. To avoid circularity in price setting the amount included in the RAB should not be based on the net present value of cash flows.

Principle 3: Valuation of legacy assets

17. Legacy assets[i] that are to be retained should be valued at Depreciated Replacement Cost (DRC); Depreciated Optimised Replacement Cost (DORC); Optimised Replacement Cost (ORC), indexed actual cost, Optimised Deprival Value (ODV)[ii] or using another recognised valuation method.

Notes:

i. Legacy assets are those which existed as at the legacy date (see iii for a definition of the legacy date).
ii. This is consistent with the findings of the expert group on asset valuation methods which stated that the deprival value approach to asset valuation should be adopted[8].
iii. The legacy date equates to the date where a line in the sand has been drawn. Where jurisdictions have not drawn a line in the sand, the legacy date will be no later than 1 January 2007 and may be in accordance with earlier dates as determined by governments or economic regulators.

Principle 4: Recovery of legacy capital expenditure

18. In respect of legacy[i] investment decisions, and on the assumption that assets are to be retained, charges will achieve cost recovery by way of a depreciation charge or annuity charge and a positive return[ii] on an asset value used for price setting purposes as at the legacy date[iii]. If assets are to be sold then they are to be valued at their net realisable value.

Notes:

i. Legacy investment decisions are decisions made prior to the legacy date (refer to iii below for a definition of the legacy date).
ii. The return earned should be no less than the return being achieved at the legacy date, and, if the return being earned before the legacy date is above the current WACC return, no more than the return being achieved at the legacy date.
iii. The legacy date will be no later than 1 January 2007 and may be in accordance with earlier dates determined by governments or economic regulators. Once set, the legacy date should not change. Costs funded by governments after the legacy date should be reported through a transparent subsidy.

Principle 5: Rolling forward asset values after the legacy date

19. The RAB comprising prudent new investments and legacy investments should be rolled forward each year in accordance with the following formula, which can be expressed in nominal or real terms[i]:

RAB t = (RAB_{t-1} + Prudent Capital Expenditure $_t$ – Depreciation $_t$ – Disposal $_t$ (discarded assets)). (Where t = the year under consideration).

20. Where assets are optimised[ii], they should not be subject to further optimisation unless there are relevant changes in market circumstances.

21. Where DRC or DORC is used as a basis for asset values, the RAB comprising new investments and legacy investments should be re-valued through an independent appraisal on a rolling basis in accordance with Accounting Policy Standards.

22. Where a renewals annuity is used, asset values should not be depreciated.

[8] The deprival value is the value of future economic benefits that would be foregone if the entity is deprived of an asset. If the asset to be lost is to be replaced, it can be valued at its market value, replacement cost or reproduction cost, depending on the circumstances. If the asset is not to be replaced, then it should be valued at its economic value, which is the greater of either the net present value of the income expected to be earned from the asset, or the fair market value. The optimised deprival value is the lesser of the DORC and the economic value of the asset.

Notes:

i. When applicable, CPI or other relevant indexation factor may be used.
ii. The RAB should be adjusted for 'unplanned' excess capacity through optimisation (that is, delivery of an equivalent service that reflects least cost planning reflecting prudent engineering and technological advancements), where 'unplanned' excess capacity is capacity which is not the result of a planned level of utilisation.

Principle 6: Contributed assets

23. New contributed assets[i,ii,iii] (i.e. grants/gifts from governments and contributions from customers (e.g. developer charges)) should be excluded or deducted from the RAB or offset using other mechanisms so that a return on and of the contributed capital is not recovered from customers[iv]. If a renewals annuity is used, it should include provision for replacement of contributed assets.

Notes:

i. For contributed assets other than developer charges, funding should be recognised as an asset contribution only where there is clear contractual or policy evidence that this funding was meant to be used to lower long-term prices.
ii. For the purposes of principle 6, contributed assets exclude gifts or grants where there is clear contractual or policy evidence that charges be set to achieve full cost recovery, inclusive of the value of the gift or grant.
iii. Equity injections should be distinguished from grants /gifts /contributions.
iv. It is acceptable for principle 6 to apply to legacy contributed assets if adequate information is available to identify them.

2. Principles for urban water tariffs

Background

1. These principles are developed for a situation where there are large monopoly water providers and an absence of water trading and associated competitive pressures to bring about efficient levels of cost recovery and associated tariff structures.

2. When water is traded as a commodity, the value (price) of water is set in the market, determined by the consumers' willingness to pay. The willingness of water users to pay for water is determined either by the profitability of the output derived from its use, whether agricultural or industrial, or from the value derived from household use, or by the value derived from its environmental use.

3. For a range of reasons, the operation of water trading in an urban context is limited, and in some cases, is likely to remain so due to physical limitations. When water cannot be traded, the water service availability and usage charges determine the cost of water to users. Throughout the principles the term 'service availability charge' is used to describe the access/connection/fixed charge and 'water usage charge' to describe the variable charge.

4. As urban water markets become subject to greater contestability it is likely that competitive pressures will have a greater role in determining water charges.

5. These principles apply only to charges levied to provide water services to urban users. They do not apply to charges levied to provide wastewater services or stormwater services[9].

Approaches to setting urban water tariffs

6. Charging structures adopted by urban water businesses generally comprised a service availability charge and a water usage charge, with the service availability charge determined as the residual component to be recovered to meet the revenue requirement after the revenue from water usage charges has been estimated. The usage component of the charge is generally set with reference to the long run marginal cost of supply, and may comprise of more than one tier (often referred to as an 'inclining block tariff').

7. Water charges in the urban water sector may be differentiated by supply nodes (nodal based pricing) or may be uniform across a supply network or geographical area ('postage stamp' based pricing). A nodal pricing approach identifies the cost of service delivery to individual customers, or groups of customers, within a given geographical area or supply node.

8. Water charges may also include up-front developer charges – to signal the infrastructure cost of servicing new developments or additions/changes to existing developments.

Principle 1: Cost recovery

9. Water businesses should be moving to recover efficient costs consistent with the National Water Initiative (NWI) definition of the upper revenue bound: 'to avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or tax equivalent regimes,

[9] Stormwater services refer to the stormwater transportation network as distinct from stormwater reuse as a water supply option.

provision for the cost of asset consumption and cost of capital, the latter being calculated using a Weighted Average Cost of Capital (WACC)'[i].

Notes:

i. Application of this principle would be in the context of commitments to full cost recovery in accordance with paragraph 66 of the NWI.

Principle 2: Tariff structures

10. Two-part tariffs (comprising a service availability charge and a water usage charge) should be used to recover the revenue requirement from retail residential and non-residential and bulk customers[i,ii]

Notes:

i. Unless this is demonstrated to not be cost effective.
ii. This does not preclude charging for peak capacity.

Principle 3: Cost reflective tariffs

11. The water usage charge should have regard to the long run marginal cost of the supply of additional water[i].

Notes:

i. On economic efficiency grounds the water usage charge should comprise only a single usage charge. However, governments may decide on more than one tier for the water usage charge for policy reasons, e.g. sending a strong pricing signal to encourage efficient water use; and having regard to equity objectives.

Principle 4: Setting the service availability charge

12. The revenue recovered through the service availability charge should be calculated as the difference between the total revenue requirement as determined in accordance with Principle 1 and the revenue recovered through water usage charges and developer charges.

13. The service availability charge could vary between customers or customer classes, depending on service demands and equity considerations. Unattributable joint costs should be allocated such that total charges to a customer must not exceed stand-alone cost or be less than avoidable cost where it is practicable to do so.

Principle 5: Pricing transparency

14. Urban water tariffs should be set using a transparent methodology, through a process which seeks and takes into account public comment, or which is subject to public scrutiny.

Principle 6: Over recovery of revenue

15. Where water usage charges lead to revenue recovery in excess of upper bound revenue requirements in respect of new investments, jurisdictions are to address the over recovery. In addressing the over recovery, revenues should be redistributed to customers as soon as practicable.

Notes:

i. This principle recognises that in some cases, long run marginal cost may exceed average cost.

Principle 7: Differential water charges

16. Water charges should be differentiated by the cost of servicing different customers (for example, on the basis of location and service standards) where there are benefits in doing so and where it can be shown that these benefits outweigh the costs of identifying differences and the equity advantages of alternatives[i].

Notes:

i. Differential pricing may be achieved by upfront contributions, including developer charges.

Principle 8: Setting developer charges

17. Developer charges should reflect the investment in both new and existing assets required to serve a new development[i] and have regard to the manner in which ongoing water usage and service availability charges are set.

Notes:

i. Where there are benefits beyond the boundary of the development, the developer charge should have regard to the share of capacity required to serve the development.

Principle 9: Capping developer charges

18. Developer charges should not exceed the costs of serving new developments which includes investment in both new and existing assets required to serve a new development.

Principle 10: Revenue from developer charges

19. To avoid over-recovery, revenue from developer charges should be offset against the total revenue requirement either by excluding or deducting the contributed assets from the RAB or by offsetting the revenue recovered using other mechanisms.

3. Principles for recovering the costs of water planning and management activities

Background

1. Water planning and management aims to ensure the long term sustainability of the water resource, thereby enabling continued water use while maintaining the health of natural ecosystems[10].

2. Conceptually, water planning and management activities can include a broad range of activities that are undertaken as a result of water use or may occur irrespective of water use (e.g. activities to reduce water pollution from land uses).

3. Water planning and management activities may be undertaken by a range of parties: including government agencies, water businesses (both government-owned and private), government bodies (e.g. catchment management authorities or natural resource management councils), non-government organisations and private landholders.

4. Water planning and management aims to provide clear rights to water while managing the negative external impacts of water use on other water users and the environment. These rights are provided to both consumptive users (e.g. rights to extract water for irrigation and stock and domestic use) and non-consumptive users (e.g. – rights for environmental flows). In providing these rights, water planning and management helps to address water users' obligation or duty of care to ensure their activities accord with environmental, social and economic objectives.

National Water Initiative cost recovery context

5. In the context of the NWI and for the purpose of cost recovery, water planning and management are those activities undertaken by, or on behalf of governments as a result of water use (or potential water use e.g. where a water access entitlement holder/licence holder is not using water) only. Water planning and management does not include activities undertaken to manage land-based impacts such as those associated with land clearing for example.

6. Water planning and management covers a wide range of activities to meet a wide range of demands for which the associated costs need to be allocated between water users and governments (representing the community) on the basis of cost sharing principles, noting that these principles do not preclude the total cost of a particular activity being allocated to one party. The activities may be of an operating (recurrent) and/or capital nature.

7. The water planning component of water planning and management is concerned with establishing transparent (statutory based) frameworks for ensuring an appropriate balance between economic, environmental and public benefit outcomes. It aims to ensure the future integrity of the resource by facilitating adjustments to the total consumptive pool in response to scientific input and establishing pathways to adjust for over-allocation and/or overuse. Water planning also provides the mechanism through which resource security outcomes are determined through the specification of shares in the consumptive pool and the rules to allocate these shares.

[10] Water use, for the purposes of this definition refers to all forms of water use (including extractive and non-extractive water use).

8. The water management component of water planning and management is concerned with operationalising water planning, including the implementation of statutory plans which aim to codify water management decisions to meet economic, environmental and social objectives, noting that water management has both strategic and operational dimensions. Water management activities also occur in water systems that do not have water plans.

9. In the context of the NWI, water planning and management involves activities:

   a) to promote the long term sustainability of the resource and to maintain the health of natural ecosystems by minimising impacts associated with water extraction; and

   b) that are necessary to manage the impacts of past, current and future patterns of water extraction; or

   c) that are concerned directly with the hydrology of surface and groundwater systems (as opposed to wider catchment management activities, although there are close linkages); or

   d) that protect the integrity of the entitlement system and the security of users' authorised access to water.

10. The activities broadly cover:

   a) collecting and analysing data to gain a better understanding of the levels of extractions as well as the potential implications of extraction for the water system, and managing this data;

   b) developing policies to manage the resource, including managing the interstate sharing of the resource;

   c) developing plans and strategies/frameworks to allocate water among users and the environment, and to remediate impacts associated with water use;

   d) implementing these plans/strategies/frameworks and monitoring compliance against the plans;

   e) undertaking capital works, such as the modification of weirs to achieve environmental outcomes;

   f) administering water entitlements, compliance, metering and trading systems.

11. Governments have committed in the NWI to publicly report the total cost of water planning and management and the proportion of the total cost of water planning and management (where water planning and management is defined in accordance with paragraphs 5 and 6 above) attributed to water access entitlement holders and the basis on which this proportion is determined (Paragraph 68 of the NWI refers).

12. The water planning and management activities framework (at Appendix B) provides the basis on which water planning and management activities can be classified on a consistent basis.

13. It is important to note that the costs of all activities listed in the water planning and management activities framework (at Appendix B) will not be fully recovered from water users. Charges for activities undertaken for the Government (such as policy development and Ministerial or Parliamentary services) are excluded. Costs of the remaining activities will be apportioned between water users and governments in accordance with Principle 4. Where costs are recoverable from water users, they will be tested for cost-effectiveness by an independent party in accordance with Principle 3.

Principle 1: Water planning and management activities

14. Water planning and management activities include the activities outlined in the water planning and management activities framework provided at Appendix B.

Principle 2: Government activities

15. Water planning and management charges levied on to water users should exclude the cost of activities undertaken for government such as policy development[i] and Ministerial or Parliamentary services[ii] (Paragraph 67 (ii a) of the NWI refers). These activities are marked with an asterisk in the activities framework provided at Appendix B, and the associated activity costs should be allocated entirely to governments.

Notes:

i. Policy development includes the development and/or refinement of overarching policy frameworks designed to plan for, and manage water resources. Policy development will typically be characterised by the development of comprehensive strategies that articulate the long-term policy objectives for sustainable water management and the overarching policy and institutional framework for achieving these objectives. This includes overarching legislation (e.g. *Water Act 2000* (Qld), *Water Management Act 2000* (NSW), *Natural Resource Management Act 2004* (South Australia)) or overarching policy frameworks (e.g. the State Water Plan (Western Australia), Securing our Future Together – White Paper (Victoria) and the State Water Management Outcomes Plan (NSW)). Developing and refining statutory, catchment/valley/regional-level water plans or other secondary/subordinate legislation that operationalises water planning and management activities does not constitute policy development or a Ministerial or Parliamentary service and the associated activity costs should not be exempt from cost recovery.
ii. Ministerial or Parliamentary services include reporting to parliament; advising parliament on issues where the agency has expertise; answering parliamentary questions; briefing Ministers and responding to Ministerial correspondence.

Principle 3: Cost-effectiveness test

16. Having identified water planning and management costs to be recovered from water users, in whole or in part, activities should be 'tested' for cost-effectiveness by an independent party and the findings of the cost-effectiveness review are to be made public.

Principle 4: Cost allocation

17. Costs are to be allocated between water users and governments using an impactor[i] pays approach.

Notes:

i. An impactor is any individual, group of individuals or organisation whose activities generate costs, or a justifiable need to incur costs. The impactor pays approach seeks to allocate costs to different individuals, groups of individuals or organisations in proportion to the contribution that each individual, group of individuals or organisation makes to creating the costs, or the need for the costs to be incurred.

Principle 5: Differentiation of costs

18. Water planning and management costs are to be identified and differentiated by catchment or valley or region and by water source where practicable. Water planning

and management charges should in turn, recover the costs of the activities concerned and be differentiated by catchment or valley or region and by water source (e.g. regulated, unregulated or groundwater sources) where practicable[i].

Notes:

i. It would not be considered practicable to differentiate water planning and management charges by catchment or valley or region where a jurisdiction can demonstrate that water planning and management costs do not vary significantly across catchments or valleys or regions or by water source, or it is excessively costly to determine costs at these levels. Where this is currently the case, a broader charge (such as a state-wide charge) may be applied.

Principle 6: Community Service Obligations

19. Where practical, jurisdictions should aim to reduce or eliminate subsidies or Community Service Obligations. Any shortfall between the revenue required to achieve cost recovery from water users and the total costs recovered through water charges, should be transparently reported.

4. Pricing principles for recycled water and stormwater use

Background

1. The National Water Initiative (NWI) specifies that States and Territories: "agree to develop pricing policies for recycled water and stormwater that are congruent with pricing policies for potable water, and stimulate efficient water use no matter what the source, by 2006" (paragraph 66 (ii) refers).

2. These principles are intended to assist States and Territories in meeting their commitments to paragraph 66 (ii) of the NWI. It is not expected that these principles should be applied to prices retrospectively. It is also not expected that these principles should take precedent over any existing principles jurisdictions may have developed for recycled water and stormwater use.

3. The principles are intentionally flexible in some areas due to the heterogeneous and evolving nature of recycled water and stormwater reuse products and the widely different scenarios under which these schemes are implemented.

Principle 1: Flexible regulation

4. Light handed and flexible regulation (including use of pricing principles) is preferable, as it is generally more cost-efficient than formal regulation. However, formal regulation (e.g. establishing maximum prices and revenue caps to address problems arising from market power) should be employed where it will improve economic efficiency.

Principle 2: Cost allocation

5. When allocating costs, a beneficiary pays approach — typically including direct user pay contributions — should be the starting point, with specific cost share across beneficiaries based on the scheme's drivers (and other characteristics of the recycled water/stormwater reuse scheme).

Principle 3: Water usage charge

6. Prices to contain a water usage (i.e. volumetric) charge.

Principle 4: Substitutes

7. Regard to the price of substitutes (potable water and raw water) may be necessary when setting the upper bound of a price band.

Principle 5: Differential pricing

8. Pricing structures should be able to reflect differentiation in the quality or reliability of water supply.

Principle 6: Integrated water resource planning

9. Where appropriate, pricing should reflect the role of recycled water as part of an integrated water resource planning (IWRP) system.

Principle 7: Cost recovery

10. Prices should recover efficient, full direct[i] costs — with system-wide incremental costs (adjusted for avoided costs and externalities) as the lower limit, and the lesser of stand alone costs and willingness to pay (WTP) as the upper limit. Any full cost recovery gap should be recovered with reference to all beneficiaries of the avoided costs and externalities. Subsidies and Community Service Obligation (CSO) payments should be reviewed periodically and, where appropriate, reduced over time.

Notes:

i. Direct costs include any joint/common costs that a scheme imposes, as well as separable capital, operating and administrative costs. This definition of direct costs does not include externalities and avoided costs.

Principle 8: Transparency

11. Prices should be transparent, understandable to users and published to assist efficient choices.

Principle 9: Gradual approach

12. Prices should be appropriate for adopting a strategy of 'gradualism' to allow consumer education and time for the community to adapt.

Appendix A: COAG Water Resource Pricing Principles.

1. Prices will be set by the nominated jurisdictional regulators (or equivalent) who, in examining full cost recovery as an input to price determinations, should have regard to the principles set out below.
2. The deprival value methodology should be used for asset valuation unless a specific circumstance justifies another method.
3. An annuity approach should be used to determine the medium to long term cash requirements for asset replacement/refurbishment where it is desired that the service delivery capacity be maintained.
4. To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs [tax equivalent regime], provision for the cost of asset consumption and cost of capital, the latter being calculated using a WACC [weighted average cost of capital]. [Upper Bound pricing]
5. To be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future assets refurbishment/ replacement (as noted in (3) above). Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome. [Lower Bound pricing]
6. In applying (4) and (5) above, economic regulators (or equivalent) should determine the level of revenue for a water business based on efficient resource pricing and business costs. Specific circumstances may justify transition arrangements to that level.
7. In determining prices, transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, and tax equivalent regimes.

Notes:

i. The reference to ‘or equivalent’ in principles 1 and 6 is included to take account of those jurisdictions where there is no nominated jurisdictional regulator for water pricing.

ii. The phrase ‘not including income tax’ in principle 5 only applies to those organisations which do not pay income tax.

iii. ‘Externalities’ in principles 5 and 7 means environmental and natural resource management costs attributable to and incurred by the water business.

iv. ‘Efficient resource pricing’ in principle 6 includes the need to use pricing to send the correct economic signals to consumers on the high cost of augmenting water supply systems. Water is often charged for through a two-part tariff arrangement in which there are separate components for access to the infrastructure and for usage. As an augmentation approaches, the usage component will ideally be based on the long-run marginal costs so that the correct pricing signals are sent.

v. ‘Efficient business costs’ in principle 6 are the minimum costs that would be incurred by an organisation in providing a specific service to a specific customer or group of customers, or the minimum amount that would be avoided by not provided the service to the customer or group of customers. Efficient business costs will be less than actual costs if the organisation is not operating as efficiently as possible.

Appendix B: A framework for classifying water planning and management activities

This Appendix outlines a framework which classifies water planning and management activities. It is important to note that the costs of some of these activities will be allocated entirely to governments (e.g. water reform, strategy and policy). An asterisk (*) denotes the activities where this is the case.

It should be noted also that there will be capital and corporate services costs associated with each of the activities listed in the framework.

Capital costs can include the provision of infrastructure (e.g. physical works such as streamflow gauging stations, monitoring bores and control weirs) and systems (e.g. water registers and water accounting systems).

Corporate services can include the delivery of corporate services (e.g. legal, IT, communications, human resources, financial management and records management) and corporate planning functions (business and strategic planning and reviewing performance against these plans).

A. WATER REFORM, STRATEGY & POLICY (*)

1. Development of intergovernmental agreements

a) e.g. the National Water Initiative, Murray-Darling Basin Agreement, Lake Eyre Basin Intergovernmental Agreement etc.

2. Development of broad strategies for managing water

b) e.g. State Water Plan (Western Australia), Securing our Future Together – White Paper (Victoria), State Water Management Outcomes Plan (NSW).

3. Development and/or refinement of overarching statutory instruments

c) e.g. Water Management Act 2000 (NSW), Water Act 2000 (Queensland). Overarching legislation does not include statutory-based, catchment/valley/regional-level water plans or other secondary/subordinate legislation that operationalises water planning and management.

B. WATER PLANNING

1. Water resource planning

a) Development of water resource plans:
   i. Cross border water plans - sharing and management (inc. allocation) of water resources in cross-border areas;
   ii. Regional water plans - sharing and management of water resources between catchments where interconnectivity occurs (either naturally, or as a result of infrastructure, i.e. a pipeline);
   iii. Catchment scale water plans - allocation and sustainable management of water resources (strategic and operational), including planning for current and future water use, environmental flow arrangements;
   iv. Localised water plans - plans developed to address specific water resource problems (quantity or quality) at a local level;
   v. Other water plans - plans developed at a local or catchment level to address other water management issues, such as water or floodplain harvesting or

drainage issues;

b) Operationalisation and implementation of plans:
   i. development of rules for water sharing (including environmental shares);
   ii. determining water availability and distribution (e.g. announced/seasonal allocations);
   iii. establishing system operating rules, monitoring and reporting requirements etc.;
   iv. storage and delivery of water to achieve environmental outcomes;
c) Monitoring and evaluation of planning outcomes and progress against targets (including compliance);
d) Review of water resource plans / development of new plans.

2. Environmental and ecosystem management planning

a) Development of environmental management plans where related to water resources (e.g. salinity, blue green algae, riverine management);
b) Development of plans to manage water-dependent ecosystems (e.g. riverine zones, estuaries, wetlands).

C. WATER MANAGEMENT

1. Measures to improve water use

a) Water use efficiency programs (irrigation, commercial, urban);
b) Development of property level water management plans;
c) Great Artesian Basin Sustainability Initiative;
d) Flood Plain Management.

2. Construction of works (not significant water supply infrastructure)

a) Construction of weirs, replacement of bores etc., to achieve water management outcomes.

3. Environmental works

a) Works to reduce or remediate environmental impacts arising from water use.

D. WATER MONITORING & EVALUATION

1. Monitoring and evaluation of water resources

a) Water resource monitoring:
   i. Streamflow gauging;
   ii. Groundwater bore monitoring (pressure and levels);
   iii. Water quality monitoring (surface and groundwater resources).
b) Water use monitoring:
   i. Collection of water use information (metering, surveys).
c) Water resource assessment:
   i. Hydrological and hydraulic assessment;
   ii. Water quality assessment (e.g. turbidity, nutrient monitoring, salinity, algal blooms etc);
   iii. Surface water / groundwater interconnectivity;
   iv. Effects of land use change, land clearing, climate change, etc.

2. Monitoring and evaluation of water dependent ecosystems

a) Monitoring and evaluation of riverine health (flow and non-flow elements), wetland health, estuary health.

E. INFORMATION MANAGEMENT & REPORTING

1. Water resource accounting

a) Development of frameworks and systems;
b) Data collection and processing.

2. Publication of water resource information

a) Water use statistics, water trading statistics, resource condition and assessment reporting, etc.

F. WATER ADMINISTRATION & REGULATION

1. Administration of entitlements and permits

a) Granting of water allocations, entitlements and permits to users (incl. bulk water entitlements);
b) Processing of applications and transactions;
c) Management of bulk water entitlements;
d) Ensuring compliance with licence and other conditions;
e) Regulation of water-related works or developments (e.g. dams, bores, pumping equipment);
f) Benchmarking costs and standards of water planning and management activities (where applicable).

2. Development of entitlement frameworks

a) Overland flow, interception, non-use 'entitlements'.

3. Administration of water trading arrangements

a) Development and regulation of trading frameworks;
b) Facilitation and administration of water trading.

4. Business administration

a) Pricing review and implementation;
b) Financial management and reporting (e.g. costing, revenue monitoring);
c) Billing and debt management.

5. Administration of water metering arrangements

a) Development of metering requirements and standards;
b) Implementation of metering requirements;
c) On-going management of metering activities.

G. WATER INDUSTRY REGULATION

1. Oversight of water businesses

a) Review of water business operations to ensure compliance with statutory requirements.

Appendix 5: Terms of Reference

NOTICE OF REFERRAL FOR AN INQUIRY INTO POTABLE WATER AND SEWERAGE PRICING IN SOUTH AUSTRALIA

PURSUANT TO PART 7 OF THE ESSENTIAL SERVICES COMMISSION ACT 2002

FROM: **Kevin Foley, Treasurer**

TO: **The Essential Services Commission of South Australia**

RE: **Potable water and sewerage prices in South Australia from July 2010 to June 2011.**

BACKGROUND:

1. Pursuant to section 35(1) of the *Essential Services Commission Act 2002* (the Act), the Commission must conduct an inquiry into any matter that the Minister, by written notice, refers to the Commission.

2. The Act is committed to the Treasurer by way of *Gazettal* notice dated 12 September 2002 (p. 3384).

3. The South Australian Government proposes to publish the attached Transparency Statement on SA Water's potable water and sewerage prices.

4. The Transparency Statement links the South Australian Government's decision on potable water and sewerage prices to the National Water Initiative Pricing Principles. It also provides information on SA Water's financial and operating performance, expenditure, revenue, community service obligations, capital expenditure program, profit and its distribution.

REFERRAL:

I, Kevin Foley, Treasurer, refer to the Commission the matter described in paragraph (a) of the Terms of Reference for inquiry, in accordance with those matters in paragraphs (b), (c) and (d) of the Terms of Reference and subject to the Directions set out in this Notice.

TERMS OF REFERENCE:

The following are the Terms of Reference for the inquiry referred pursuant to section 35(1) of the Act:

(a) The Commission is to inquire into the price setting process undertaken in the preparation of advice to Cabinet, resulting in Cabinet making its decision on the level and structure of SA Water's 2010-11 potable water and sewerage prices having regard to the adequacy of the application of:

   a. the 1994 COAG pricing principles;

   b. the National Water Initiative, specifically, Clause 65 on pricing principles for urban areas, Clause 66(i) on pricing in the metropolitan area and Clause 66(v) on pricing in regional areas; and

   c. the National Water Initiative Pricing Principles for the recovery of capital expenditure and urban water tariffs.

(b) In undertaking this inquiry, the Commission is to take into account:

   a. the National Water Commission *Second Biennial Assessment of Progress in Implementation* with respect to Clauses 65, 66(i) and 66(v); and

   b. the attached *Transparency Statement – Part A – 2010-11 Potable Water and Sewerage Prices South Australia* dated May 2010.

(c) In considering the processes undertaken for the preparation of advice to Cabinet, the Commission is to advise on the extent to which information relevant to the 1994 COAG pricing principles, the National Water Initiative and the National Water Initiative Pricing Principles was made available to Cabinet.

(d) These terms of reference specifically do not extend to additional information on alternative approaches to setting prices.

REQUIREMENTS FOR INQUIRY:

The following requirements are made pursuant to section 35(5) of the Act:

(a) I require that the Commission undertake its inquiry and submit a Draft Report to the Treasurer and the Minister for Water by no later than three months after receipt of these Terms of Reference;

(b) I require that the Commission submit a Final Report on the inquiry to the Treasurer and the Minister for Water by no later than six weeks after submitting the Draft Report;

(c) In conducting the inquiry, the Commission is not required to hold public hearings, public seminars or workshops but may receive and consider any written submissions as it thinks appropriate and it must advertise to call for written submissions to be lodged no later than 28 days from the date of publication of the Notice of Inquiry; and

(e) SA Water is to meet the reasonable costs of the Commission in undertaking the inquiry.

If the Commission requires further information in relation to this inquiry, it may contact the Director, Regulatory Policy, Revenue and Economics Branch, Department of Treasury and Finance.

DIRECTIONS:

The following directions are made pursuant to section 35(5)(f) of the Act:

I direct that in undertaking its inquiry the Commission must preserve the confidentiality of any information, material or documentation provided by the Government to enable the Commission to undertake its inquiry, and to that end must enter into a Deed of Non-Disclosure with the Crown in right of the State of South Australia. I hereby authorise the Under Treasurer to act as agent for and on behalf of the Crown for that purpose. Further, the Commission must require any consultant firm or person providing consultancy services to the Commission in relation to the inquiry to be made a party to that Deed. A copy of the Deed will be made available to the Commission for comment.

Kevin Foley
TREASURER
9/6/2010

Appendix 6: WACC methodology

Values of WACC input parameters*

Assumptions	Low	High	Average
Market risk premium	6%	6%	6%
Risk free rate of interest (real)	2.54%	2.54%	2.54%
Risk free rate of interest (nominal)	6.17%	6.17%	6.17%
Corporate tax rate	30%	30%	30%
Gamma	0.5	0.5	0.5
Inflation forecast	3.54%	3.54%	3.54%
Debt margin	1.00%	1.2%	1.1%
Cost of debt (pre tax nominal)	7.17%	7.37%	7.27%
Debt to entity value	50%	60%	55%
Equity beta	0.6	1.0	0.8
Cost of equity (post-tax nominal)	9.77%	12.17%	10.97%
WACC Results			
Nominal post tax WACC	6.53%	7.10%	6.86%
Real pre tax WACC	5.59%	6.38%	6.05%

* Estimated as at 24 October 2007

WACC methodology

Post-tax nominal WACC

The following formula was used to estimate the post-tax nominal WACC.

$$WACC = \frac{K_e * (1-t)}{[1-t*(1-\gamma)]} * \left(\frac{E}{D+E}\right) + K_d * (1-t) * \left(\frac{D}{D+E}\right)$$

where:

Kd = cost of debt

Ke = cost of equity

D = amount of debt in capital structure

E = amount of equity in capital structure

γ = gamma

t = tax rate

Pre-tax real WACC

The forward transformation was then adopted to convert the post-tax nominal WACC to the pre-tax real WACC.

Forward Transformation

Step 1 — convert post-tax nominal into pre-tax nominal using an appropriate tax rate

Step 2 — convert pre-tax nominal into pre-tax real using the Fisher equation.

Input Values

The input values used to calculate the post-tax nominal WACC and the pre-tax real WACC are described below.

Cost of Debt

The cost of debt is a significant component of the WACC and is the sum of the risk-free rate and the debt margin.

Risk-free Rate

The nominal risk-free rate is estimated using the 20-day average of the yield on 10-year Government Bonds.

Debt Margin

The debt margin is the interest margin above the risk-free rate of interest, which would be incurred by an efficient water business.

Cost of Equity

The cost of equity is estimated, using the CAPM, as the sum of the risk-free rate of interest and a premium considered sufficient to compensate equity holders for systematic risk.

Market Risk Premium

The market risk premium (MRP) represents the rate of return required by equity holders above the risk-free rate of interest.

Equity Beta

The equity beta represents the responsiveness of the return on equity to the market (or systematic risk). An equity beta of 1 indicates that the variability of returns is consistent with the market portfolio.

Gearing ratio

The gearing ratio adopted is the proportion of the total asset value attributable to debt, the remainder being attributable to equity.

Other inputs to the Post-tax nominal WACC

Gamma

Gamma represents the value of franking credits under the dividend imputation system as a proportion of tax payments.

Tax Rate

The tax rate represents tax payable as a proportion of taxable income.

Expected Inflation

Expected inflation is estimated using the Fisher equation on the basis of the 20-day average of the nominal and inflation indexed 10-year Government Bond yields.

Appendix 7: SA Water's Annual Efficiency Report

ANNUAL EFFICIENCY REPORT

November 2009

Contents Page

EXECUTIVE SUMMARY

The *Annual Efficiency Report* is a key component of the Government's annual determination of SA Water's water and wastewater prices. The Report aims to demonstrate that the Corporation's activities are undertaken efficiently and effectively within the requirements of the legislative and operating environment of the Corporation.

The principal legislative instrument bearing on the Corporation's efficiency is the Public Corporations Act 1993 under which the SA Water Board is charged with the responsibility to 'secure continuing improvements of performance' (section 14). The Corporation's operations are also specifically bound by the Waterworks Act 1932 and the Sewerage Act 1929 and their extensive sub-ordinate legislation.

As a public corporation, SA Water through its Board, is directly responsible to its Minister, the Minister for Water, for its operations and, as part of the wider public sector, must comply with the suite of governance and accountability processes established to assure the community that public services are provided appropriately and efficiently. Some of these include the annual Parliamentary estimates and review process, the Parliamentary Committees (e.g. the Economic and Finance Committee, Public Works Committee, the Environment, Resources and Development Committee) and the independent investigative and audit processes of the South Australian Auditor-General.

In addition to this legislative framework the Corporation is also bound by an array of operational legislative instruments, Federal, State and local, that directly impact on the manner in which the Corporation provides its services. These include the Federal Environment Protection and Biodiversity Conservation Act 1999, and Trade Practices Act 1974, and the South Australian Environment Protection Act 1991.

In addition to this overlay of public accountability and scrutiny, in response to the reforms arising from the National Competition Policy of 1993, the urban water industry in Australia had since 1995, published a comprehensive annual performance report, *WSAAfacts*. This publication, the most detailed performance report of any industry sector in the nation, presented information about each participating water utility's performance in a range of customer service, system, water quality, environmental and financial indicators. Since 2004 - 05 this document has been subsumed by a larger performance report required as part of the National Water Initiative. The National Performance Report (NPR) now includes a greater range of performance criteria and also encompasses the non-urban water sector. SA Water has actively participated in this industry performance reporting.

Recognising the need to drive the Corporation's operations in an holistic and sustainable manner, in 2006 SA Water developed a set of strategic objectives and targets that guide the decisions and planning processes of the business: these are incorporated into a Strategic Map (SM).

The SM is built on five core pillars:

- Customer Service and Water Quality;
- System Performance;
- Sustainable Future;
- People and Culture; and
- Commercial Success.

The SM is an active part of the business's activities and achievement of the performance targets is reviewed on a monthly basis and reported to the Board. Each year a review is conducted regarding performance against each Strategic Key Performance Indicator (KPI) for the preceding year. These reviews are then consolidated into an Annual SM KPI Review. The review provides analysis concerning actual performance, the accuracy of forecasting during the year and what actions were taken or are planned.

The *Annual Efficiency Report* includes for the second year results of this internal performance reporting. This performance review is complemented by comparison benchmarking of performance with a range of other water utilities in both urban and non-urban areas.

Due to the level of detail contained in the report, this Executive Summary is necessarily confined to a high level summation of the performance within the subheadings of the SM structure.

Customer Service and Water Quality

SA Water delivered a high level of service to both its metropolitan and regional customers in 2008-09, in relation to customer service indicators. Regional service levels achieved in 2008-09 improved significantly when compared with the levels achieved in 2007-08.

Water restrictions and a new rebates program led to unprecedented levels of customer contact in 2008-09. During this period, the Customer Contact Centre relocated to Victoria Square and this, combined with the increase of customer contacts, impacted on the Corporation meeting some of its internal customer targets.

Annual customer survey results reveal that, overall, customers are very satisfied with the levels of services provided by the Corporation. SA Water is aiming to further improve its customer service targets by 2013-14.

SA Water is also delivering a very high level of service to metropolitan and regional customers in water quality as reflected in compliance with the Australian Drinking Water Guidelines. This is despite the water quality challenges of generally poor source water quality and the current dry climatic conditions.

The Corporation's performance in the metropolitan area relative to other water utilities has been strong in both microbiological compliance and limiting water quality complaints.

The regional performance in microbiological compliance was strong relative to other water utilities. Whyalla reported a strong performance in limiting water quality complaints, while Mt Gambier reported a poor result relative to previous years due to a change in source water for a couple of months.

SA Water is aiming to improve or maintain these already high levels of service. Due to current climatic conditions, SA Water will increase its focus on source water monitoring which may increase costs in the short-term.

System Performance

When benchmarked against other water utilities for system performance SA Water is achieving a high level of service in the provision of water services in the metropolitan area. In the regional area, the Corporation reported a high level of service in Mt Gambier and moderate level of service in Whyalla.

Reporting in several areas is still being fine-tuned, but as data quality improves the Corporation has strategies in place to improve system performance.

SA Water continues to monitor its performance in sewer overflows and is seeking to further reduce overflows in the metropolitan area by 2013-14 while maintaining its regional targets.

The Corporation reported a decrease in the number of sewer main breakes and chokes in 2007-08 compared with 2006-07, in the metropolitan as well as regional areas. The metropolitan level of performance was at the higher end of sewer main breaks and chokes, when compared with other metropolitan utilities. Both regions had excellent performance levels and were the top two performing regional utilities for 2007-08.

While SA Water's sewer assets are experiencing an increasing trend in chokes due to dry conditions, abatement programs as well as targeted preventative maintenance have been put in place to manage the impact of these incidents on customers.

SA Water is seeking to reduce the impact of sewerage asset failures on customers by 2013-14. To meet these objectives, the Corporation is increasing its sewer cleaning and preventative maintenance programs in an attempt to further improve these service levels.

Sustainable Future

The implementation of water restrictions has had a positive impact on reducing average water consumption, with the 2007-08 result showing a continued decrease in average consumption. The Corporation is undertaking several initiatives to continue this trend.

The Corporation has maintained compliance with its water licences despite the significant challenges presented by the current drought conditions. Maintaining compliance imposes cost pressures on SA Water in the form of investments in water security initiatives.

SA Water has generally performed at a high level in sewerage services. In particular, it has continued as a national leader in recycling water, and maintained a strong performance in re-using bio-solids as well as sewerage treated to the tertiary level. Furthermore, the Corporation has complied with all Environment Protection Agency (EPA) licence conditions and has reduced the number of serious wastewater notifications to the EPA.

The Corporation will continue to closely monitor the risks associated with overflows to the environment where its performance is at the average of compared utilities in the metropolitan area.

Going forward SA Water is aiming to improve wastewater service levels by increasing the percentage of wastewater recycled and reducing the number of Type 1 and Type 2 wastewater notifications to the EPA. Where performance is already high, SA Water will aim to maintain service levels into the future.

For its metropolitan sector, SA Water's net greenhouse gas emissions in recent drought years are high compared to other utilities due to its electricity use caused by the need to pump water from the River Murray. Up to 90% of Adelaide's water is supplied from the River Murray in drought years.

SA Water is seeking to reduce its greenhouse gas emissions going forward to comply with the Kyoto Protocol (108% of 1990 levels by 2012) and several initiatives are being implemented to enhance electricity efficiency as well as reduce the Corporation's environmental impact.

Commercial Success

Water security continues to be the primary driver for significant increases in operating costs for the Corporation. Due to drought conditions SA Water has been pumping around 90% of its annual metropolitan water supply from the River Murray since 2006-07, as well as enforcing continued water restrictions. In the future water security will be provided by the Adelaide Desalination Plant (ADP), although this level of security will come at a significant cost, in particular the increased electricity costs associated with the energy intensive nature of the desalination process.

The Corporation continued its high performance in regards to operating costs in comparison to other entities with all four business segments (metropolitan water supply, metropolitan sewerage services, regional water supply and regional sewerage services) reporting well below the weighted average for 2007-08. The Corporation's operating costs per property were low compared to the other major metropolitan and regional water utilities in Australia. Since 2003-04 costs have increased marginally, due mainly to the Environmental Improvement Program that has delivered significant improvements in environmental compliance and performance.

The Corporation's operating cost per property for water supply for 2007-08 decreased marginally following a substantial increase in 2006-07. The majority of the metropolitan entities reported an increase in real operating cost per property for water supply in 2007-08, as utilities worked to secure additional water supplies and manage customer demand in the current drought conditions. Despite these challenges, the Corporation's metropolitan operating cost per property was in the lower bounds of industry performance, having the forth lowest operating cost per property for metropolitan water services. The Corporation has reduced its electricity costs per kilolitre for major pumping and is undertaking focused work to actively improve electricity efficiency going forward.

Other cost pressures relating to the climatic conditions have been incurred in maintaining service levels and responsiveness to customers, ensuring water licences are not exceeded and planning for future water security measures, including the H_2Ome Rebate Scheme and enforcement of water restrictions.

The Corporation continued its high performance with respect to metropolitan sewerage services, when compared to other entities, and had the lowest operating cost per property in 2007-08, a trend since 2002-03.

SA Water's regional operating cost per property for water services is second lowest of the six companies compared for both 2006-07 and 2007-08. SA Water's operating costs per property for regional water supply display a marginal increasing trend since 2003-04 largely associated with several key regional water initiatives which increased the amount of treated water delivered to customers. An increase in operating costs in 2007-08 is largely due to the Country Water Quality Improvement Program – Stage 3, where a further 17 regional communities now receive treated and filtered water from the River Murray.

SA Water's regional operating cost per property for sewerage is in the midrange of the six companies compared for both 2006-07 and 2007-08 and well below the regional weighted average. The Corporation's real operating costs for regional sewerage services have increased marginally in 2007-08 due to increased operating costs associated with upgrades to several regional wastewater treatment plants and a general increase in workload as a result of expanding hills and regional development. These upgrades have had a positive impact on service standards, increasing the percentage of water recycled and helping SA Water ensure the Corporation continues to be EPA compliant.

Going forward the Corporation's real operating cost per property in the water business is expected to increase. The increases are driven by water security initiatives, the Adelaide Desalination Plant (ADP) being the most significant, as well as continuing the water efficiency rebates and water restrictions. Sewerage costs are expected to increase slightly from 2009-10, reflecting an increase in environmental compliance requirements as well as the need to meet demand growth.

Historically, the Corporation's level of capital expenditure for metropolitan water supply has been low, compared with other utilities. In 2007-08, the Corporation increased its level of capital expenditure and this trend is set to continue as enhanced levels of water security are delivered, with the ADP being a significant component of capital expenditure for 2008-09 through to 2011-12.

SA Water has delivered a number of significant water supply projects in regional South Australia from 2001-02 to 2007-08. These projects have significantly improved the level of service to several areas.

The Corporation's capital expenditure in relation the wastewater has remained below the industry's weighted average for both metropolitan and regional segments from 2002-03 to 2007-08. The capital spend has been focused predominantly on meeting enhanced environmental standards and reducing the impact of the Corporation's wastewater treatment plants on the environment. Delivery of these projects has increased the levels of water recycled as well as reduced the environmental impacts of the Corporation's wastewater treatment plants.

Forecast capital expenditure is set to peak in 2009-10 primarily driven by the ADP, demonstrating the focus on improving the State's water security. In the sewerage services segments the emphasis will remain on reducing the Corporation's environmental impact and ensuring capacity to meet demand growth.

Value for Money

The Customer Satisfaction Survey conducted by the Corporation in June 2009 indicates customers are generally very satisfied with the range and quality of services provided by the Corporation. Eighty-four per cent (84%) of responses to the survey consider that the price of water represents good value.

The standard of service offered by the Corporation to its customers is predominately at the mid-to-high range in the metropolitan area and in the mid range in the regional areas when compared with the service levels offered to customers by the other water bodies.

While SA Water's operating costs for water supply and wastewater services are comparatively low in Adelaide when compared with other Australian cities, average water and wastewater bills are comparatively mid range, but above the weighted average. To some extent this level of contribution may reflect the relative quality of assets which provided a generally high level of service.

In addition to the quality service provided to customers, the Corporation provides the Customer Assist Program, aimed at identifying customers who are having difficulties paying their bills and providing assistance as early as possible to help prevent customers falling into a utility debt spiral.

1. Introduction

1.1 AIM

The primary purpose of this report is to review the efficiency of the operations of the South Australian Water Corporation ("SA Water" or the "Corporation"). The review is undertaken as a key input into processes for:

- The annual pricing submission – to assist Cabinet in its deliberations about pricing by demonstrating that water and wastewater prices are based on "efficient resource pricing and business costs for a given or improving level of service" (COAG Water Reform Agreement 2003) and accordingly are compliant with CoAG pricing principles;

- Business planning – to identify key trends, strengths, weaknesses, opportunities and threats. These are factored into strategy setting processes as a part of the environmental scan process; and

- Budgeting – to demonstrate to the Government (as owner) that the Corporation's budgets and financial targets are reflective of an efficient business.

1.2 SCOPE AND STRUCTURE

The report firstly focuses on the Corporation's performance to date. It assesses service levels provided by the Corporation and how much it has cost the Corporation to deliver these services to customers. The Corporation's past performance for both metropolitan and regional areas is also benchmarked against comparable Australian utilities for service levels and cost of delivery.

The report then builds a bridge from past performance to future performance to show how the Corporation is aiming to maintain or improve its service levels to customers. The report assesses whether the cost pressures affecting the Corporation allow these increased levels of service to be delivered and whether the remaining cost base is efficient.

Finally, the report provides an analysis of the value for money that customers obtain from using the Corporation's services. This is also benchmarked against the value for money of other utilities based upon publicly available information.

For presentation purposes, the report is structured on four of the five Strategic Objectives of the Corporation, namely:

- Customer Service & Water Quality (Chapter 2);
- System Performance (Chapter 3);
- Sustainable Future (Chapter 4); and
- Commercial Success (Chapter 5).

Chapter 6 details the Value for Money analysis.

1.3 SOURCE DATA

The data contained in this report has been sourced from several key performance measurement tools including:

- SA Water's internal Strategic Map (SM);
- National Performance Report (NPR), published by the Water Services Association of Australia (WSAA) and the National Water Commission (NWC); and
- SA Water's financial accounts.

Note that financial data presented is consistent with the Corporation's approved 2009-10 Budget (and forward estimates). The financial data does not include recent updates, such as the 2009-10 Mid Year Budget Review or the 2010-11 Pricing decision.

All figures presented in Chapter 5 are in real 2007-08 dollars, consistent with the 2007-08 NPR. Capital expenditure has also been stated on a net of Federal funding basis, consistent with the regulatory approach used to set water and sewer prices.

For the purpose of this Report, comparisons for metropolitan operations are made with twelve similar metropolitan water and wastewater utilities.

For regional operations, comparisons of performance are made with seven other regional water and wastewater utilities.

For the benchmarking analysis, where a utility has not reported data the utility's name is not shown in the Table.

Further details on the source data used in this Report are provided in Attachment 3.

1.4 COMMERCIAL IN CONFIDENCE

This Report is based on an earlier draft that was prepared for Cabinet as part of the 2010-11 pricing decision.

The Corporation has made editorial changes and excluded, where necessary, information that is commercial in confidence in preparing this version of Report.

2. Customer Service and Water Quality

2.1 CUSTOMER SERVICES

While SA Water continued to deliver a high level of service, it was unable to meet all of its internal targets with regard to customer services.

Water restrictions and a new rebates program led to unprecedented levels of customer contact in 2008-09. During this period, the Customer Contact Centre relocated to Victoria Square and this, combined with the increase of customer contacts, impacted on the Corporation meeting its internal customer targets.

Annual customer survey results reveal that, overall, customers are very satisfied with the levels of service provided by the Corporation. SA Water is aiming to further improve its customer services targets by 2013-14.

This section provides an overview of the Corporation's performance in customer service in terms of the following indicators featured in either the SM or NPR.

Section	Indicator	SM	NPR
2.1.1	Compliance with Draft Customer Charter – Metropolitan Water & Sewer Service	√	
2.1.2	Compliance with Draft Customer Charter – Regional Water & Sewer Service	√	
2.1.3	Compliance with Draft Customer Charter – Customer Contact	√	
2.1.4	Per cent of calls answered by an operator within 30 seconds		√
2.1.5	Compliance with Draft Customer Charter – New Connections	√	
2.1.6	Customer Satisfaction Index	√	

Four of these indicators (see 2.1.1, 2.1.2, 2.1.3 and 2.1.5), each involving internal measures included in the Corporation's SM, address compliance with the Draft Customer Charter and

hence compliance with a range of criteria (service standards). For example, in relation to Metropolitan Water & Sewer Service there are currently 32 criteria against which service is assessed including measures in relation to restoration of unplanned water supply interruptions; restoration of unplanned sewer interruptions; and attendance and clean up times of sewer overflows. The measure in relation to Regional Water & Sewer Service is similar involving assessment of performance against 20 criteria. The measures in 2.1.3 and 2.1.5 similarly reflect compliance against multiple criteria although the number of criteria (i.e. as specified in the Draft Customer Charter) is less.

2.1.1 Compliance with Draft Customer Charter – Metropolitan Water & Sewer Service (SM)

This KPI measures compliance against the following service standards in the Draft Customer Charter for the metropolitan area: restoration of unplanned water supply interruptions; restoration of unplanned sewer interruptions; and attendance and clean up times of sewer overflows.

Strategic Map Targets		**2006-07 Actual**	**2007-08 Actual**	**2008-09 Actual**	**2013-14 Target**
Achieve Compliance with Draft Customer Charter					
Water & Sewer Services	Metro	19/20 (19/20)	31/32 (30/32)	31/32 (30/32)	95%

Note: Targets for each year are shown in brackets below the annual result. The number of criteria reported increased from 20 in 2006-07 to 32 in 2007-08 and is subject to change due to the draft nature of the Customer Charter.

Performance

Of the 32 criteria reported in 2008-09, 31 (97%) met their associated target thus achieving the overarching target in respect of compliance with the Draft Customer Charter target - meeting the targets for 30 of the 32 criteria. The one criterion not achieved in 2008-09, was '*Attendance at 100% of Water Supply Complaints within 2 Business Days'.* Performance of 99.3% was achieved against a target of 100%, with five of the 726 events missed. Four of these five missed events occurred in the month of March 2009, and were a result of available resources being diverted to attend to an unusually high number of reported bursts. While the target was not achieved the level of service provided was still of a very high standard.

Going Forward

Performance going forward is expected to remain at a high level through to 2013-14.

2.1.2 Compliance with Draft Customer Charter – Regional Water & Sewer Service (SM)

This KPI measures compliance against the following service standards in the Draft Customer Charter in regional areas: restoration of unplanned water supply interruptions; restoration of unplanned sewer interruptions; and attendance and clean up times of sewer overflows.

Strategic Map Targets		2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Achieve Compliance with Draft Customer Charter					
Water & Sewer Services	Regional	20/31 (29/31)	22/33 (31/33)	31/33 (31/33)	95%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

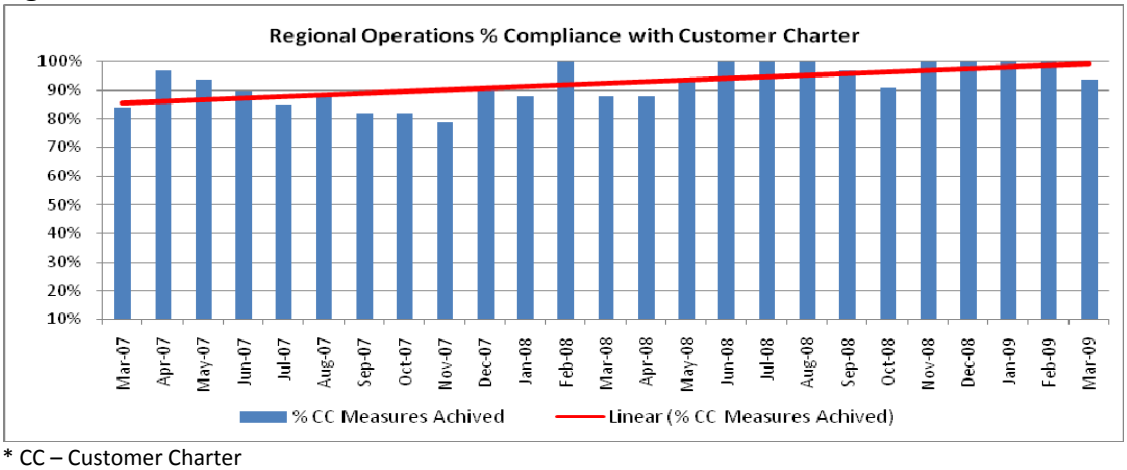
Performance

Of the 33 criteria reported in 2008-09, 31 (94%) met their associated target thus achieving the overarching target in respect of compliance with the Draft Customer Charter target. Reasons for missing events were either:

- conflicting priorities when other events occurred at the same time;
- knowingly missing events for occupational health and safety reasons (such as dangerous conditions at night); and
- scheduling process failures, whereby the priority event was not called through to the field within the prescribed timeframe.

In 2009-10, the basis of calculation for this indicator will be changed to reflect the actual number of events achieved as opposed to the number of Draft Customer Charter criteria met. The 2008-09 results are consistent with the future basis for determining compliance. Of the 3,432 Customer Charter related jobs logged for the year, 3,411 were completed on target. This reflects a 99% compliance as compared to the 2009-10 compliance target of 95%.

Figure 2.1



* CC – Customer Charter

Going Forward
The Corporation is well on track to achieve the performance target for 2013-14. As indicated by Figure 2.1 above, actions taken by the Corporation have had a positive impact on performance, with performance expected to continue to trend upwards.

2.1.3 *Compliance with Draft Customer Charter – Customer Contact (SM)*

This KPI measures compliance against the following customer contact standards in the Draft Customer Charter: average time to answer a telephone call to the Corporation's Customer Contact Centre; percentage of all routine written enquiries responded to within 10 working days; percentage of complaints responded to within 5 working days; percentage of all investigative correspondence resolved within 20 working days; percentage of enquiries resolved at first point of contact face to face or via the telephone; and percentage of applications to discharge trade waste into the sewer system processed within 10 working days.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Achieve Compliance with Draft Customer Charter				
Customer Contact	3/4 (4/4)	3/6 (6/6)	2/6 (6/6)	100%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result. The number of criteria reported increased from 2006-07 to 2007-08 and is subject to change due to the draft nature of the Customer Charter.

Performance
A record 800,000 enquiries and requests were managed by the Customer Contact Centre over 2008-09 with responses to customers, either in person, in writing or by phone. Water restrictions and a new rebates program were the key issues that led to the unprecedented levels of customer contact.

In 2008-09, 2 of the 6 Customer Contact criteria were met. These were:

- percentage of applications to discharge trade waste into the sewer system processed within 10 working days; and
- percentage of complaints responded to within 5 working days.

Reasons for not meeting remaining criteria are as follows:

- telephone customers waited on average 28 seconds for their call to the Customer Contact Centre to be answered (compared to the target of 20 seconds) for four months of the year. This result was predominately due to physical relocation of the Customer Contact Centre to the new building in Victoria Square. Delays arose primarily due to new communications technology, training of new staff and resourcing the new front counter. By February, call waiting times were back down to around 20 seconds;

- the target for percentage of all routine written enquiries responded to within 10 working days was missed marginally due to resources being diverted to respond to the increased call volumes and other issues associated with the relocation to Victoria Square; and
- percentage of enquiries resolved at first point of contact, face to face or via the telephone, decreased slightly due to the co-location of functions to the one Victoria Square facility – resulting in redirection to specific areas of the business after first contact.

These non-conforming criteria were all heavily impacted by the relocation to Victoria Square and increased call volumes as these customer contact indicators are inter-related. As call answer time increases, resources are diverted away from other customer contact areas to reduce the call waiting time. Customer contact indicators have now returned to pre-relocation levels.

Going Forward
Customer Contact performance is expected to improve going forward, as reflected by the SM target of 100% in 2013-14. The percentage of enquiries resolved at first point of contact was removed from the Customer Contact criteria in the 2008-09 year as it no longer reflected the intent of the Customer Charter.

2.1.4 Per cent of calls answered by an operator within 30 seconds (%) (NPR)

This KPI measures the proportion of calls that, where the customer has selected a relevant operator option, are answered by an operator within 30 seconds.

As part of the ongoing review of the NPR performance measures, this indicator has replaced *'Connect time to an operator (in seconds)*' as reported in previous years. SA Water was unable to report against this new indicator due to the manner in which SA Water stored data (prior to moving to Victoria Square). Due to the magnitude of information accumulated in the SA Water call centre, only the previous 3 months worth of data is stored at any one time.

Going Forward
SA Water's approach to storing data from the Corporation's call centre changed with the move to Victoria Square in November 2008. The required data has been collected for 8 out of 12 months in 2008-09, precluding reporting for 2008-09. SA Water should be able to report on this indicator from 2009-10 onwards.

2.1.5 Compliance with Draft Customer Charter – New Connections (SM)

This KPI measures compliance against the following connection services in the Draft Customer Charter; percentage of standard water connections installed within 15 working days of processing the application and receiving the fees; and percentage of properties with a standard connection to sewer within 20 working days of processing the application and receiving the fees.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Achieve Compliance with Draft Customer Charter				
New Connections	0/4 (4/4)	0/2 (2/2)	0/2 (2/2)	100%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result. The number of criteria reported decreased from 2006-07 to 2007-08 and is subject to change due to the draft nature of the Customer Charter.

Performance

During the year, the business process for delivery of new water connections was reviewed with parts of the process revised. Improvements are already evident in improved performance in the post implementation months. In the business unit which completes new connections, internal performance targets are being met. Specifically, the business unit completes the new connection within 14 days of logging of the request. The main challenge to the achievement of the target is the time lag between when Customer Services receive the request and when it is scheduled for completion.

Going Forward

SA Water is aiming for improved service levels for new connections going forward to 2013-14.

Improvement in this area remains a focal point for the Corporation. It is expected that projects underway will assist in improving future performance.

2.1.6 Customer Satisfaction Index (SM)

This index is the mean response from the Random Household, Customer Contact Sample and Business Customer satisfaction scores in the annual SA Water Customer Satisfaction Survey.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Customer Satisfaction Index (residential customers)	8.2 (8.2)	8.0 (8.2)	8.0 (8.3)	8.4

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

The annual customer satisfaction survey measures satisfaction with SA Water as a service provider and the Corporation's attributes such as reliability, value for money, responsiveness and water quality.

The 2008-09 survey was conducted in June 2009 and, on a 0 to 10 scale, SA Water achieved overall satisfaction ratings of 8.0 (residential customers) and 7.8 (business customers). These excellent results demonstrate SA Water is continuing to meet the expectations of the overwhelming majority of customers, despite the impacts of drought, water restrictions, and increases in charges and changes in billing procedures (i.e. introduction of quarterly billing).

SA Water's customers rated the Corporation highly in terms of customer service, both over the phone and on-site and the Corporation was regarded as efficient, knowledgeable, professional and responsive. SA Water also scored well in the areas of high importance for consumers, namely, in the reliable supply of safe drinking water and good response times to problems.

While the overall satisfaction rating of 8.0 (residential customers) and 7.8 (business customers) are excellent, the results were short of the overall SM target of 8.3. Value for money has been identified as a key driver of overall customer satisfaction. Given the significant price increases for water in 2009-10, it is not expected that higher satisfaction scores will be achieved in the short term. The five year target of overall customer satisfaction of 8.3 or above will be difficult to achieve in the face of announced and future anticipated price increases for water.

Going Forward

The SM has a long term target of 8.4 by 2013-14.

SA Water is implementing a new customer satisfaction measurement system using the Common Measurement Tool (CMT). This will enable the Corporation's customer satisfaction levels to be compared with all State government departments and agencies. Based on results currently being achieved by other parts of Government, it is expected that the Corporation's results will compare favourably.

In 2008-09, SA Water commissioned a corporate reputation monitor, which will involve qualitative customer research and provide an opportunity for the Corporation to better understand customer and community requirements.

2.2 WATER QUALITY

SA Water is delivering a very high level of service to metropolitan and regional customers in water quality as reflected by compliance with the Australian Drinking Water Guidelines. This is despite the water quality challenges of generally poor source water quality and the current dry climatic conditions.

The Corporation's performance in the metropolitan area relative to other water utilities has been strong in both microbiological compliance and limiting water quality complaints.

The regional performance in microbiological compliance was strong relative to other water utilities. Whyalla reported a strong performance in limiting water quality complaints, while Mt Gambier reported a poor result relative to previous years due to a change in source water for a couple of months.

SA Water is aiming to improve or maintain these already high levels of service. Due to current climatic conditions, SA Water will provide an increased focus on source water monitoring which may increase costs in the short-term.

This section provides an overview of the Corporation's performance in water quality in terms of the following indicators.

Section	Indicator	SM	NPR
2.2.1	Compliance with Australian Drinking Water Guidelines	√	
2.2.2	Type 1 Drinking Water Quality	√	
2.2.3	Complaints – Water Quality (per 1,000 properties)		√
2.2.4	Percentage of Population where Microbiological Compliance was Achieved		√

2.2.1 Compliance with Australian Drinking Water Guidelines (SM)

This KPI measures compliance with the Australian Drinking Water Guidelines (ADWG) as measured by SA Water's Drinking Water Quality Index (Customer Taps) for metropolitan and regional supplies. The index assesses water quality at customer taps using the health-related criteria of the ADWG, in the following parameters: coliforms, E.Coli, disinfection by-products, free and total chlorine, heavy metals and other health related chemicals.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Achieve Australian Drinking Water Guidelines Compliance	99.8% (99.5%)	99.7% (99.5%)	99.8 (99.8)	99.8%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance
ADWG compliance in 2008-09 has been consistent at about 99.8%. This is despite deterioration in source water.

Going Forward
The Corporation's high level of performance is forecast to continue to 2013-14, meeting a target of 99.8% compliance.

Maintaining this high level of end-point compliance will be only part of the challenge. In line with the principles of the ADWG Framework, the Corporation will strive to continue to be proactive to improve key systems and to improve aesthetic (in addition to the 'health-related' criteria) water quality for customers.

New initiatives for 2009-10 currently being explored are (1) improved reporting to Operations (moving to a monthly reporting basis); and (2) ongoing investigations into the treatment of disinfection by-products.

2.2.2 Type 1 Drinking Water Quality (SM)

This KPI relates to the number of Type 1 drinking water quality notifications to the Department of Health. Type 1 incidents are defined as incidents that could cause serious risk to human health. (Note that SA Water does not necessarily have control of type 1 incidents. As such this indicator provides information on SA Water's operating environment rather than SA Water's performance).

The Incident Response Index (IRI) is a ratio of the number of Department of Health reportable incidents with a response within the required target time as a percentage of the total number of incidents. This is a composite index of response effort within predetermined targets against the following parameters: incident entered into Incident Management System; report incident to Department of Health by telephone; written report to Minister for SA Water; initial corrective actions taken; Root Cause Analysis performed; and preventative actions implemented.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Type 1 Drinking Water Quality				
Reduce Type 1 Drinking Water Quality Notifications to Department of Health	50 (60)	80 (54)	91 (49)	90
Improve Water Quality Management Index (WQMI) to 81%	n/a	n/a	n/a	81%
Improve Incident Response Index (IRI)	57% (50%)	67% (60%)	71% (70%)	84%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

During 2007-08, the number of Type 1 drinking water quality incidents reported to the Department of Health increased as a result of improvements made to the way drinking water quality incidents are defined, captured and reported.

While our Type 1 “count” in 2008-09 is high; water quality management of targeted individual water supply systems and management of risks improved. It is worth noting that in August 2009, the Board approved a revised indicator (the Water Quality Management Index) which measures water quality performance through a series of indicators associated with the management of water quality (as well as key quality criteria) rather than according to notifications. The new WQMI Reporting against the new index will commence in 2009-10 reflects the National Drinking Water Quality Guidelines framework.

2008-09 saw increased monitoring in locations considered to be of potential risk due to increases in the number of notifications, as in the case of disinfection by-products. We have an intensified focus on addressing the causes of "preventable" Type 1 notifications such as disinfection failures or inadequate treatment facilities of ground water.

The main causes for the current notifications were:

- Disinfection failures;
- Disinfection by-products (DBPs – mostly in outer reaches of long distribution systems requiring secondary dosing influenced by precursors in the source water);
- Chemical exceedances (mainly due to naturally occurring chemicals in the source water);
- Protozoa detections (following contamination of source water); and
- Blue green algae.

The strategies for reducing Type 1 incidents include capital improvements and improving robustness of the system operation. During this reporting period, as part of the Country Water Quality Improvement program, Cooltong and Woolpunda commenced receiving filtered water from United Utilities Australia (UUA) and United Group Infrastructure (UGI) plants.

Unlike the cause of occurrence of certain Type 1 incidents, the Corporation does have control over incidents measured by the IRI. The IRI result has been better than target for 2007-08 and 2008-09 and has improved since 2006-07. These results are particularly positive given the recent increases in the occurrence of Type 1 events.

Going Forward

While the Corporation will continue to monitor the number of Type 1 notifications, moving forward there will be an intensified focus on pro-active water quality management, to ensure that incidents are responded to appropriately and that corrective actions are implemented which prevent future controllable incidents from occurring. The Corporation's performance of the IRI is expected to continue to improve to 2013-14.

2.2.3 Complaints – Water Quality (per 1,000 properties) (NPR)

This KPI measures the total number of complaints received by the water business that relate to water quality, including water quality complaints resulting from operational practices. With respect to water quality, this is any complaint regarding: discolouration; taste; odour; stained washing; illness; or cloudy water (e.g. caused by oxygenation), etc. Any contact that results in a water quality issue is counted as a complaint. The measure does not include complaints relating to: service interruption; adequacy of service; restrictions, or pressure.

Figure 2.5 and Figure 2.6 show metropolitan and regional water quality complaints per 1,000 properties for 2005-06, 2006-07 and 2007-08.

Figure 2.5

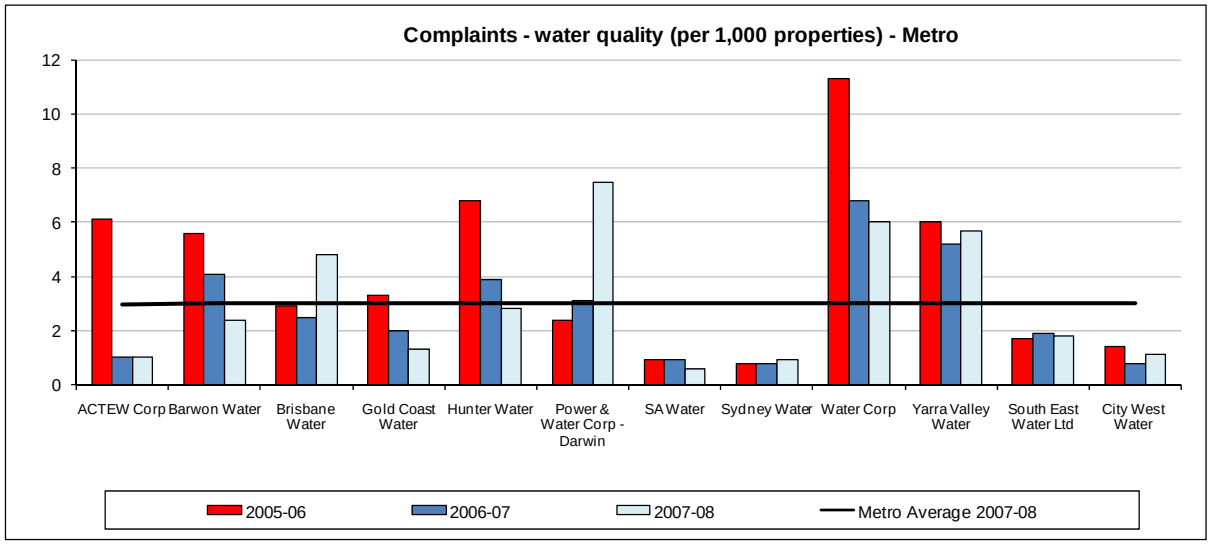
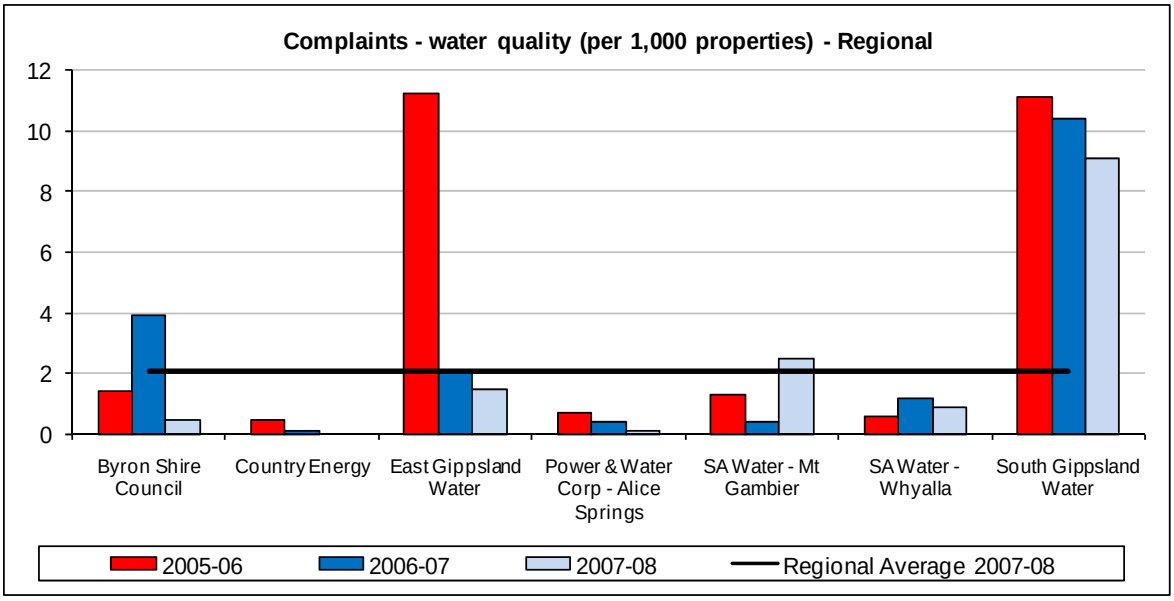


Figure 2.6



Performance

SA Water has consistently reported relatively low water complaint numbers in metropolitan operations, which have been below the average of all major utilities since 2005-06. This performance continued in 2007-08, where SA Water reported the lowest water quality compliant out of all the major utilities.

SA Water's reported regional performance showed an increase in water quality complaints for Mt Gambier and a decrease in Whyalla.

Mt Gambier reported an increase in water quality complaints per 1,000 properties from 0.4 in 2006-07 to 2.5 in 2007-08, which exceeded the regional average. The increase is attributed to changing Mount Gambier's water supply in August and September of 2007 from the Blue Lake to its confined aquifer bores. This was done to test the reliability of this alternative supply in readiness for some major pumping station modifications at the Blue Lake the following winter. The subsequent change in flow direction and greater hardness of the confined aquifer water resulted in the majority of the water quality complaints received in 2007-08.

Whyalla recorded a marginal decrease, from 1.2 in 2006-07 to 0.9 in 2007-08, but remained well below the regional average.

SA Water is in its third year of reporting data for water quality complaints. The trend for Adelaide is decreasing. Mt Gambier and Whyalla, on the other hand, experienced an erratic trend through the three years, more so in Mt Gambier.

Although not measured for NPR purposes, SA Water has also recently installed 10 water treatment plants along the River Murray to improve water quality to more than 90 rural communities and to ensure continued supply of water, even if the drought causes increased water quality issues.

Going Forward

SA Water's intentions to focus on pro-active water quality management, including extensive monitoring and water quality risk mitigation strategies for River Murray offtakes, will potentially reduce customer complaints around water quality. These include an enhancement of the routine monitoring program for all water supply offtakes. Due to current climatic conditions, SA Water will increase its focus on source water monitoring which may increase costs in the short-term but will enable SA Water to better mitigate the impact on customers.

In Mt Gambier, due to the pumping modifications in 2008-09, complaints may remain high, but in the longer term levels of complaints are expected to return to pre 2007-08 levels.

2.2.4 *Percentage of Population where Microbiological Compliance was Achieved (NPR)*

This KPI measures (as a percentage of the customer base) compliance of the microbiological quality of water supplied with the ADWG.

Percentage of population where microbiological compliance was achieved				
	State / Territory	2005-06	2006-07	2007-08
Metro				
ACTEW Corporation	ACT	100%	100%	100%
Barwon Water	Vic	99.8%	100%	100%
Brisbane Water	Qld	100%	100%	100%
Hunter Water	NSW	99.6%	99.8%	100%
Power & Water Corp - Darwin	NT	100%	100%	100%
SA Water	SA	100%	100%	100%
Sydney Water	NSW	100%	100%	100%
Water Corporation	WA	100%	100%	100%
Yarra Valley Water	Vic	100%	99.7%	100%
South East Water Ltd	Vic	100%	100%	100%
City West Water	Vic	100%	100%	100%
Gold Coast Water	Qld	100%	100%	100%
Metro Average		100.0%	100.0%	100.0%
Byron Shire Council	NSW	100%	100%	100%
Country Energy	NSW	100%	100%	100%
East Gippsland	Vic	100%	95%	100%
Power and Water Corp. – Alice Springs	NT	100%	100%	100%
SA Water– Mt Gambier	SA	100%	100%	100%
SA Water- Whyalla	SA	100%	100%	100%
South Gippsland	Vic	100%	100%	100%
Regional Average		100.%	99.3%	100%

Performance

All metropolitan and regional utilities reported a 100% microbiological compliance in 2007-08. All metropolitan and regional utilities (except Barwon and Hunter Water in 2005-06 and Yarra Valley and Hunter Water in 2006-07) have consistently reported 100% microbiological compliance for the past three years.

Going Forward

The Corporation aims to maintain microbiological compliance at 100%.

3. System Performance

3.1 WATER SERVICES

SA Water is achieving a high level of service in the provision of water services in the metropolitan area. In the regional area, the Corporation reported a high level of service in Mt Gambier and reported a moderate level of service in Whyalla.

Internal and external reporting in several areas is still in its infancy, but as data quality improves the Corporation has strategies in place to improve system performance.

This section provides an overview of the Corporation's performance in the provision of water services in terms of the following indicators.

Section	Indicator	SM	NPR
3.1.1	Number of Properties with >=3 Unplanned Water Interruptions per year	√	
3.1.2	Water Main Breaks per 100 km of Water Main		√
3.1.3	Infrastructure Leakage Index (ILI)		√

3.1.1 Number of Properties with >=3 Unplanned Water Interruptions per year (SM)

This KPI measures the number of customers (properties) that are subject to 3 or more unplanned water interruptions in a year. An unplanned water interruption is an interruption to a customer's water supply that is not planned or not a result of organised maintenance. This does not include a reduction in flow or pressure where normal activities (e.g. showering) are still possible.

Strategic Map Targets		2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Number of Properties with >=3 Unplanned Water Interruptions per year	Metro	1,733 (3,100)	1,606 (2,000)	1,262 (2,000)	2,000
	Regional	830 (1,100)	599 (830)	586 (830)	830

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

The reported performance for both metropolitan and regional areas was better than target for the years 2006-07, 2007-08 and 2008-09. Over the last three years the Corporation has seen clear performance improvement in both metropolitan and regional areas. It is worth noting that SA Water has also improved data capture in relation to these performance indicators.

Going Forward

Reporting on this measure is continually improving as data quality improves and the Corporation has strategies in place to improve overall system performance. For example, SA Water has a strategy of preventing the failure rate of water mains from increasing. To achieve this, the Corporation has analysed historical performance to predict future performance under various renewal strategies. To maintain performance at present levels a program of steadily increasing the water main renewals program has been established. Pipes are selected for replacement by closely monitoring their performance. Renewal priority is assigned on the basis of value for money achieved in reducing the number of customer interruptions and repair costs.

In this context, while the Corporation is aiming to maintain targets until 2013-14, targets will continue to be reviewed as data improves.

3.1.2 *Water Main Breaks per 100 km of Water Main (NPR)*

This KPI measures the total number of water main breaks, bursts and leaks in all diameter mains for the reporting period. Breaks exclude those in the property service (i.e. mains to meter connection) and weeps or seepages associated with above ground mains that can be fixed without shutting down the main.

Table 3.1

Water main breaks per 100 km of water main							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
Water Corporation	WA	13	14	14	15	13	14
Gold Coast Water	Qld				17	14	18
South East Water Ltd	Vic				18	24	21
SA Water	SA				21	27	25
Barwon Water	Vic						29
Sydney Water	NSW	51	38	38	42	35	30
Hunter Water	NSW	46.7	46.3	42.4	44.7	37.4	30.3
Brisbane Water	Qld	36.7	34.5	40	36.9	49.7	31.1
ACTEW Corporation	ACT					48	38
Power & Water Corp - Darwin	NT				55	41	41
Yarra Valley Water	Vic				43	57	49
City West Water	Vic				28	86	68
Metro Average		36.9	33.2	33.6	32.1	39.3	32.9
Regional							
SA Water - Mt Gambier	SA				5	2	3
Byron Shire Council	NSW				38	9	8
East Gippsland Water	Vic				7	9	11
Country Energy	NSW				13	10	18
SA Water - Whyalla	SA				20	13	22
South Gippsland Water	Vic				38	93	22
Power & Water Corp - Alice Springs	NT					56	49
Regional Average					20.2	27.4	19.0

Performance

Over the three year period SA Water has reported on this indicator, the Corporation has been a strong performer in the metropolitan area. Only Water Corporation, South East Water and Gold Coast Water performances surpassed SA Water's in 2007-08.

The weighted average of all major utilities reduced by nearly 20% from 2006-07 to 2007-08. The Corporation's performance has been significantly better than the average for the past three years.

SA Water's regional performance showed mixed results compared to 2006-07. For the third year, Mt Gambier was the clear leader with the lowest number of water main breaks in 2007-08, but showed a slight increase from 2006-07. Whyalla, on the other hand, reported a performance outcome similar to SA Water's metropolitan outcome.

There is a strong relationship between the increased rate of water main breaks and the continued dry seasonal conditions experienced into 2007-08. Ground movement and soil types are the two major causes of burst water mains. In Adelaide and in Whyalla in particular, soil types are such that seasonal changes in soil moisture greatly affect ground movement, which places pressure on pipes causing them to fail.

The 2008-09 figures[1] for Adelaide show a slight reduction to 23.7 breaks per 100km of main. Whyalla reported 13 breaks in 2008-09 (a decrease from 22 breaks in 2007-08) and Mt Gambier reported 2.0 breaks (down from 3.0 breaks in 2007-08).

Going forward

As mentioned previously, SA Water has a strategy of preventing the failure rate of water mains from increasing. To achieve this, the Corporation has analysed historical performance to predict future performance under various renewal strategies. To maintain performance at present levels a program of steadily increasing the water main renewals program has been established. SA Water is reviewing the forward investment program in light of the ongoing drought conditions to enable improved performance in the future.

3.1.3 Infrastructure Leakage Index (ILI) (NPR)

The ILI measures how effectively real water losses from the system are being managed at current operating pressure while accounting for other influential factors like length of mains and customer meter location. The ILI is calculated as the ratio of Current Annual Real Loss (includes leaks, bursts & overflows) to Unavoidable Annual Real Loss.

Table 3.2

Infrastructure Leakage Index (ILI)							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
Barwon Water	Vic	0.6	0.5	0.7	0.5	0.4	0.5
Gold Coast Water	Qld	2.5	2.7	1.5	1.4	0.7	0.8
ACTEW Corporation	ACT	1.3	0.9	1.0		0.5	0.9
South East Water Ltd	Vic	1.4	1.3	1.0	1.0	0.9	0.9
SA Water	SA	1.2	1.2	1.2	1.1	1.0	1.0
City West Water	Vic	2.0	1.4	1.2	1.3	1.2	1.0
Yarra Valley Water	Vic	1.3	1.0	1.4	1.2	1.1	1.1
Brisbane Water	Qld	2.3	2.4	2.4	2.2	1.7	1.2
Hunter Water	NSW	1.9	1.7	1.7	1.2	1.3	1.2
Sydney Water	NSW	2.9	2.1	1.8	1.5	1.5	1.5
Water Corporation	WA	1.5		1.6	1.7	1.5	1.7
Power & Water Corp - Darwin	NT	5.5	4.9	5.8	1.7	4.0	3.2
Metro Average		2.0	1.8	1.8	1.3	1.3	1.3

[1] The NPR 2008-09 was not released at the time of compiling this report.

Performance
The ILI is used by utilities around the world to report leakage and takes into account factors such as accuracy of meters, water used for fire fighting, theft, length of mains, number of connections and system pressure. WSAA considers an ILI in the range of 1.0 to 1.5 to be "Excellent" and 1.5 to 3.5 to be "Good to Fair".

In 2007-08 Metropolitan Adelaide was consistent with last year's "Excellent" result of 1.0, again well below the national metropolitan average of 1.3.

Adelaide's reactive soils are a major cause of leakage as soil movement pulls pipe joints apart and, in extreme cases, can crack the pipes. Over the six year period SA Water has reported on this indicator, the Corporation's performance has been consistently better than the average. Of the entities compared, Barwon Water, Gold Coast Water, ACTEW and South East Water have achieved a better result in the past two years.

SA Water did not report any regional indicators associated with water loss for the 2007-08 NPR, (i.e. ILI or real losses) as the data is still being compiled at this stage.

Going Forward
SA Water aims to maintain performance levels in the metropolitan area.

3.2 SEWER SERVICES

SA Water is closely monitoring its performance in sewer overflows and is seeking to further reduce sewer overflows in the metropolitan area by 2013-14 while maintaining its regional service levels.

The Corporation reported a decrease in the number of sewer main brakes and chokes in 2007-08 compared with 2006-07, in the metropolitan as well as regional areas. The metropolitan level of performance was at the higher end of sewer main breaks and chokes, when compared with other metropolitan utilities. Both regions had excellent performance levels and were the top two performing regional utilities for 2007-08.

Until 2007-08 SA Water's sewer assets had been experiencing an increasing trend in breaks and chokes due to dry conditions. Abatement programs as well as targeted preventative maintenance have been put in place to manage the impact of these incidents on customers.

SA Water is seeking to reduce the impact of sewerage asset failures on customers by 2013-14.

This section provides an overview of the Corporation's performance in the provision of sewer services in terms of the following indicators.

Section	Indicator	SM	NPR
3.2.1	Sewer Main Breaks and Chokes		√
3.2.2	Number of properties per year with a sewer overflow caused by a sewer mains choke	√	

3.2.1 Sewer Main Breaks and Chokes (NPR)

This measure records the number of sewer main breaks and chokes relative to the sewerage system. A break or leak is a failure of the sewer main which results in an interruption to the service. A choke is a confirmed partial or total blockage that may or may not result in a spill to the external environment from the sewer system.

Table 3.3

Sewer main breaks and chokes (per 100 km)							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
Gold Coast Water	Qld						17.6
South East Water Ltd	Vic	16.6	18.1	15.3	16.4	21.3	20.7
Water Corporation	WA	21.3	19.1	18.0	17.8	22.5	20.9
Brisbane Water	Qld	31.2	22.9	28.0	26.3	32.0	27.6
City West Water	Vic	35.1	31.8	28.0	27.0	27.2	28.6
Power & Water Corp - Darwin	NT				36.6	34.1	30.2
Barwon Water	Vic	44.8	43.8	38.3	41.0	50.7	40.3
Yarra Valley Water	Vic			41.2	40.1	49.3	46.3
Hunter Water	NSW	67.0	64.1	68.4	58.1	63.4	50.2
SA Water	SA	49.7	46.4	53.3	52.9	65.8	58.2
Sydney Water	NSW	83.0	73.0	82.0	87.0	90.0	64.0
ACTEW Corporation	ACT				157.4	166.4	166.9
Metro Average		43.6	39.9	41.4	51.0	56.6	47.6
Regional							
SA Water - Mt Gambier	SA				1.5	7.5	5.3
SA Water - Whyalla	SA				4.8	22.8	10.1
South Gippsland Water	Vic				14.0	13.7	14.2
Byron Shire Council	NSW				34.0	23.0	15.1
East Gippsland Water	Vic				12.7	16.1	15.4
Power & Water Corp - Alice Springs	NT				50.1	44.9	46.4
Country Energy	NSW				183.0	148.0	125.6
Regional Average					42.9	39.4	33.2

Performance

In the past five years SA Water's metropolitan performance has experienced a deteriorating trend. This trend is also evident for other major utilities.

In 2007-08 however, the Corporation improved its performance by 13%. This performance improvement was also evident in the majority of the other utilities as shown above.
SA Water's 2007-08 reported number of sewer main failures exceeded the metropolitan average. The key factor directly affecting this performance indicator is Adelaide's reactive clay soils which are prone to movement as climatic conditions change. This creates problems for the metropolitan sewerage network, in particular where clay based pipes are

in use. In addition, over 80% of sewer main chokes can be attributed to tree root intrusion. This is more prevalent in times of drought when underground roots search for water sources. Vapour rooting is the most efficient method to prevent roots from invading sewer pipes (mainly through the connections). SA Water has an ongoing strategy that involves vapour rooting which clears approximately 700-800km of pipes a year.

SA Water's regional centres have reported against this indicator for the last three years. While both Mt Gambier and Whyalla experienced significant decreases in reported cases in 2007-08 when compared to the previous year, the 2007-08 performance was still higher than reported in 2005-06. Both regional centres outperformed the other regional utilities of similar size.

As the sewerage networks for the regional areas are smaller and generally younger than the water networks, they do not have an asset replacement program as yet. However, through preventative maintenance, such as cleaning programs and increased SCADA monitoring, increases in the rate of breaks and chokes have been constrained.

The Corporation continually evaluates and identifies sewer overflow risks and implements measures such as system upgrades as a part of the Overflow Abatement Program and targeted preventative sewer maintenance programs. Incidences of chokes are given the highest priority as they are more frequent than breaks.

The Corporation has invested $15m over 5 years to establish an Overflow Abatement Program (established in late 2005). The program targets overflows from pump stations, the replacement of high risk pumping mains and extending SCADA networks to all wastewater treatment plants. The aim of this program is to target high profile flows from pumping stations as they have the highest impact. Through this abatement program there has been a reduction in the number of chokes in pumping stations, however, the impact on the overall figure reported is low.

In the 2007-08 NPR, the definition of 'Sewer main breaks and chokes' changed to include breaks and chokes in the property connection, if owned and maintained by the utility. This change in the definition means that the comparison across utilities will be difficult to some degree, as not all utilities own and/or maintain the property connection. For example, SA Water and ACTEW own the property connection, but Sydney Water and Water Corporation do not. Hunter Valley does not own the property connections but does maintain them.

The current and historical SA Water figures in the table 3.3 above report the breaks and chokes in the sewer mains only (excluding property connection breaks and chokes). As the definition changed for 2007-08 NPR, these figures were reported in error. However it is more comparable across utilities. The 2007-08 figure for metropolitan Adelaide would have been 305 per 100 km of main according to the new definition. The figures for 2008-09[2], for Adelaide is 287.1, Mt Gambier 64.4 and Whyalla 144.7 breaks per 100 km of main.

[2] The NPR 2008-09 was not released at the time of compiling this report.

In 2008-09 the title of the indicator has changed to 'Sewerage breaks and chokes per 100 km of main' to better reflect the definition change.

Going Forward
For the upcoming 2009-10 reporting period, the definition has been revised. It now requires utilities to report 'sewerage mains breaks and chokes (per 100 km main)' and 'sewerage property connections breaks and chokes (per 1000 properties)' as two separate indicators. This is a material change from the previous 2 years and will improve comparability between utilities.

The Corporation is seeking to reduce the number of sewer main breaks and chokes by continuing the Overflow Abatement Program and additional sewer cleaning and preventative maintenance. In the 2008-09 budget, additional funding was provided for the sewer mains cleaning program. These initiatives should see the number of mains breaks and chokes reduce over time.

3.2.2. Number of properties per year with a sewer overflow caused by a sewer mains choke (SM)

This measure records the number of sewer overflow incidents on a customer's property caused by a sewer mains choke. A sewer overflow is an untreated wastewater spill or discharge from the wastewater system into a customer's property.

Strategic Map Targets		2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Number of Properties per year with a Sewer Overflow caused by a Sewer Mains Choke					
Inside building	Metro	67 (85)	52 (80)	99 (80)	75
	Regional	1 (6)	1 (3)	2 (3)	3
Outside building	Metro	675 (617)	558 (650)	568 (650)	598
	Regional	14 (52)	22 (26)	13 (26)	26

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance
The number of overflows occurring inside buildings in metropolitan areas has been increasing steadily since July 2008 and resulted in 2008-09 significantly (24%) above target. The result for 2008-09 is almost double the number of properties affected by internal overflows in 2007-08. This is a reversal of the positive performance of previous years, with annual reductions in this KPI achieved over the last two years.

There is normally a correlation between the number of mains chokes and internal overflows caused by mains chokes, however this has not been the case in 2008-09. Investigations are currently underway to determine the cause of the increase in internal overflows. The

preliminary analysis received from United Water indicates that the majority of sewer main chokes are caused by a combination of tree root intrusion and rainfall events. The amount of tree root debris removed through sewer main cleaning has increased by 74% between 2004-05 and 2008-09, indicating that the dry conditions since 2006-07 may have led to an increase in tree root intrusion into the sewer system.

In regional areas, there are relatively fewer choke incidences that result in an overflow inside the customers' property, as indicated by the results for the last two years.

Going Forward

For sewer overflows, where possible, SA Water is aiming to improve its metropolitan performance as well as targets by 2013-14. The Corporation is seeking to maintain its regional targets to 2013-14 and continue to perform on target or better.

To meet these objectives, the Corporation is increasing its sewer cleaning and preventative maintenance programs in an attempt to further improve these service levels.

4. Sustainable Future

4.1 WATER

The implementation of water restrictions has had a positive impact on reducing average water consumption, with the 2007-08 result showing a continued decrease in consumption. The Corporation is undertaking several initiatives to continue this trend.

The Corporation has maintained compliance with its water licences despite the significant challenges presented by the current drought conditions. Maintaining compliance imposes cost pressures on SA Water in the form of investments in water security initiatives.

This section provides an overview of how the Corporation is contributing to a sustainable future in terms of water and using the following indicators.

Section	Indicator	SM	NPR
4.1.1	10 Year Average Consumption	√	
4.1.2	Compliance with Water Licences	√	

4.1.1 10 year Average Consumption (SM)

This KPI records the annual volume of metropolitan and regional water supplies delivered to the distribution network. This is measured using master meter flows. This KPI is calculated from a base 10 year average which is adjusted for growth and savings from demand management initiatives and water restrictions initiatives. A focus on encouraging conservation is considered important particularly in the current climatic conditions where the availability of additional supplies is limited or where additional supplies would be costly and/or timely to source. It is also an important part of managing the Corporation's impact on the environment.

Strategic Map Targets		2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
10 year Average Consumption (Master Meter flows)	Metro	173.7GL (175.6GL)	169.5GL (175.2GL)	164.3GL (169.6GL)	166.8GL
	Regional	83.9GL (87.5GL)	84.5GL (88.3GL)	84.4GL (86.3GL)	87.1GL

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

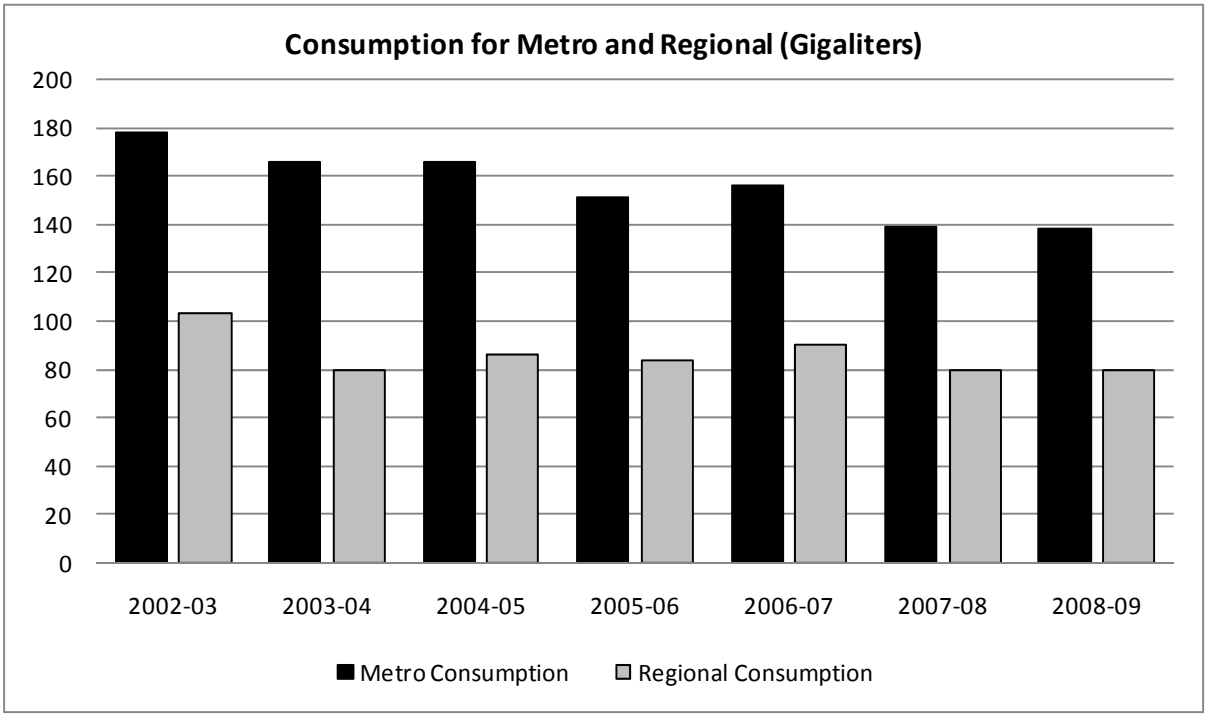
Performance

Water consumption is calculated from a base 10 year average which is adjusted for growth, demand management savings initiatives and water restrictions. On this basis, the reported actual consumption has been reducing steadily largely due to the impact of water restrictions which have been in place since 2006/07.

Ten year average water consumption in the metropolitan area fell from 173.7GL in 2007-08 to 164.3GL in 2008-09, but in the regional areas the levels increased from 83.9GL to 84.4GL in the same timeframe. The 2008-09 reported result for both the Metropolitan and Regional areas is within SA Water's targets.

Figure 4.1 demonstrates a real reduction in annual water consumption with a particularly strong response in metropolitan Adelaide. Metropolitan Adelaide's consumption per property has reduced from a high average of 252kL per property in 2001-02 to an average of 190kL per property in 2008-09[3]. Historically, SA Water has reported relatively high figures compared to some interstate counterparts such as Queensland and New South Wales where restrictions have been in place for longer and were more severe. SA Water's reduction is a result of customer commitment to water conversation measures over the drought period.

Figure 4.1



[3] The NPR 2008-09 was not released at the time of compiling this report.

Going Forward

The Corporation is targeting further reductions in the 10 year average consumption. Where performance has exceeded targets to date, the Corporation will aim to maintain these performance levels where possible. However, it should be noted that there is likely to be some bounce back in consumption when temporary water restrictions are removed. Notwithstanding this, consumption is not expected to return to pre-drought levels.

SA Water and the Government is undertaking a number of initiatives to continue the reduction in per capita consumption on a more permanent basis. This includes undertaking significant recycled water schemes, stormwater and aquifer recharge schemes, commercial and industrial water audits, and providing rebates for items such as rain water tanks, AAA shower heads, water wise garden products, new smart bills and the introduction of quarterly billing.

While the 10 year rolling average smoothes the performance, a demand prediction model (excluding water conservation measures) has been developed based on population, annual evaporation rate and the number of days where the temperature exceeds 30^0 C. A revised indicator is currently under investigation. A Climate Adjusted Demand Model, currently being examined by the Murray-Darling Basin Commission, aims to present climate adjusted demand for the Adelaide/River Murray licence in a transparent manner. This would help to determine the effectiveness of water savings activity independent of water restriction savings, providing a clearer indication of real consumption activity in the absence of water restrictions.

4.1.2 Compliance with Water Licences (SM)

The KPI measures SA Water's compliance (as a %) with its water licences issued by the Department of Water, Land and Biodiversity Conservation. These licences are issued for specified volumes of water extraction. The licences cover allocations for metropolitan Adelaide, River Murray regional areas, the Eyre Peninsula and the South East.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Compliance with Water Licences				
Water Extraction Within Allocation	100% (100%)	100% (100%)	100% (100%)	100%
Compliance with Licence Conditions	100% (100%)	100% (100%)	100% (100%)	100%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

Of SA Water's 62 water sources, 28 are licensed and for 2008-09 compliance was achieved for all licences including the most substantial of these licences, the two River Murray licences for supply to Adelaide (under normal operating conditions 650GL in any five year period) and for supply to country towns (50GL per year). SA Water holds an additional two River Murray Licences that are not tied to water supply of any particular area. For the three years from 2006-07 to 2008-09, SA Water achieved 100% compliance of water extractions

against licensed allocations, including where allocations were reduced as a result of the drought.

River Murray Metropolitan Licence – conditions of this licence were achieved by a demand reduction strategy. In 2008-09 pumping was in accordance with the drought pumping strategy which limited extraction to 150 GL, while also increasing the minimum water holding at the end of June if the Mt Lofty Ranges inflows were better than the required minimum.

River Murray Country Licence – conditions of this licence were achieved by transferring all of SA Water's previously purchased water (unassigned Licences mentioned above) and securing further water by temporary lease arrangements with other government agencies at a cost of $0.5M. Additional allocation secured increased this area's licence from 31 GL to 37.5GL.

Eyre Peninsula – no licences were exceeded, however, the Polda Basin was placed on a Notice of Prohibition meaning that SA Water was not allowed to take its full allocation. SA Water received advice from DWLBC that in future years our allocations would be reduced by up to 20%. For the more critical supplies this is being implemented at a reduction of 5% per annum subject to annual review.

South East – growth in this region exceeded long term trends and resulted in a need for action to secure additional supplies. Additional allocation was secured for Penola to ensure that the licence is not exceeded.

Shortfalls on other licences and water supplies were also avoided by taking action as follows:

- Parilla – by re-allocation from Lameroo, under a previously unused provision of the Mallee Water Allocation Plan, thus avoiding the need to try to source water in a very limited and virtually inactive market; and
- Uley South – by gaining approval for a temporary additional 5% allocation on the basis that once the Iron Knob – Kimba pipeline was operational, SA Water's extractions from the Uley South groundwater basin would be reduced until they matched the sum total of the original annual base allocation.

Going Forward
SA Water will continue to target 100% compliance with its water licences despite the challenging climatic conditions.

To meet this challenging target and ensure an enhanced level of water security for its customers, SA Water is investing in both short term water security measures including additional pumping and temporary water purchases and longer term water security measures such as climate-independent water sources and increased storage capacity. Whilst these initiatives will increase the Corporation's operating costs, enhanced levels of water security will be provided for customers and the impact on the existing sources of supply should be eased.

4.2 SEWERAGE

SA Water has generally performed at a high level in sewerage services. In particular, it has continued as a national leader in recycling water, maintained a strong performance in re-using bio-solids and treating sewage to tertiary level. The Corporation has complied with all EPA licence conditions and has reduced the number of serious wastewater notifications to the EPA.

The Corporation will continue to closely monitor the risks associated with overflows to the environment. The Corporation's performance for 2007-08 in this area is slightly down when compared to 2006-07 and has some scope for improvement when compared to other utilities.

Going forward SA Water is aiming to improve wastewater service levels by increasing the percentage of wastewater recycled and reducing the number of Type 1 and Type 2 wastewater notifications to the EPA. Where performance is already high, SA Water will be seeking to maintain service levels into the future.

This section provides an overview of how the Corporation is contributing to a sustainable future in terms of sewerage services, using the following indicators.

Section	Indicator	SM	NPR
4.2.1	Percentage of Water Recycled	√	√
4.2.2	Sewerage Treated to a Tertiary Level		√
4.2.3	Bio-solids reused		√
4.2.4	Sewer overflows to the environment		√
4.2.5	EPA licence compliance	√	
4.2.6	Number of Type 1 & 2 wastewater notifications	√	

4.2.1 *Percentage of Water Recycled (SM & NPR)*

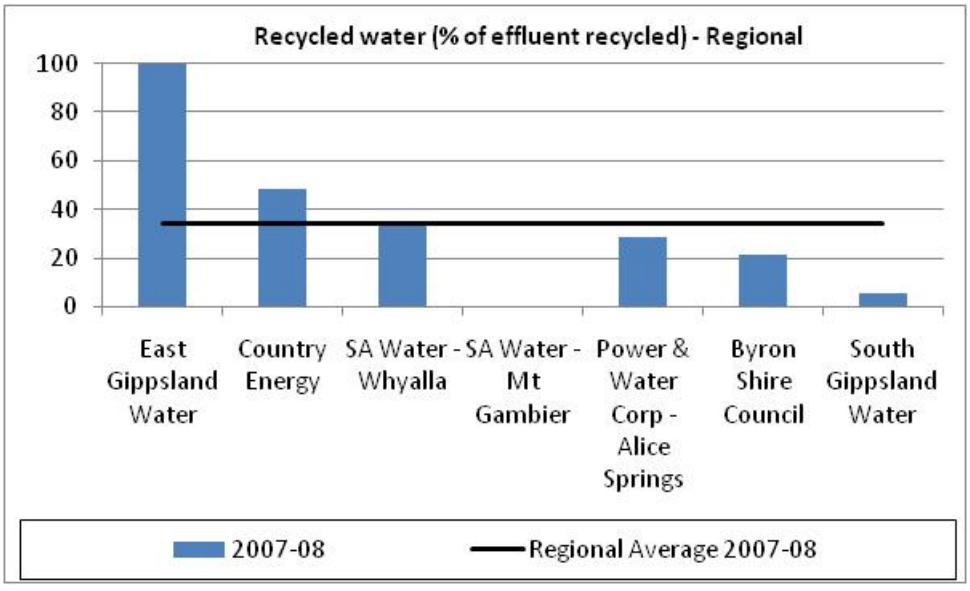
This KPI measures (as a %) the quantity of all metropolitan/regional wastewater that is collected, treated and reused by either the water business itself or a customer supplied by the water business.

Strategic Map Targets		2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Percentage of Water Recycled	Metro	30% (24%)	31% (25%)	31% (28%)	34.8%
	Regional	19% (18%)	24% (20%)	24% (23%)	29.3%

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Table 4.1

Recycled water (% of effluent recycled) – Metro							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
SA Water	SA	19.2%	21.4%	20.0%	18.0%	30.0%	31.0%
Gold Coast Water	Qld	12.0%	12.0%	14.0%	10.0%	15.0%	14.0%
Barwon Water	Vic				12.0%	18.0%	13.0%
ACTEW Corporation	ACT	7.3%	8.1%	7.9%	6.7%	6.8%	12.3%
Brisbane Water	Qld	3.5%	3.2%	5.0%	4.8%	6.6%	6.3%
Hunter Water	NSW	7.0%	8.0%	6.0%	7.0%	5.0%	6.0%
Water Corporation	WA				5.0%	6.0%	6.0%
Sydney Water	NSW				4.0%	4.0%	4.0%
Power & Water Corp - Darwin	NT				3.0%	3.0%	3.0%
South East Water Ltd	Vic				2.0%	3.0%	2.0%
Yarra Valley Water	Vic				0.0%	1.0%	0.0%
City West Water	Vic		0.0%	0.0%	0.0%	0.0%	0.0%
Metro Average		9.8%	8.8%	8.8%	6.0%	8.2%	8.1%



Performance

During 2007-08, SA Water recycled approximately 25,562 ML (31%) of metropolitan treated wastewater and 2,255 ML (24%) of regional treated wastewater.

The improving trend in performance over time for SA Water is related to significant upgrades to wastewater treatment plants (refer to Chapter 5.3 regarding Capital Expenditure for further details). For metropolitan operations, over the last seven years SA Water has been a strong performer and is consistently better than the average.

In 2007-08 SA Water reported against this indicator for Mt Gambier and Whyalla. Mt Gambier does not recycle any of the effluent produced as all treated wastewater is discharged to the sea. Whyalla recycled 35% of the effluent in 2007-08 year, which equates to the average when compared to other regional wastewater utilities. All effluent recycled in Whyalla is supplied to the golf course and council uses, such as park maintenance.

Adelaide's high performance continued into 2008-09[4] with 31% for the second year. Whyalla improved on 2007-08 figures with 44.8% recycled in 2008-09 and Mt Gambier remains at 0%.

Drought conditions, water restrictions and a clear public focus on water management has meant lower sewage inflows over the past 5 years. Performance over 2006-07 to 2008-09 indicates that the percentage of recycled effluent has remained steady (rising only 1%) despite changing climatic conditions. Although sewerage inflows have started to pick up most recently (2008-09), the available effluent has an impact on the percent recycled. There is significant effluent available at Glenelg WWTP, and with commissioning of the Glenelg-to-Adelaide Parklands (GAP) project, Glenelg reuse will increase to 43%. Assuming no other major changes to sewage volumes or reuse at other plants, this will raise the overall metropolitan re-use to approximately 40%. Bolivar WWTP will remain the most significant provider of effluent.

Going Forward
Through the *Water for Good Plan*, the South Australian Government has made a commitment to achieve a target of 45% water recycling in the long term. In line with this commitment, SA Water will review the Corporation's internal recycled water target and seek to improve its performance in this area accordingly.

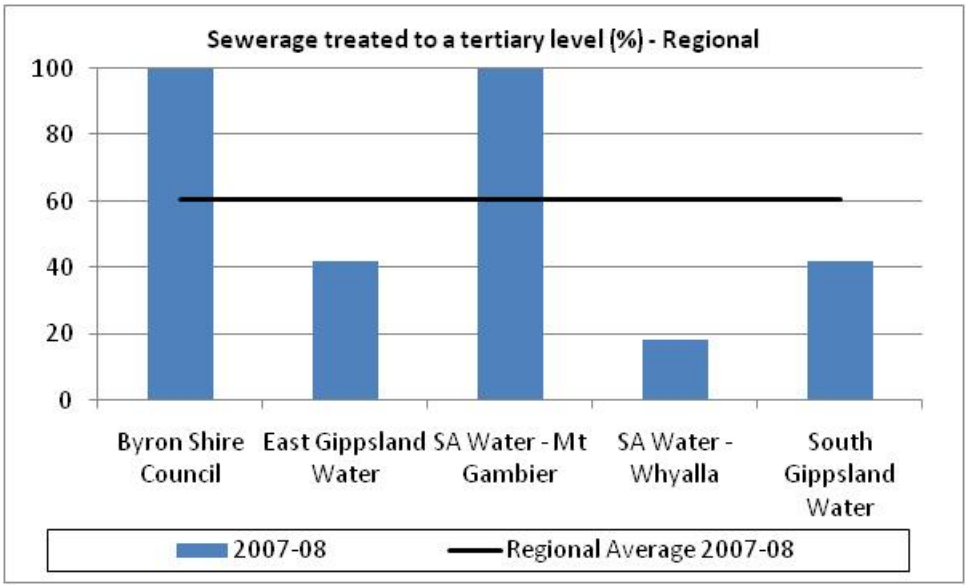
4.2.2 Sewerage Treated to a Tertiary Level (NPR)

There are typically three levels of sewage treatment, primary, secondary and tertiary. Tertiary treatment is the most complex and sophisticated process. It is principally designed to remove nutrients, such as phosphorus (typically <2 mg/L) and/or nitrogen (typically <15 mg/L). A high percentage of effluent suspended solids (typically >95 per cent) are also removed. Tertiary treatment may additionally target other contaminants of concern, (e.g. toxicants and salt) for discharges into sensitive waterways or reuse applications where high quality recycled water is required.

[4] The NPR 2008-09 was not released at the time of compiling this report.

Table 4.2

Sewage treated to a tertiary level (%) - Metro							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
ACTEW Corporation	ACT	100%	100%	100%	100%	100%	100%
Gold Coast Water	Qld	100%	100%	100%	100%	100%	100%
SA Water	SA	82%	91%	97%	100%	100%	100%
City West Water	Vic	0%	0%	0%	0%	50%	100%
Brisbane Water	Qld	76%	67%	66%	68%	68%	98.9%
Yarra Valley Water	Vic						95%
Water Corporation	WA	41%	40%	39%	95%	94%	94%
Hunter Water	NSW	46%	48%	45%	46%	44%	44%
Sydney Water	NSW				22%	22%	22%
South East Water Ltd	Vic				21%	23%	18%
Barwon Water	Vic	0%	0%	0%	7%	7%	7%
Power & Water Corp - Darwin	NT				2%	3%	3%
Metro Average		55.6%	55.7%	55.9%	51.0%	55.5%	65.2%



Performance

SA Water aims to treat 100% of sewage to the tertiary level. This target has been achieved every year since 2005-06 for metropolitan Adelaide and is well above the national Metro average on 65.2% in 2007-08. ACTEW Corporation Gold Coast Water and City West have all achieved 100% over the same time period.

The trend for SA Water has shown a significant improvement over the reporting period primarily due to major upgrades of wastewater treatment plants in Adelaide over the last 5-10 years to reduce environmental impacts.

In 2007-08 SA Water reported the percentage of sewage that is treated to a tertiary level in the regional areas of Mt Gambier, with 100%, and Whyalla, with only 18.3%. The low level sewage treated to a tertiary level in Whyalla is attributed to there being two plants in the Whyalla system with differing levels of capacity for sewage treatment. Whyalla's Wastewater Treatment Plant (WWTP) is only able to treat to the secondary level of sewage treatment; the second plant, Water Reclamation Plant (WRP), is more advanced and can treat to the tertiary level.

Going Forward

SA Water is aiming to continue to achieve the 100% sewage treatment to the tertiary level in its metropolitan area and Mt Gambier, and will manage operating and capital investments with this objective in mind. In line with SA Water's target of increasing recycling of wastewater in regional areas, SA Water will also seek to treat a greater percentage of its sewage in Whyalla to tertiary level in the future

4.2.3 Bio-solids reused (NPR)

This KPI measures (as a %) the quantum of bio-solids that are reused. Reuse involves managing biosolids safely and sustainably to beneficially utilise their nutrient, energy, or other values. This may include biosolids used for agriculture (e.g. fertiliser), soil conditioning, mine rehabilitation, and other applications recognised as reuse. The percentage of biosolids reused may be greater than 100 percent of biosolids produced if the business is also reusing existing stockpiles.

Table 4.3

Biosolids reused (%)							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
SA Water	SA	144%	168%	129%	95%	94.1%	324%
Barwon Water	Vic	0%	45.4%	259.6%	66.8%	216.7%	120.2%
South East Water Ltd	Vic	177.2%	121.7%	33.4%	321.5%	218%	100.1%
ACTEW Corporation	ACT	100%	100%	100%	100%	100%	100%
Brisbane Water	Qld		100%	100%	100%	100%	100%
Gold Coast Water	Qld	100%	100%	100%	100%	100%	100%
Hunter Water	NSW	83%	99%	89%	88%	104%	100%
Sydney Water	NSW	100%	100%	100%	100%	100%	100%
City West Water	Vic					60%	100%
Water Corporation	WA	97.7%	93.2%	96%	99.9%	100%	95.9%
Yarra Valley Water	Vic			0%	0%	0%	0%
Metro Average		100.2%	103.0%	100.7%	107.1%	108.4%	112.7%

Performance

SA Water has been a high performer in biosolids reuse for the last 6 years. In 2007-08 SA Water peaked at 324% for Adelaide.

Neither of the regional areas of Mt Gambier and Whyalla reused biosolids in the 2007-08 year.

The figure for Adelaide in 2008-09[5] is 273%. Mt Gambier reported biosolids reuse of 8% and Whyalla continued to remain at 0%. At Whyalla WRP, the solids from the activated sludge process are discharged to sewer and transported to the WWTP (primarily lagoons). Every few years, when the lagoons fill with solids they are taken offline and allowed to dry out. Once the lagoon is dry the dried sludge will be disposed for reuse. This process takes a few years and therefore Whyalla only sporadically reports biosolids reuse. In Mt Gambier the sludge is transported into sludge lagoons which, depending on the holding capacity, would fill up and be dried out sporadically as well.

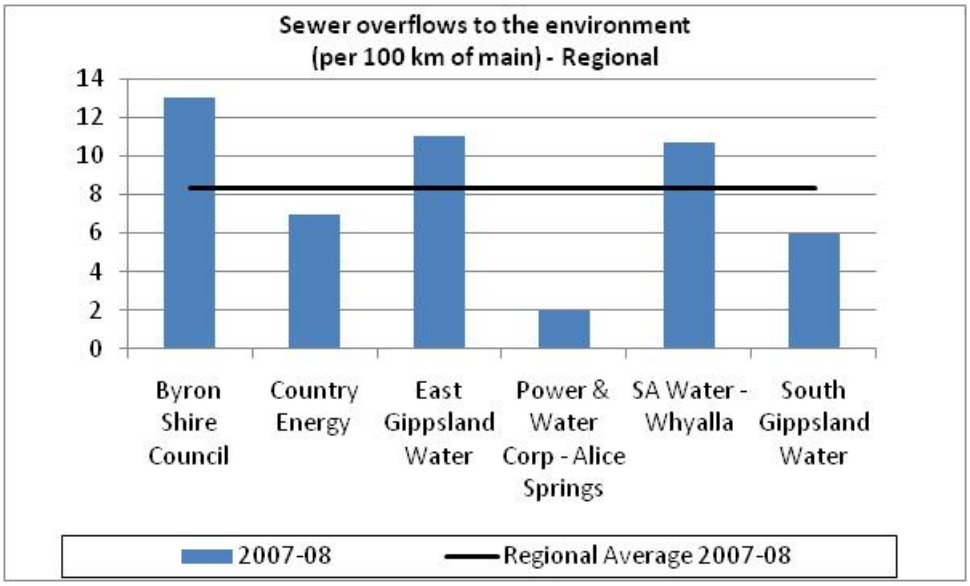
Going Forward
If fertiliser costs continue to be high it is expected that high demand for the bio-solids will continue in agriculture. SA Water will continue to provide biosolids for reuse in line with capacity and demand limitations.

4.2.4 Sewer overflows to the environment (NPR)

This KPI reports the number of sewer overflows to the environment relative to the length of sewer main (100km). Overflows are those caused by system faults originating in the system under the water utility's responsibility.

Table 4.4	Sewer overflows to the environment (per 100 km of main)						
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
City West Water	Vic				6	5	4
Power & Water Corp - Darwin	NT	9	7	7	6	6	6
South East Water Ltd	Vic			4	5	7	6
Gold Coast Water	Qld	20	8	21	11	6	10
Water Corporation	WA	10	9	9	9	11	10
Brisbane Water	Qld	19.5	20.3	12.3	8.7	7.8	11
Barwon Water	Vic	26	23	18	19	22	18
SA Water	SA	14	14	15	13	19	23
Yarra Valley Water	Vic			31	28	34	30
Hunter Water	NSW	45	46	51	42	53	43
Sydney Water	NSW	83	73	82	87	90	64
ACTEW Corporation	ACT	103	97	107	77	82	80
Metro Average		36.7	32.9	32.5	25.9	28.6	25.4

[5] The NPR 2008-09 was not released at the time of compiling this report.



Performance

The trend over the five years to 2005-06 was relatively stable, however overflow events increased in 2006-07 and again in 2007-08. This increase can be attributed to the increased incidences of breaks and chokes discussed at 3.2. This is primarily a result of the very dry conditions impacting on sewer mains. Despite the continued increase, SA Water remained below the metropolitan weighted average of all major utilities.

In 2007-08, Mt Gambier was not able to publish overflow data, as it did not pass audit due to source data issues. Whyalla in 2007-08 reported 10.7 overflows to the environment per 100km of main.

Though sewer overflows (to the environment) data will continue to be collected for internal reporting, how overflows are reported in the National Performance Report will change from 2008-09. The indicator has been changed to 'Overflows reported to the environmental regulator (per 100 km of main)'. The change is to reflect the true purpose of the indicator, which is to report the number of sewer overflows that were considered to be of a serious nature by the environmental regulator. As all overflow events to the environment were reflected in the published data previous to the indicator change, the reported result for 2008-09 and beyond will be considerably less than those reported to the environmental regulator (i.e. the EPA).

Going Forward

The Corporation will continue evaluating and identifying sewer overflow risks and implementing measures such as system upgrades, as identified in our overflow abatement program, and targeted preventative sewer maintenance programs.

4.2.5 EPA licence compliance (SM)

SA Water's wastewater treatment plants are separately licensed by the EPA in order to manage discharges to the environment. The Corporation also has licenses for other processes such as abrasive blasting, transferring of treated water, dealing with specified (listed) waste, and discharging stormwater to aquifers. This KPI measures compliance (as a %) with these licences.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
EPA Licence Compliance	100% (100%)	100% (100%)	97% (100%)	100%

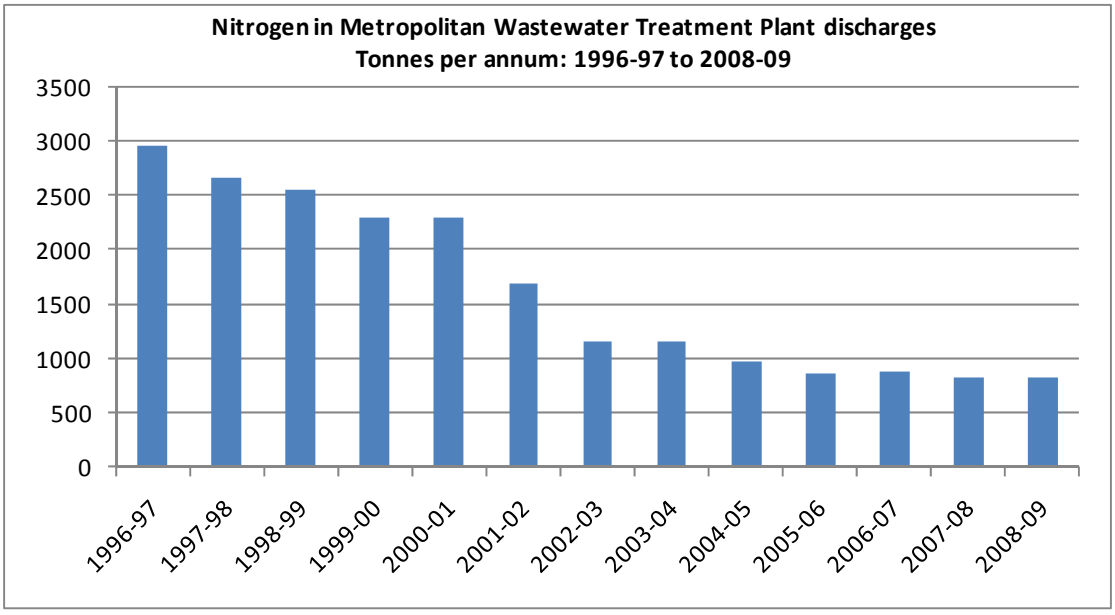
Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

EPA licence compliance was not met for the first time in 2008-09 due to a single minor incident associated with the discharge to Marine or Inland Water – Streaky Bay Aquifer Storage and Recovery Licence. Non-compliance with licence conditions occurred due to failure of de-chlorination equipment and serial communications at the site.

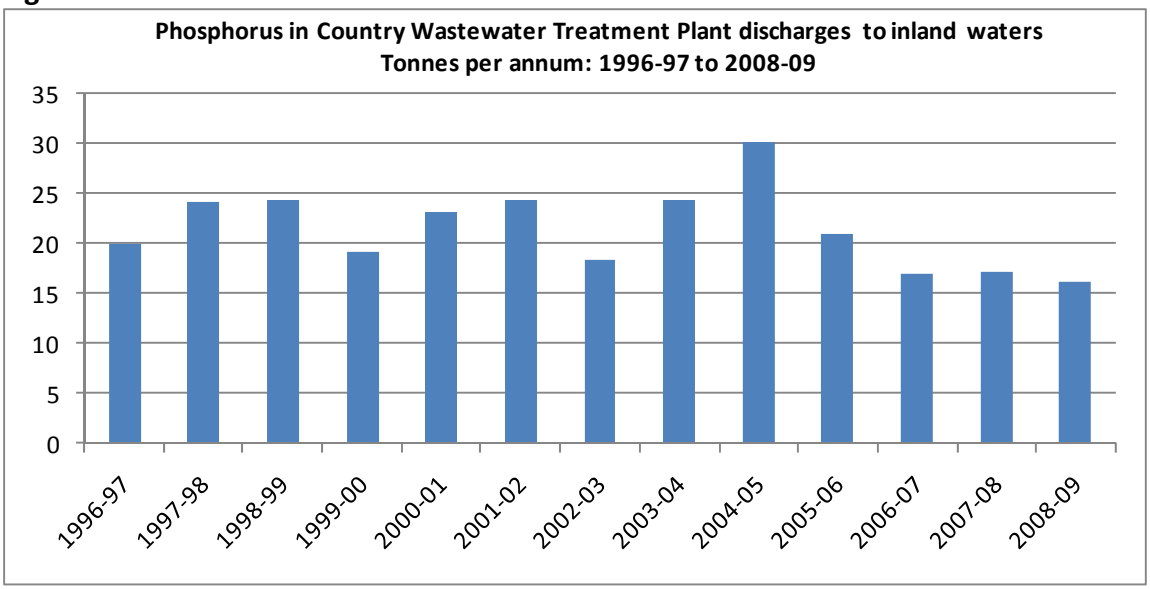
Overall, SA Water's wastewater treatment plants, which are licensed by the EPA in order to manage discharges into the environment, show reduced levels of discharge of nitrogen and phosphorous over the last ten years. See Figures 4.2 and 4.3 below.

Figure 4.2



The focus of upgrade works at the metropolitan wastewater treatment plants has been to reduce the concentrations and loads of nitrogen discharged into the marine environment, as evident in the trend in Figure 4.2, as nitrogen impacts on the health of seagrass.

Figure 4.3



Discharge to inland waters from SA Water's regional wastewater treatment plants has focussed on phosphorous concentration and load reductions as phosphorous contributes to algal growth in fresh water systems.

Going Forward

SA Water is aiming to maintain 100% compliance with EPA licences going forward and continue to reduce nitrogen and phosphorous concentration in the discharge in the metropolitan and country areas respectively.

4.2.6 Number of Type 1 & 2 wastewater notifications (SM)

This KPI measures the number of Type 1 & 2 wastewater alert incidents (environment wastewater incidents) reported by SA Water to the EPA under a protocol agreed by each organisation. Type 1 incidents are those that are causing or threatening to cause serious or material environmental harm. Type 2 incidents are those that are causing or that could cause environmental harm but are not of a high impact or on a wide scale.

Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Type 1 & 2 Waste Water Notifications	98 (113)	73 (108)	62 (102)	92

Note: Targets for 2006-07, 2007-08 and 2008-09 are shown in brackets below the annual result.

Performance

SA Water seeks to prevent environmental incidents. However, the size and nature of the Corporation's operations and systems at times leads to failures and overflows.

There were 62 Type 1 and Type 2 environmental notifications in 2008-09, down from 73 in 2007-08 and 98 in 2006-07. This result is well below the 2008-09 target of 102. Causes of the incidents included:

- overflows due to high rainfall events overloading sewer networks;
- sewer chokes; and
- valve and level detection failures.

Several wastewater overflows involved discharges which entered water bodies (both inland and marine) and may have caused localised environmental impact. Some of these overflows were caused by external events beyond SA Water's control.

Most environmental incidents are related to wastewater overflows caused by sewer blockages from tree root intrusion, foreign bodies and fats and oils. Some overflows are caused through power failures. Programs are currently in place to upgrade infrastructure to prevent sewer overflows from occurring in problematic areas. Increased preventative maintenance is also in place to minimise the risk of chokes in sewers.

Investment in overflow abatement, combined with lower rainfall, contributed to SA Water staying within its target for wastewater environmental notifications for 2006-07, 2007-08 and 2008-09.

Going Forward
SA Water is aiming to lower the target going forward and will aim to maintain current high performance levels where possible.

As mentioned above, SA Water is continually evaluating and identifying sewer overflow risks and implementing measures such as system upgrades as identified in the Corporation's overflow abatement program and targeted preventative sewer maintenance programs.

Analysis of incident types will continue to be undertaken to identify incidents which are controllable and changes in work practice to enable further reductions in incident numbers. This will assist in directing investment of the abatement program.

4.3 CLIMATE

For its metropolitan sector, SA Water's net greenhouse gas emissions in recent drought years are very high compared to other utilities due to its electricity usage being directly related to the need to pump water from the River Murray. Up to 90% of Adelaide's water is supplied from the River Murray in drought years.

In the regional sector, the Corporation reported a relatively low net greenhouse gas emissions for Mt Gambier, while Whyalla reported a high figure due to electricity usage for pumping water from the Murray.

SA Water is seeking to reduce its greenhouse gas emissions to comply with the Kyoto Protocol (108% of 1990 levels by 2012). Several other initiatives are being implemented to enhance electricity efficiency and reduce the Corporation's environmental impact.

This section provides an overview of how the Corporation is contributing to a sustainable future in terms of climate, using the following indicator.

Section	Indicator	SM	NPR
4.3.1	Net tonnes of greenhouse gas emitted	√	√

4.3.1 Net tonnes of greenhouse gas emitted (SM & NPR)

This KPI measures the net tonnage of greenhouse gas emissions from the business. Reductions in emissions can be achieved by sequestration, renewable energy purchases and energy recovery projects (SM definition).

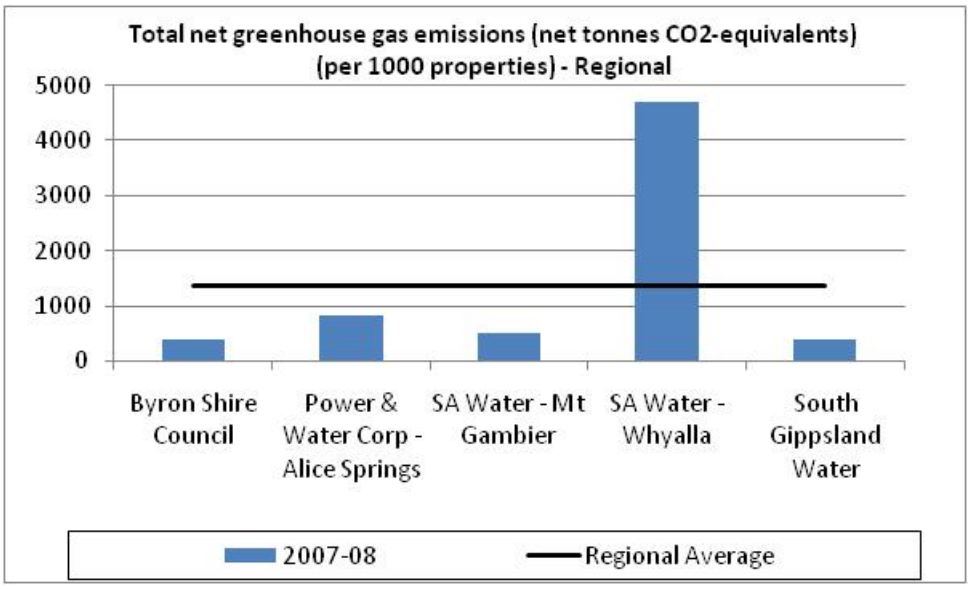
Strategic Map Targets	2006-07 Actual	2007-08 Actual	2008-09 Actual	2013-14 Target
Net Tonnes of Greenhouse Gas Emitted[1]	675,061	433,816	405,000 (405,000)	405,000 per calendar year

Note: The target for 2008-09 is shown in brackets below the annual result.

The Corporation's SM figures above are reported on a total Corporation basis and include regional operations.

Table 4.5 (NPR)

Net Greenhouse Gas Emissions (tonnes CO2-Equivalent per 1,000 properties)							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Metro							
City West Water	Vic			24	26	21	10
Yarra Valley Water	Vic	38	39	40	23	22	38
South East Water Ltd	Vic	60	58	54	55	47	43
Sydney Water	NSW						240
Brisbane Water	Qld						333
Hunter Water	NSW	396	393	390	362	371	333
ACTEW Corporation	ACT	279	223	220	220	287	357
Gold Coast Water	Qld	406	459	425	328	369	380
Barwon Water	Vic			454	450	457	414
Power & Water Corp - Darwin	NT						509
Water Corporation	WA					433	584
SA Water	SA	925	581	573	533	845	994
Metro Average		351	292	273	250	317	353



Performance

SA Water has consistently been a high emitter of greenhouse gas. This continued into 2007-08 with 994 net tonnes per 1,000 properties for metropolitan operations, which is significantly higher than any other major metropolitan utility. This is primarily due to the Corporation's electricity usage being directly related to the need to pump water from the River Murray. Up to 90% of Adelaide's water is supplied from the River Murray in drought years.

The 2007-08 NPR was the first year that SA Water reported green house gas emissions for the regional centres. Mt Gambier reported 520 net tonnes per 1,000 properties and Whyalla reported 4,688 net tonnes per 1,000 properties, the highest for similar sized regional

utilities. Whyalla's figure is relatively high due to the high energy use associated with pumping water to Whyalla from the River Murray because there is a large industrial base within the boundary of Whyalla with high water demand. The emissions produced by delivering this water are spread over a much lower customer base, resulting in high emission level per property.

In 2006-07 SA Water's emissions on a total Corporation basis (SM) were at a historical maximum of 675,000 tonnes CO^2-e (net) due to pumping requirements. During 2007-08, SA Water's major pumping has been curtailed. SA Water's greenhouse gas mitigation activities helped curtail emissions from a gross value of over 700,000 tonnes CO_2-e. SA Water's actual figure of 405,000 net tonnes of greenhouse gas emissions in 2008-09, as reported in the table above, reflects purchasing of carbon credits to negate the corporations' high emissions.

SA Water has historically had high energy use and greenhouse gas emissions compared with other states. As desalination plants are established, other water utilities are increasingly becoming greenhouse intensive as well. SA Water's greenhouse management actions as outlined below are designed to constrain emissions.

Going Forward

SA Water is seeking a reduction in net greenhouse gas emissions to ensure compliance with the Kyoto Protocol. The annual target of 405 000 net tonnes of greenhouse gas emitted is equivalent to the Kyoto commitment, being 108% of 1990 emission levels. Based on current calculations this equates to 804 net tonnes per 1,000 properties, which is still greater than the average of all States.

The Corporation has undertaken extensive consultation on its Climate Change Sector Agreement. The agreement sets out targets including:

- achieving compliance with the Kyoto Protocol (period 2008-2012);
- achieving 20% renewable energy use; and
- reducing emissions by 60% compared with 1990 levels by 2050.

As of early 2008 SA Water has made significant efforts to- identify the potential environmental impacts from greenhouse gas emissions associated with the construction, operation and eventual decommissioning of any new capital work projects within SA Water at the development stage and throughout the design process. The efforts support the development of strategies to reduce energy use, while encompassing the integration of greenhouse gas footprint evaluation into SA Water's procurement, project management, planning and design stages.

The Greening of Government (GoGO) Framework, approved by Cabinet in 2006, provides an implementation framework for agencies to progress greening plans. SA Water has completed key strategic milestones for the framework and has adopted the principles of GoGO around sustainable workplace operations. The Corporation has also supported other government agencies in attempting to meet the GoGO milestones.

Underlying growth trends, the need for additional water security projects, higher quality wastewater requirements and wastewater recycling are also causing SA Water's emissions to grow. However, SA Water will manage its net greenhouse gas emissions performance in accordance with its Climate Change Sector Agreement with the Government of South Australia. This includes commitments to use more renewable energy, expand energy recovery and renewable energy projects, maintain revegetation programs and adhere to the government commitment that the Adelaide Desalination Plant will be carbon neutral.

5. Commercial Success

Overview

The service levels discussed in previous sections of this report are delivered at a cost to the Corporation's customers. Consistent with NWI requirements, the Corporation incorporates efficient operating costs and capital expenditure within the price charged to customers.

The purpose of this chapter is to illustrate that for a given level of services provided (as per earlier chapters) SA Water is providing them at an efficient cost level. Efficiency is generally defined as achieving a given outcome with minimum effort or waste.

In science based fields, such as physics, efficiency can be precisely measured however, there is no direct method to measure the efficiency of a utility. The two main methods used to estimate a utilities' efficiency are: (1) to benchmark performance against other like utilities; and/or (2) measure its performance over time.

The primary purpose for benchmarking operating cost performance is to ascertain whether the level of service provided by the Corporation is being delivered at a comparable cost. The basic hypothesis being, that if the Corporation is delivering similar or improved levels of service at lower cost, the Corporation is more efficient.

Notwithstanding that both benchmarking and performance analysis have significant short comings, the remainder of this chapter will outline SA Water's performance against other providers (using the 2007-08 National Performance Report (NPR)), and over time. It illustrates that SA Water is a low cost and, therefore, efficient operator.

As many of SA Water's costs cut across the entire Corporation, this chapter provides information on a whole-of-corporation basis and, where relevant information is available, it is broken down into the Corporation's four main business segments.

The Corporation's Strategic Map includes measures that relate to profit before tax, return on assets and capital expenditure. The key components of these measures, to be analysed from an efficiency perspective, are closely associated with operating costs and capital expenditure reported in the 2007-08 NPR. As such, no further analysis on the Strategic Map measures was considered necessary in this chapter.

All figures quoted in this chapter, unless stated otherwise, are shown in real 2007-08 dollars in line with the 2007-08 NPR.

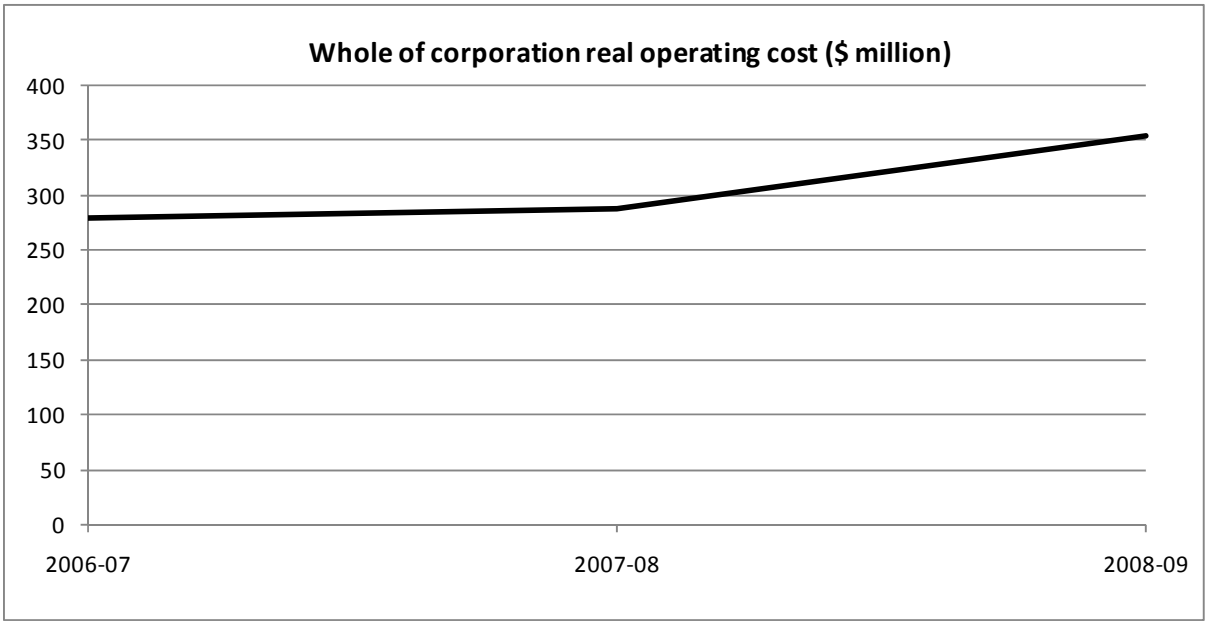
5.1 OPERATING COSTS

5.1.1 Whole of Corporation operating costs

Water Security continues to be the primary driver for significant increases in operating costs for the Corporation. From 2006-07 SA Water has been pumping around 90% of its annual metropolitan water supply from the River Murray, as well as enforcing continued water restrictions. In the future water security will be provided by the Adelaide Desalination Plant, although this level of security will come at a significant cost.

The following section focuses on the operating performance from a whole of Corporation perspective. Figure 5.1.1 below illustrates the real operating costs from 2006-07 to 2008-09.

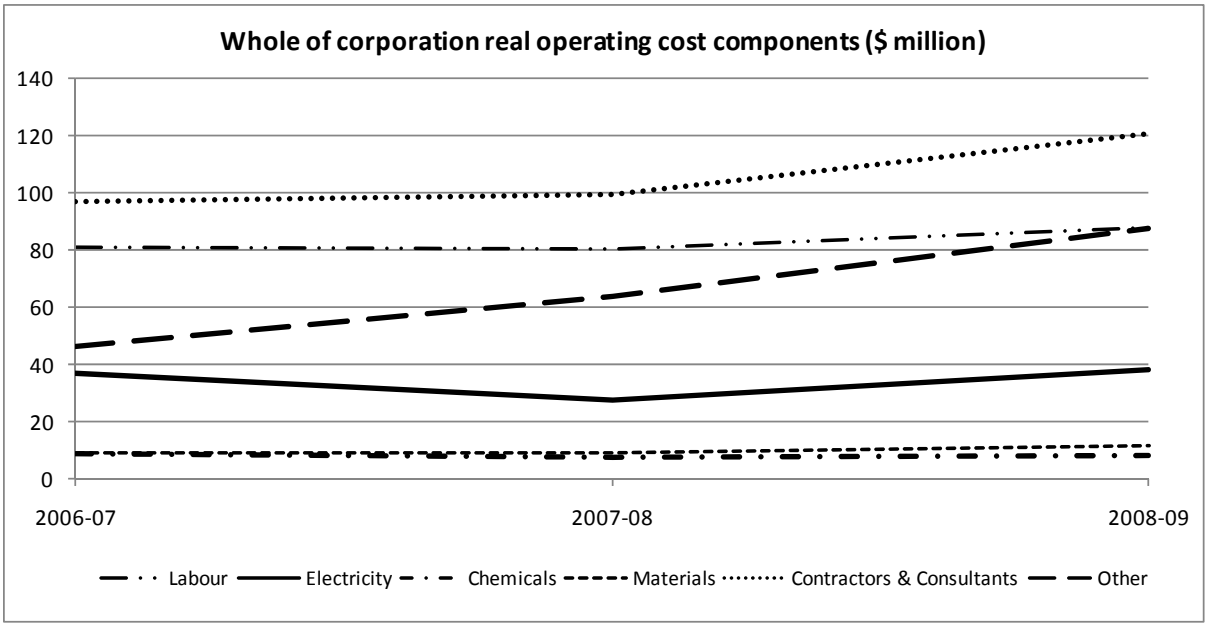
Figure 5.1.1



There is a significant increase in operating costs over this period, characterised by a step increase in costs in 2008-09.

The costs are further disaggregated in Figure 5.1.2 to illustrate the change in operating costs.

Figure 5.1.2



Over the period, materials and chemicals costs remain relatively stable and make up a small proportion of operating costs (5% of total operating costs in 2008-09). The costs that show significant variance over the period and are material in terms of total operating costs are outlined below.

Increase in other expenses

A significant increase in other expenditure from 2006-07 to 2008-09 is driven primarily by:

- a $10 million increase in expenditure in 2008-09 associated with Ex Gratia payments made to SA Water customer's for the 2007-08 financial year, as a result of a change in the Corporation's billing policy;
- the commencement of the Corporation's H_2OME water efficiency rebates scheme in 2007-08. Expenditure on this program continues to increase annually and is anticipated to cost the Corporation in total around $30 million over its life, on its completion at the end of 2010-11; and
- additional ad-hoc water purchases to maintain water licence compliance as well as provide water security in drought conditions (refer Section 4.1.2).

Increase in contractors and consultant expenditure

Note that this expenditure includes the Corporation's expenditure associated with the United Water contract.

Contractor and consultant expenditure increased significantly from 2006-07 to 2008-09, driven mainly by:

- preliminary works on a temporary weir;
- additional water level management at Lake Albert;

- increases in United Water contract costs as a result of the contracted contract escalation as well as increased activity related to biosolids management, sewer cleaning and the commencement of the leakage detection program;

- specialist service providers and contractor's engaged on the Adelaide Desalination Plant (ADP) project;

- increases in contract labour over the period to deliver the H2OME water efficiency rebates scheme;

- higher than anticipated housing development activity over the period, development was at its highest level for 14 years in 2007-08; and

- a general increase in costs associated with continued high workloads as a result of the ongoing drought conditions, particularly in the areas of water quality and water security projects.

Contractor and consultant expenditure is expected to continue to trend upwards. The increase is driven by payments to the AdelaideAqua consortium to operate and maintain the ADP. First water for the ADP is expected in December 2010, construction works on the plant will continue after first water to increase the capacity to 50 gigalitres per year by August 2011, while the expanded capacity of 100 gigalitres per year will be delivered by the end of 2012.

Labour

The Corporation's labour costs increase from 2006-07 to 2008-09, but then remain relatively stable over the period. The increase in labour cost from 2007-08 to 2008-09 relates to wage escalation of approximately $8 million as well as an increase in the number of full time employees.

Additional full time employees have been required over the period 2006-07 to 2008-09 to manage the higher levels of capital expenditure, continued strong building activity and drought response. This includes labour costs for water conservation officers and additional call centre resources. Water conservation measures were introduced in 2003, with Level 2 water restrictions introduced in October 2006 and Level 3 restrictions introduced in January 2007.

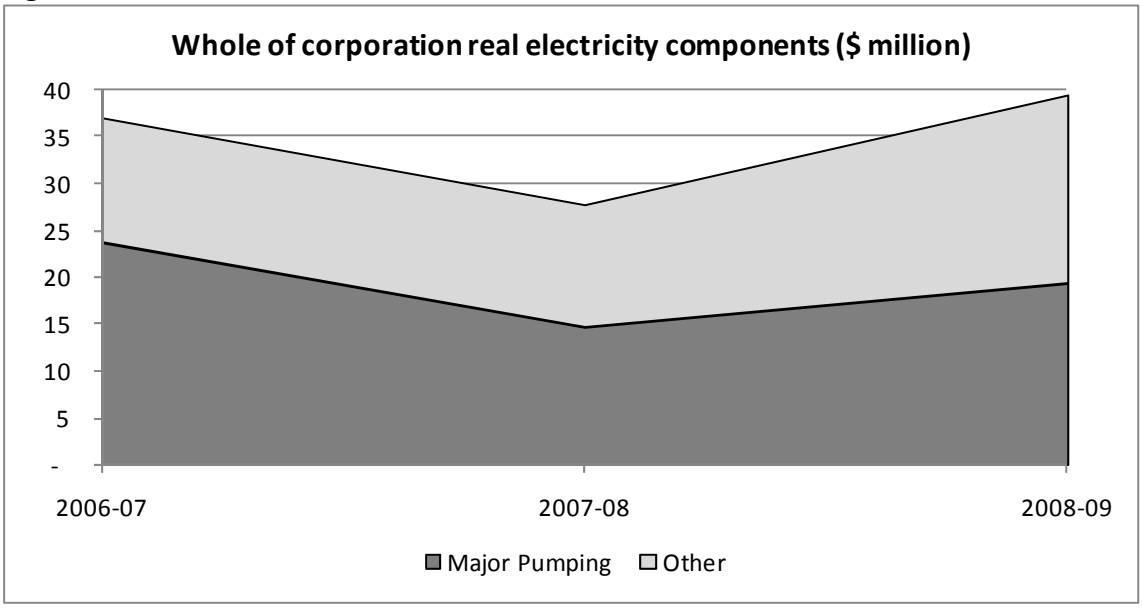
The increase associated with additional FTEs as well as higher wage escalation has been offset in part by lower liabilities for workers compensation and annual leave, as well as larger amounts of labour capitalised.

The Workforce Replenishment Strategy will increase labour costs across the Corporation from 2007-08 in order to minimise the impact of generational change in the core professional and technical workforce.

Electricity

In 2008-09 approximately 50% of the Corporation's electricity costs related to major pumping costs for the major water pipelines. Figure 5.1.3 below shows the Corporation's real electricity costs components from 2006-07 to 2008-09 and illustrates the fluctuations associated with additional major pumping costs from 2006-07.

Figure 5.1.3



SA Water drew approximately 91%, 85% and 86% of South Australia's drinking water supply from the River Murray in 2006-07, 2007-08 and 2008-09 respectively. This is much higher than previous years due to River Murray water being pumped into metropolitan Adelaide's reservoirs to supplement low water storage levels resulting from the low rainfall in the Mount Lofty Ranges. For example, in 2006-07, as a drought pumping strategy an additional 60 gigalitres from the 2007-08 River Murray metropolitan allocation was brought forward and pumped into the metropolitan reservoirs to provide water security for 2007-08.

The total expenditure on electricity for pumping water from the River Murray through the major transmission pipelines can vary significantly depending on the combination of customer demand, quantity of water available from natural catchments and requirements for water security. Over the period, the Corporation has achieved a decreasing trend in the variable energy cost per kilolitre associated with the Corporation's major pumping.

The Corporation's electricity costs going forward are set to increase, reflecting the energy intensive nature of the desalination process, coupled with the Government's commitment of procuring renewable energy for the ADP.

To minimise electricity costs the Corporation is undertaking, or has undertaken, the following initiatives:

- all electricity contracts, including those for the ADP, have been procured through a competitive tender process, consistent with the Corporation's overall procurement strategy which seeks to optimise efficiency and value for money;

- the Corporation strategically manages major pumping in terms of the times and volumes pumped to take advantage of off-peak energy tariffs;

- application of epoxy coating of pump impellers and casings and upgrade to mechanical seals on early pumping units to increase the efficiency of pumps[6];

- the mini-hydro project recovers energy from within Adelaide's water supply system that is created when water is pumped, lifted and transported from the River Murray and Millbrook Reservoir as it descends to supply the Adelaide Plains. The generated electricity is fed into the national electricity grid[4];

- the Corporation uses the biogas produced as a bi-product of the wastewater treatment process to generate electricity. Generated electricity is used to reduce the imported electricity to metropolitan wastewater treatment plants[4]; and

- in more general terms the Corporation is committed to the Australian Government's Energy Efficiency Opportunities (EEO) program, which requires large energy using businesses to assess their energy use to identify cost effective opportunities for improving energy efficiency. Through this program, SA Water is confident that energy efficiency initiatives will continue to be a major focus for the Corporation.

5.1.2 Encouraging operating efficiency initiatives

The Corporation has in place budgetary and procurement processes and frameworks to encourage operating efficiency.

Budget Process
As a part of the Corporation's budgeting processes efficiency is encouraged through the identification of continuous improvement strategies and savings.

During the Mid Year Budget Review and Budget Processes, the Corporation identifies cost savings to assist in offsetting emerging cost pressures, and limit price increases.

Procurement Process
SA Water's Procurement Policy sets out the principles that apply to procurement activity throughout the Corporation. One of the key objectives of this Policy is to ensure that SA Water's procurement activities optimise its commercial focus.

Two Policy principles that support this objective are that SA Water adopts commercial practices to optimise the return for each dollar spent and potential suppliers are given equal opportunity to do business with SA Water to the maximum extent practicable.

Under-pinning this Policy is a requirement to, wherever possible, seek competitive offers for procurements greater than $5,000. Indicative analysis suggests that approximately 60% of

6 PUB & Water Services Association of Australia (2009), DRAFT *Report for the Global Water Research Coalition (GWRC) – Energy Efficiency Compendium of Best Practice for Australia and Singapore*.

operating supplies or services in 2007-08 were procured outside of the Corporation. Going forward this percentage is set to increase to around 70% by 2012-13 as the ADP becomes fully operational.

5.1.3 Benchmarking Operating Cost Performance

SA Water continues its strong operating cost performance, with all four business segments in the low-to-mid range of the compared entities. In fact, all segments performed well below the weighted average in 2007-08. The Corporation's operating costs per property are low compared to the other major metropolitan and regional water utilities in Australia.

Overall trends have seen an increase in operating costs across the Corporation as well as across the country. In recent years water business costs have increased in order to improve water security. Wastewater costs have increased as a result of increasing environmental requirements and performance outcomes.

Real operating cost Per Property – ($ per property)

Operating costs include operations, maintenance and administration costs, but exclude interest/finance charges, capital depreciation, asset write-downs and non–core business operating costs.

The 2006-07 NPR (p41) reports the following key factors affecting operating costs:

- *changes in water consumption over time;*
- *network characteristics, for example the extent of pumping or treatment required given the significant energy requirements of these functions;*
- *customer density, where higher numbers of customers within smaller supply areas tend to result in lower operating costs per property;*
- *the extent to which water is sourced from external bulk business or other services are outsourced. The separation of 'bulk' and 'retail' functions is important as, where a retail business receives supply from an external bulk water utility, the cost of this supply will include capital-related costs for the bulk supplier. A utility which owns and operates its own 'bulk' supply sources would report, for this indicator, only the operating costs relating to these functions, and not depreciation or a return on capital invested; and*
- *some utilities operate defined benefit superannuation schemes which, depending on the performance of the investment environment, may cause some fluctuation in operating costs year on year.*

As a consequence of differences in operating environments, cost comparisons of water utilities must be interpreted with caution.

Furthermore, in support of the existence of different operating environments in the provision of water services, the Commonwealth Grants Commission investigated the impacts of water availability and quality variations across regions on water supply costs and produced an index of water cost disadvantages arising from accessibility and water quality.

The index, which is presented in Table 5.1.2[7], shows that SA Water has a 0.9 disadvantage index in water accessibility and quality. Only two other water companies (Actew AGL and Water Corporation) have a disadvantage index and in each case they are relatively small.

The data strongly supports the contention that transporting water long distances (from the River Murray to Adelaide) and the low quality of that source water, impose significant cost disadvantages for South Australia's metropolitan water supply arising from very poor availability and poor quality.

Table 5.1.2 -Index of Disadvantage in Water Accessibility and Quality by Drainage Division

	Availability	Quality	Combined Impact[1]
ActewAGL (Murray-Darling)	0	1	0.1
Brisbane Water (NE Coast)	0	0	0
City West Water (SE Coast)	0	0	0
Power & Water* (Timor Sea)	0	0	0
SA Water (SA Gulf)	2	1	0.9
South East Water (SE Coast)	0	0	0
Sydney Water (SE Coast)	0	0	0
Water Corporation (SW Coast)	0.2	1	0.18

Note: Calculated by the Grants Commission as 0.4*Availability + 0.1*Quality.

Metropolitan Water Supply

United Water manages the operations and maintenance of metropolitan Adelaide's water systems, including the delivery of capital works for rehabilitation and augmentation. This contract commenced in 1996 and was procured via a competitive public tender process.

As discussed above, there are several factors that impact on operating costs which are important for the analysis herein. Table 5.1.3 below identifies some of the key factors affecting the Corporation's metropolitan water operating costs.

Table 5.1.3

Key statistics – water supply							
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Major Pumping Metro volume pumped from River Murray (GL)	154	73	65	68	193	90	150
Water Supplied Metro consumption (GL - master meter)	178	166	166	151	156	139	138
Customer Growth Metro total connected properties – (000s)	480	486	492	499	504	510	517

7 Commonwealth Grants Commission (2004), 'Concessions and other payments – water, sanitation and protection of the environment', *2004 Review Working Papers.* See especially pp 80-81.

Despite having a clear water quality and water availability disadvantage, when compared with other interstate water companies, the Corporation has operating costs for water in the metropolitan area that are comparable to the lowest cost operators.

Table 5.1.4 shows the real operating cost per property for metropolitan water supply from 2002-03 to 2007-08 as reported in the 2007-08 NPR.

Table 5.1.4

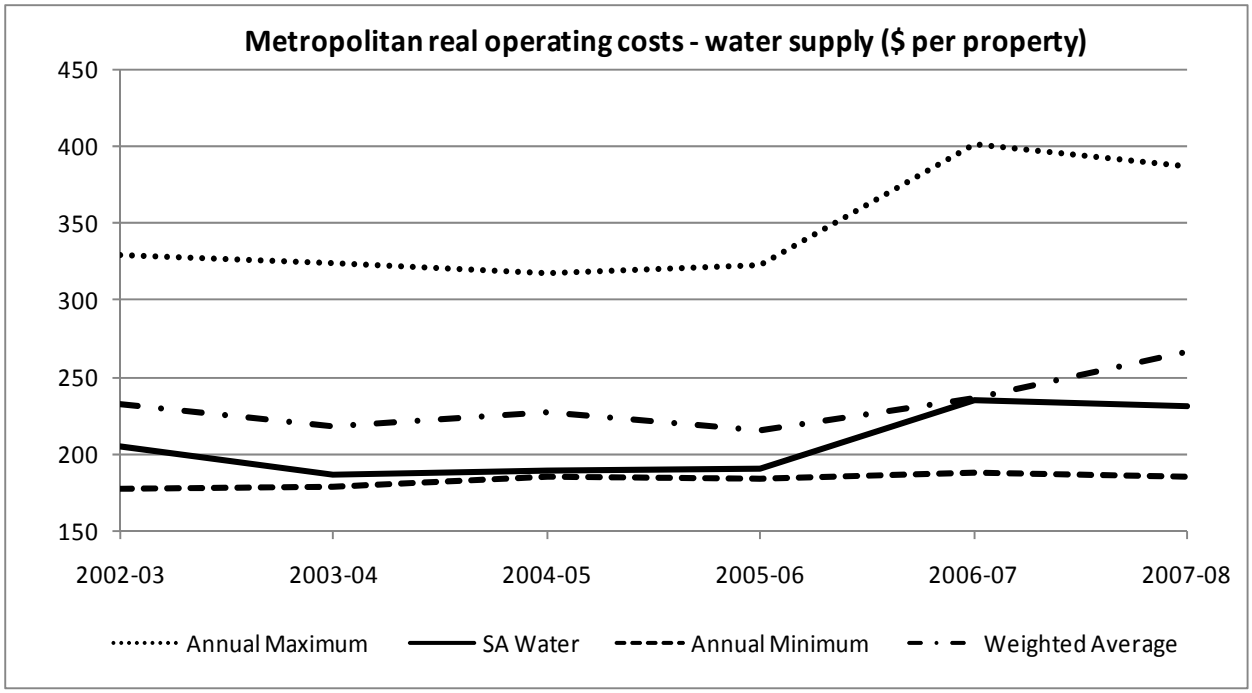
Real operating cost – water ($/property) – 2007-08 Dollars							
	State / Territory	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**
Hunter Water	NSW	177	178	193	195	211	186
South East Water Ltd	Vic	197	183	189	186	188	190
Yarra Valley Water	Vic				196	196	200
SA Water	SA	204	186	188	190	209	205
Water Corporation	WA				184	211	222
Gold Coast Water	Qld	185	198	186	244	191	247
City West Water	Vic	329	305	317	294	297	288
ACTEW Corporation	ACT	310	324	247	250	291	303
Barwon Water	Vic	230	240	259	263	279	303
Brisbane Water	Qld	240	241	259	253	286	336
Sydney Water	NSW	239	216	230	218	260	336
Power & Water Corp – Darwin	NT			307	323	401	387
Metro Weighted Average		**232**	**218**	**227**	**215**	**236**	**266**

The industry weighted average operating cost per property has increased significantly from 2006-07. Continued drought conditions experienced in 2006-07 and 2007-08 are more than likely the primary driver for this increase across the country, as entities spend more to secure additional and more reliable water supplies.

Despite this challenge, the Corporation continued its strong performance in comparison to other entities, having the fourth lowest operating cost per property in 2007-08, well below the average of $266 per property. SA Water's operating cost per property for metropolitan water supply has consistently outperformed the industry average, with the Corporation being the lowest cost provider in several years.

Figure 5.1.4 illustrates how the Corporation's performance has been below the weighted average over the period. The drought conditions in 2006-07 and 2007-08, in particular in South Eastern Australia, are illustrated below by the real upward trend in operating costs per property of the weighted average.

Figure 5.1.4



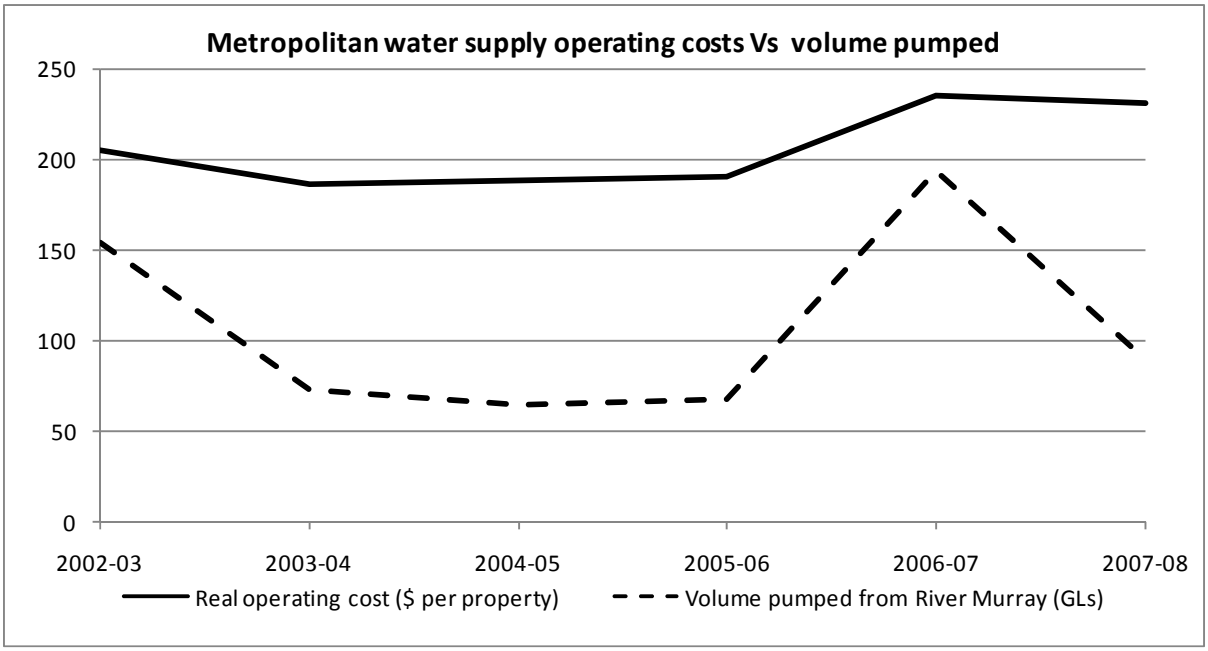
The Corporation's operating cost per property cost spikes in 2002-03 and 2006-07 are driven primarily by increases in electricity costs associated with additional major pumping from the River Murray in both of these years (refer Table 5.1.3).

The additional pumping from the River Murray (high cost water source) was required due to significantly lower than average inflows into Adelaide's main storages in these years (low cost water source). For example, in 2006-07, as a drought pumping strategy an additional 60 gigalitres from the 2007-08 River Murray metropolitan allocation was brought forward and pumped into the metropolitan reservoirs to provide water security for 2007-08.

Although drought conditions continued into 2007-08, major pumping costs were not the major driver for increases in operating costs in 2007-08. This is illustrated in Figure 5.1.5 below, which shows the relationship between operating cost per property and the volume of water pumped from the River Murray.

The increase in real operating cost per property in 2007-08 relate to the drought response measures mentioned previously in Section 5.1.1, in particular the commencement of the H2Ome Rebates Scheme and enforcement of water restrictions.

Figure 5.1.5



Metropolitan Sewerage Services

United Water manages the operations and maintenance of metropolitan Adelaide's wastewater systems, including the delivery of capital works for rehabilitation and augmentation. This contract commenced in 1996 and was procured via a competitive public tender process.

Table 5.1.5 identifies some of the key factors affecting the Corporation's metropolitan sewerage services which are important in the context of the analysis herein.

Table 5.1.5

Key statistics – sewer							
	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Customer Growth Metro total connected properties – (000s)	451	458	464	470	475	480	487
Percentage of Sewage Treated to a Tertiary Level	81.6%	91.0%	97.0%	100.0%	99.9%	100.0%	100.0%

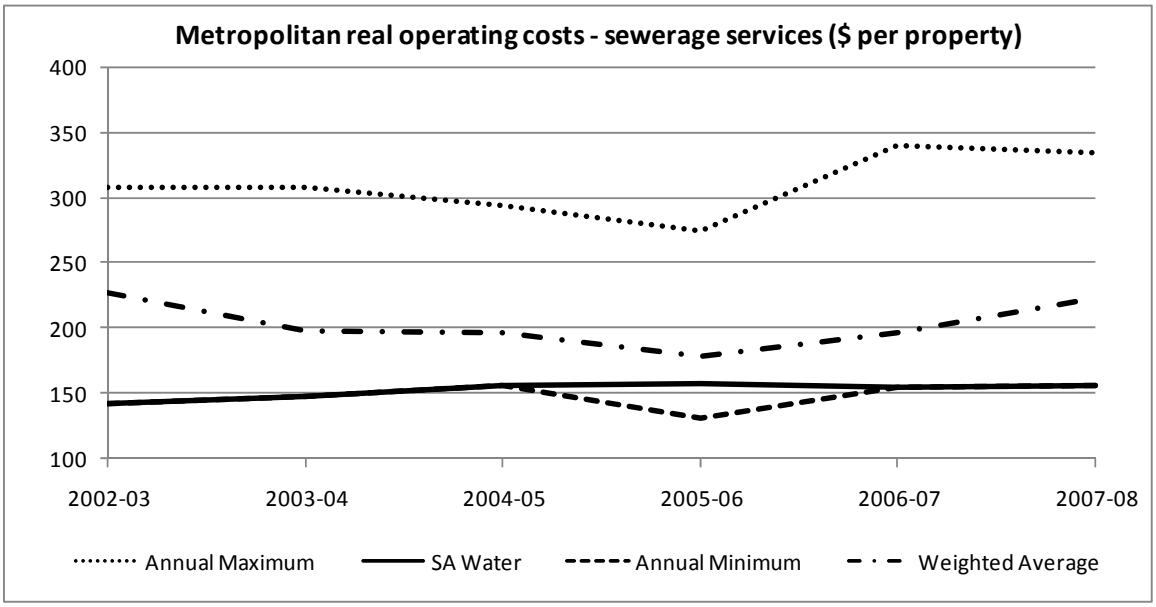
Table 5.1.6 below shows the real operating cost per property for metropolitan sewerage services from 2002-03 to 2007-08 as reported in the 2007-08 NPR.

Table 5.1.6

Real operating cost – sewerage ($/property) – 2006-07 Dollars							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
SA Water	SA	142	148	155	157	154	156
Water Corporation	WA				192	192	188
Brisbane Water	Qld	222	197	189	184	180	193
South East Water Ltd	Vic	207	205	218	219	217	217
City West Water	Vic	236	227	250	234	232	229
Yarra Valley Water	Vic				220	229	239
Barwon Water	Vic	205	215	230	252	261	243
Hunter Water	NSW	184	180	190	217	228	259
Sydney Water	NSW	261	194	199	131	190	261
Gold Coast Water	Qld	199	216	247	267	225	282
ACTEW Corporation	ACT	308	309	295	272	301	307
Power & Water Corp – Darwin	NT			292	275	340	334
Metro Weighted Average		**227**	**198**	**196**	**179**	**197**	**223**

The Corporation continued its high performance in comparison to other entities and at $156 per property had the lowest operating cost per property in 2007-08, well below the weighted average of $223 per property. Over the period SA Water has consistently been the lowest cost provider as illustrated in Figure 5.1.6.

Figure 5.1.6



The Corporation's slight upward trend from 2002-03 to 2005-06 relates to increased costs largely attributable to the Corporation's Environment Improvement Program (EIP), which has been introduced to meet higher environmental standards required by the EPA. SA Water has, at a significant cost over the past several years, adjusted its operating practices to reduce negative environmental impacts.

The EIP included the following metropolitan projects: Bolivar Dissolved Air Flotation Filtration plant and associated sludge dewatering process; the Queensbury Diversion; the Christies Beach EIP; and the Glenelg EIP.

As discussed in Chapter 4.2, and shown in Table 5.1.5 above, there has been a substantial increase in the proportion of wastewater treated to a tertiary level over the period. Interstate companies have seen some significant increases in the degree of tertiary treatment, but none as significant as SA Water's increase. Tertiary treatment is typically the most expensive treatment process to operate.

As well as improving discharges to the St Vincent's Gulf, the EIP has helped to increase the percentage of water recycled (refer Chapter 4.2.1) and ensured the Corporation continues to be EPA compliant (refer Chapter 4.2.5).

Due to higher environmental standards required by the EPA, it now appears that in many instances recycled water options are the most cost effective method of disposal. If EIP operating costs were to be removed costs would remain relatively stable over the period.

Regional Water Supply

As discussed earlier, there are several factors that impact on operating costs. Table 5.1.7 below identifies some of the key factors affecting the Corporation's regional water supply costs.

Table 5.1.7

Key statistics – regional water supply							
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Major Pumping Regional volume pumped from River Murray (GL)	56	41	41	42	50	37	37
Water Supplied Regional consumption (GL - master meter)	103	80	86	84	90	80	80
Customer Growth Regional total connected properties – water supply (000s)	174	177	180	183	186	190	194

Table 5.1.8 below show the real operating cost per property for regional water services from 2005-06 to 2007-08 as reported in the 2007-08 NPR.

Table 5.1.8

Real operating cost – water ($/property) – 2006-07 Dollars				
	State / Territory	**2005-06**	**2006-07**	**2007-08**
Byron Shire Council	NSW	371	388	412
SA Water - Regional	SA	433[(1)]	441	463
South Gippsland Water	Vic	390	507	508
East Gippsland Water	Vic	443	477	543
Power & Water Corp - Alice Springs	NT	651	719	795
Country Energy	NSW	1003	894	800
Regional Weighted Average		**415**	**543**	**564**

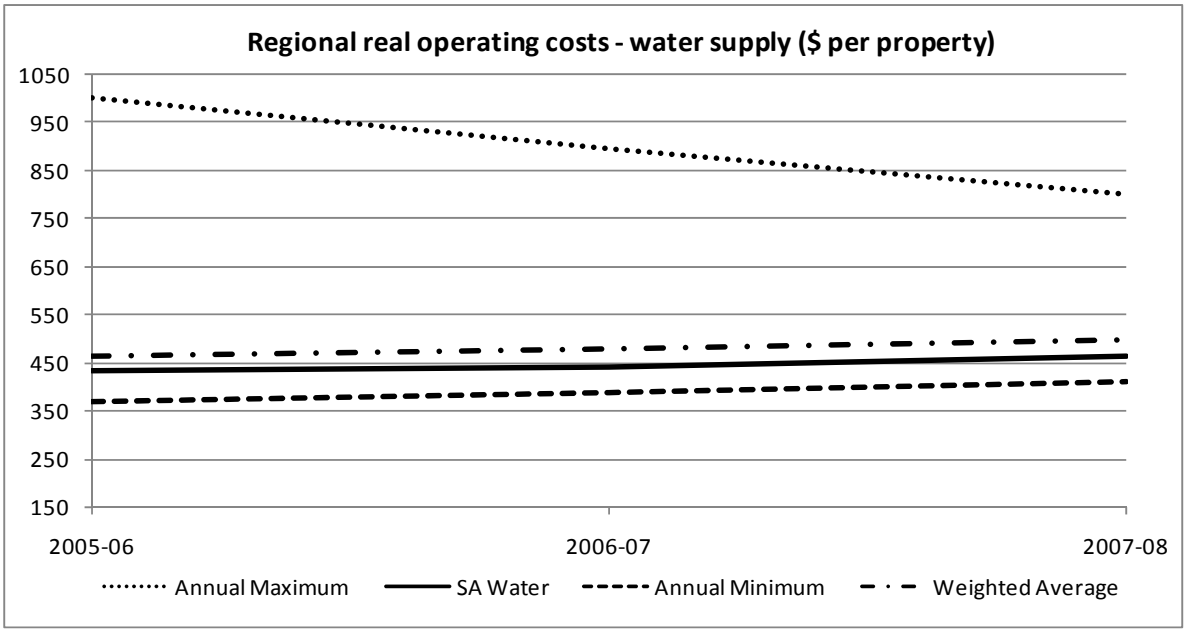
(1) The Corporation did not report this indicator in 2005-06 for benchmarking purposes. The figure included above is an internal estimate and is consistent with the Corporation's Annual Report Segment Report.

SA Water's regional operating cost per property for water is relatively low for 2006-07 and 2007-08 and well below the weighted average. The Corporation's regional water segment results should be interpreted with caution due to the following factors:

- the diversity of systems within the SA regional data. For example, Mount Gambier's water is sourced readily from the Blue Lake, whereas Whyalla's water must be treated and pumped 350km from the River Murray;
- whole-of-State regional averages which depend on the proportions of "low cost" and "high cost" regions that are present in the State; and
- South Australia's disadvantage in terms of water availability and quality variations (as detailed in Table 5.1.3 earlier in this chapter).

It is difficult to make longer term comparisons of operating cost per property trends in regional areas as regional centres have only been reporting in the NPR since 2005-06 and there is large variability between regional areas. Figure 5.1.7 displays this graphically, showing SA Water costs relatively stable and around the average of the compared companies.

Figure 5.1.7



The last 5 years has seen several key regional water initiatives come on line which increased the amount of filtered water delivered to customers as a part of the Corporation's Country Water Quality Improvement Program.

An increase in operating costs in 2007-08 is partly attributable to the Country Water Quality Improvement Program – Stage 3 (CWQIP3). CWQIP3 has meant a further 17 regional communities now receive filtered and treated water from the River Murray as opposed to their previous non-potable supply. As a result the provision of filtered water from this program has increased by around 10.55 ML per day in regional SA. The treatment plants are operated largely through third party contracts by which SA Water pays for the labour, chemical, materials and maintenance cost of operating the 9 new plants at Kanmantoo, Mypolonga, Cowirra-Neeta, Swan Reach, Palmer, Blanchetown, Cadell, Moorook and Glossop.

SA Water has increased the percentage of treated water to regional customers and has supplied water to new customers. SA Water has also responded to the challenge of drought conditions and events outside of its control to ensure water security for customers is maintained.

Regional Sewerage Services

As discussed earlier, there are several factors that impact on operating costs. Table 5.1.9 below identifies one of the key factors affecting the Corporation's regional sewerage service costs.

Table 5.1.9

Key statistics – sewer							
	2002-03	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Customer Growth Regional total connected properties – sewer (000s)	58	59	60	61	62	63	64

Table 5.1.10 below shows the real operating cost per property for regional sewerage services from 2005-06 to 2007-08 as reported in the 2007-08 NPR.

Table 5.1.10

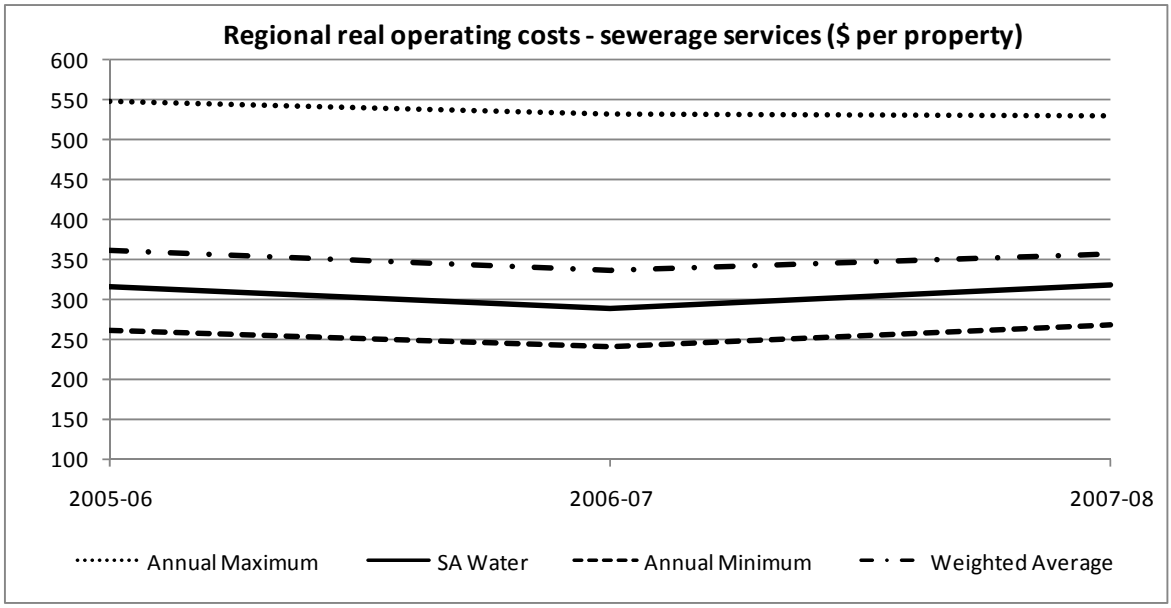
Real operating cost – water ($/property) – 2006-07 Dollars				
	State / Territory	**2005-06**	**2006-07**	**2007-08**
Country Energy	NSW	260	241	268
Power & Water Corp - Alice Springs	NT	365	366	315
SA Water – Country	SA	314(1)	289	317
South Gippsland Water	Vic	308	313	352
East Gippsland Water	Vic	548	465	504
Byron Shire Council	NSW	519	531	529
Regional Weighted Average		**408**	**361**	**378**

(1) The Corporation did not report this indicator in 2005-06 for benchmarking purposes. The figure included above is an internal estimate and is consistent with the Corporation's Annual Report Segment Report.

SA Water's regional operating cost per property for sewerage is in the midrange of the compared companies for both 2006-07 and 2007-08 and well below the regional average.

It is difficult to make longer term comparisons of operating cost per property trends in regional areas as regional centres have only been reporting in NPR since 2005-06; analysis of SA Water's regional cost trend is more useful as shown in Figure 5.1.8.

Figure 5.1.8



Consistent with the majority of other compared entities, the Corporation's real operating costs for regional sewerage services have increased from 2006-07 to 2007-08, as shown in Figure 5.1.8.

SA Water's operational costs have increased over the period due to several upgrades of the Corporation's regional wastewater treatments plants (WWTP) to meet environmental requirements and a general increase in workload across many outer metropolitan treatment plants such as Hahndorf, Myponga, Heathfield and others as a result of expanding hills and regional development.

As with the metropolitan sewerage business, the Corporation has upgraded several of its regional wastewater treatments plants (WWTP) to meet environmental requirements. These projects include the construction of WWTPs in Victor Harbour, Whyalla, Port Pirie and an upgrade at Heathfield WWTP.

Whilst cost pressures are evident for regional wastewater, the upgrade of several WWTPs has had a positive impact on service standards including increasing the percentage of sewerage treated to a tertiary level (refer Chapter 4.2), increasing the percentage of water recycled (refer Chapter 4.2.1) and helping SA Water ensure the Corporation continues to be EPA compliant (refer Chapter 4.2.5).

5.1.3 Operating Costs - Going Forward

Going forward the Corporation's real operating cost per property in the water business is expected to increase. The increases are driven by water security initiatives, the ADP being the most significant, as well as continuing the water efficiency rebates and water restrictions.

Sewerage costs increase slightly from 2009-10 reflecting an increase in environmental compliance requirements as well as the need to meet demand growth.

Metropolitan Water
The increases in this segment beyond 2009-10 are primarily attributable to the operation of the ADP. Removing the operating costs associated with the ADP from the forward estimates, real operating cost per property declines significantly, in particular beyond 2010-11 when restrictions are assumed to be lifted.

Costs remain high from 2008-09 to 2010-11 reflecting primarily the continuation of water restrictions and the H2Ome Rebates Scheme.

Regional Water
Operating costs remain high from 2008-09 to 2010-11 before costs reduce in 2011-12. The high costs from 2008-09 to 2010-11 relate primarily to drought response costs, including the cost of additional water purchases and continuation of water restrictions.

Metropolitan Sewer
Operating costs are forecast to remain relatively stable in real terms from 2009-10 for this segment, although still a slight increase compared with 2006-07 levels.

The increase over the period is driven partly by an increase in costs associated with the operation of the upgraded Christies Beach Wastewater Treatment Plant. This project aims to deliver a plant with a focus on sustainability and the ability to cater for a growing population.

Regional Sewer
Operating costs are forecast to increase in real terms for this segment, although still a step increase compared with 2006-07 levels. The increase is driven by increases in labour costs associated with the Corporation's Workforce Replenishment Strategy as well as additional operating requirements as a result of OH&S investigations and increases in water quality compliance requirements.

5.2 TOTAL COSTS

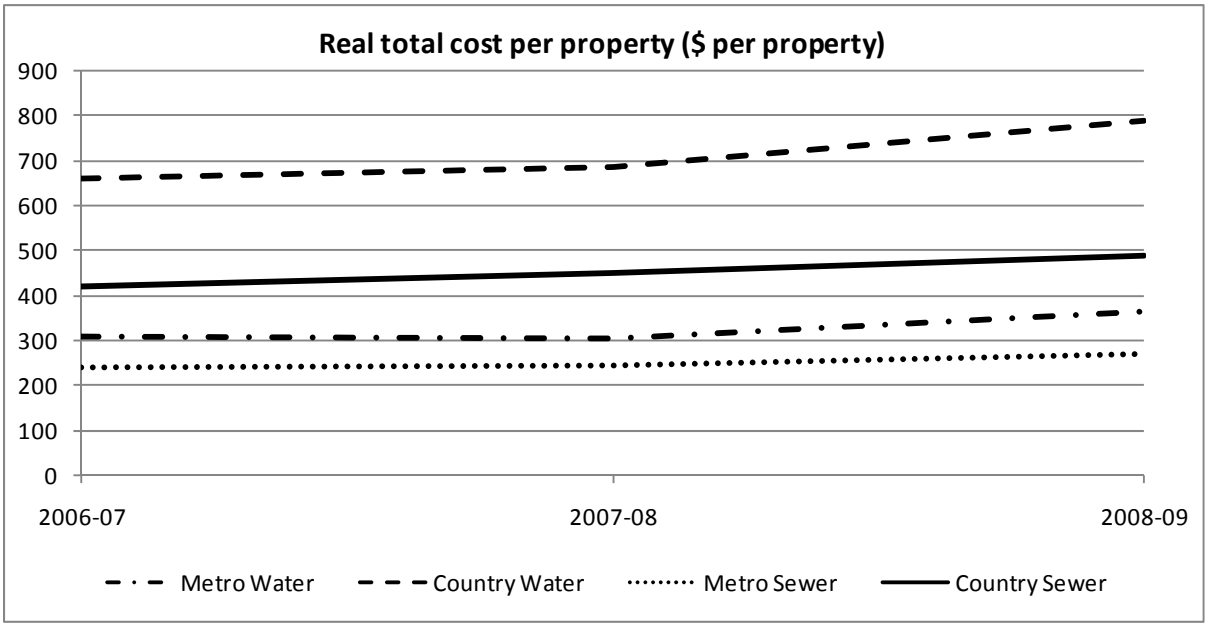
SA Water's total operating cost per property trend is consistent with the Corporation's operating cost per property.

Real total cost per property – ($/property)

Total cost for water supply/sewerage services ($/property) equal to operating cost for water supply/sewerage services plus current cost depreciation for water supply/sewerage assets divided by Total connected properties receiving water supply/sewerage services)

This indicator was deleted from the NPR and hence was not reported in the 2007-08 NPR. The Corporation understands that this indicator was deleted as total cost includes depreciation which is based on the Written-Down Replacement Costs (WDRC), and the calculation for this differs between utilities therefore is not a suitable comparison for benchmarking. In the attempt to reduce indicators, operating costs was seen as a sufficient indicator of the costs of the utility. Notwithstanding its limitations in terms of comparison, Figure 5.2.1 shows the total costs per property for the four business segments.

Figure 5.2.1



Real total cost per property for both water and sewer generally follows the same trend over the period as the real operating cost per property. This is to be expected as operating costs are a major component of total costs for the Corporation.

When this indicator was previously reported in the NPR, SA Water's real total cost per property was consistently well below the average of other Australian water utilities. Although as mentioned above, caution must be taken when comparing total cost per property as the depreciation component of this cost varies significantly with the asset valuation methodology used by the utility.

5.3 CAPITAL EXPENDITURE

As discussed in the Draft National Water Initiative Pricing guidelines, "Capital expenditure constitutes the major proportion of costs recovered through water charges. Capital expenditure includes expenditure: for replacement of existing assets; and to expand the stock of assets to meet increases in demand, meet required service standards, and any increases in regulatory obligations".

In setting water and sewer prices the Corporation includes the capital expenditure in its regulatory asset base. Depreciation on these assets as well as a return on investment is recovered from customers. Furthermore, capital expenditure has a direct impact on operating costs.

5.3.1 Capital Planning Framework

The Corporation has in place formal Asset Management processes and policies. Consistent with operating expenditure, capital expenditure efficiencies and rationing are a part of the overall Asset Management Framework.

The Board of SA Water has endorsed a formal capital expenditure approvals policy, which is applied to all projects. A project must pass through formal approval "gates" prior to commencement of capital works. This process involves a rigorous business case, identification of project risks and the identification of business and customer outcomes.

The Corporation continues to benchmark its capital planning and asset management process and policies with other Australian water utilities.

In providing water and wastewater services to communities across South Australia, SA Water utilises a vast array of infrastructure assets, many of which are expected to have long operational lives. For example, there are more than 28,000 km of water pipes; 8,500 km of wastewater mains; 615,000 water connections and 485,000 wastewater connections. In total, the asset base has a gross replacement value of more than $13.5 billion and a written down value of over $8 billion. See Attachment 1 for a summary table of assets.

SA Water's operating environment is challenging and includes factors such as broad geographical spread of operations, a wide variety of water sources, water security challenges, tightening customer service standards, increasing regulation (water quality, environment and economic), increased community expectations and a diverse array of assets.

Within this environment, management of infrastructure assets to produce efficient and effective outcomes throughout long operational lives is a critical activity for SA Water.

It is also a required activity. SA Water's Charter, prepared in accordance with the Public Corporations Act 1993, states that "The Corporation must develop an Asset Management Plan for the short and long-term".

This section details the Corporation's approach to asset management. Key elements include an asset management framework, the Corporation's asset management policy, an explanation of how asset management drives the capital works plan and an overview of asset management processes.

Asset Management Framework - Overview

SA Water's approach to asset management is based on the principle that assets exist to deliver service to customers. Asset management is simply the process, or business discipline, through which the necessary infrastructure is created and managed to ensure the designated services to customers are provided reliably and efficiently over time.

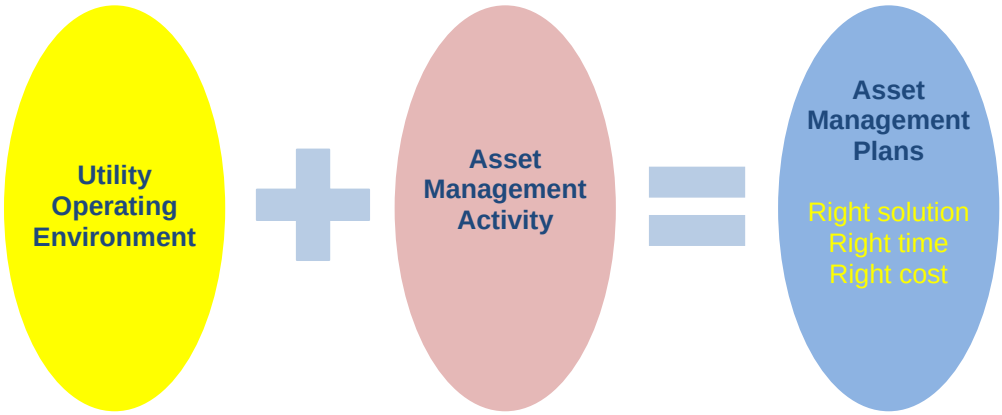
Given the complex operating environment of a water utility, asset management decisions will rely heavily on:

- clear definition of expected customer service standards;
- adequate description of regulatory and other imposed operating environment constraints;
- sound risk management analysis;
- proper analysis of sustainability issues;
- whole of life analysis of installed assets covering planning, creation, operations, maintenance, renewal/replacement and disposal; and
- well defined projections of growth in demand for services.

The output of the asset management process will be well scoped asset management plans which detail the infrastructure related actions and investments necessary to manage the operating environment risk profile.

Figure 5.3.1 below illustrates, at the broadest level, the asset management process.

Figure 5.3.1



Asset Management translates a utility's operating environment into the maintenance and capital investment plans to be applies to its infrastructure assets.

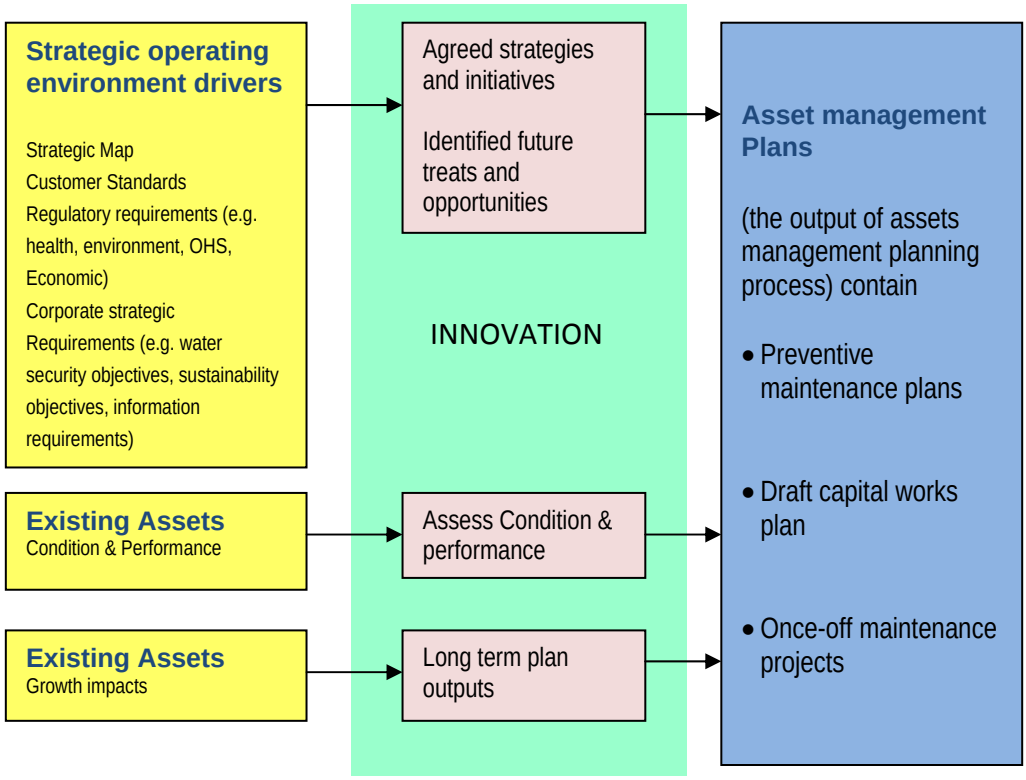
As alluded to above, the utility operating environment can be divided into a number of major themes. SA Water's asset management model uses the following categorisation:

- **strategic drivers** that include customer service standards, regulatory mandates (e.g. water quality, environment, OHS) and specific corporate/owner objectives (e.g. water security);
- **condition and performance** of the existing installed infrastructure; and
- impacts on the infrastructure of **demand growth**.

The asset management activity applied to each key category varies. For the strategic drivers, asset management activity is focussed on translating the required strategic outcomes into the specific actions needed to be applied to the relevant infrastructure. For condition and performance of the existing asset base, specific modelling, inspections and maintenance regimes all inform future planned interventions. For demand growth, population projections and development planning priorities are input to hydraulic modelling of the existing infrastructure to determine the scope and timing of planned capacity augmentations (for both treatment plants and networks). Undergirding all asset management activity is the principle of effective risk management.

Figure 5.3.2 diagrammatically presents the Corporation's Asset Management Model.

Figure 5.3.2 - Asset Management Model



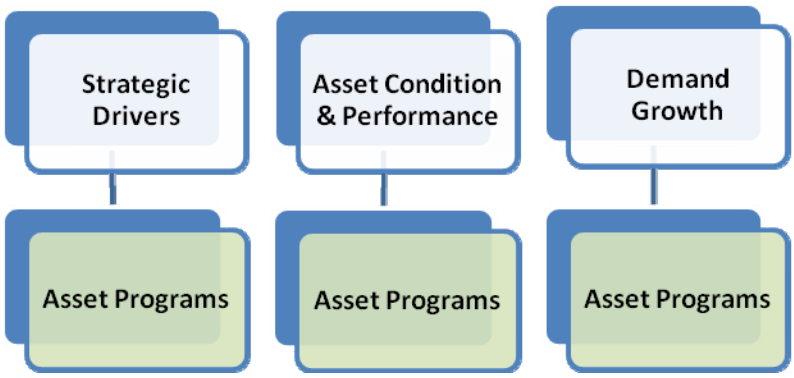
Asset Management Framework – Asset Programs

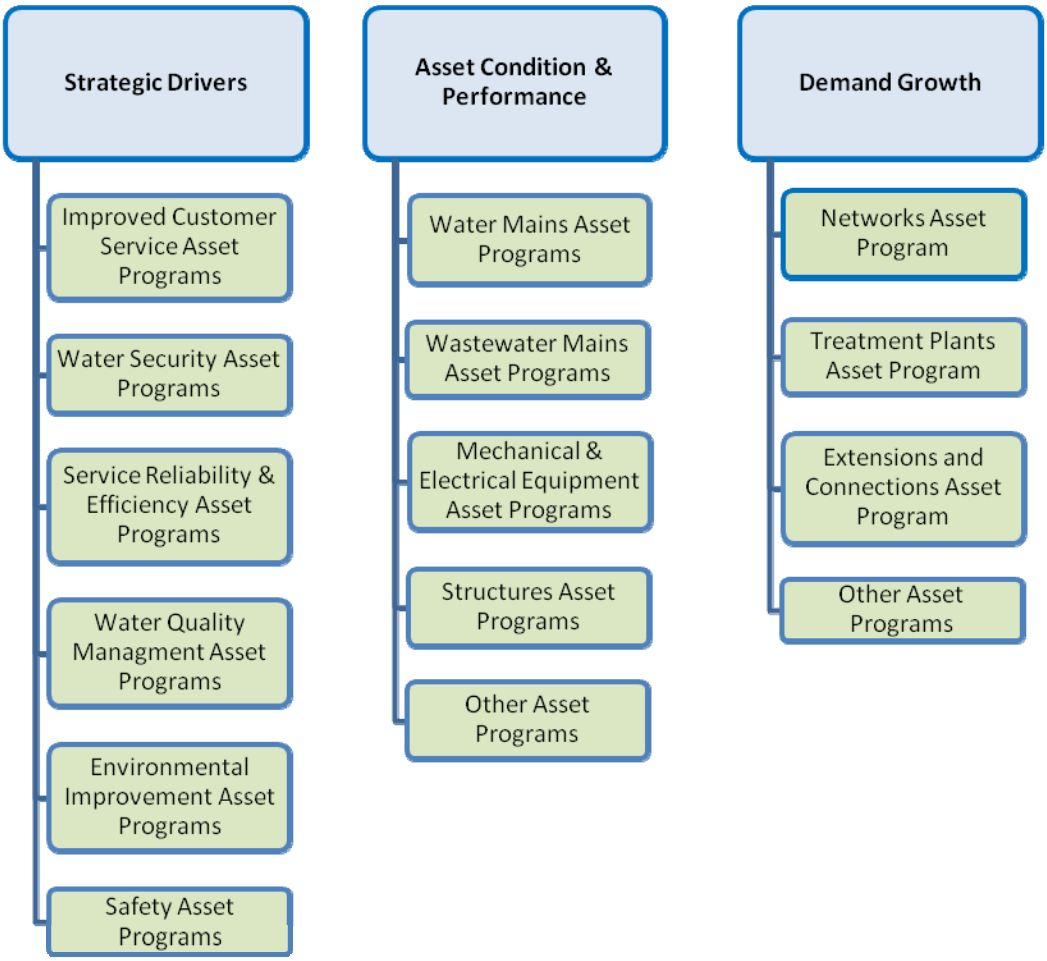
Within each of the three major operating environment themes, asset management activity can be further categorised into Asset Programs.

Each Asset Program has specific objectives, a clear underpinning assessment methodology and/or key drivers and gives a forward view of planned management activity that covers both operating and capital expenditure.

The Asset programs themselves are grouped into focus areas as shown in Figure 5.3.3.

Figure 5.3.3





A full list of Asset Programs is shown at Appendix 2.

As appropriate, the asset management activity undertaken within any Program will apply asset life cycle analysis covering planning, asset creation, operations, maintenance, rehabilitation, replacement/renewal and disposal.

Asset Management Framework – Asset Management Plans

As introduced above, Asset Management Plans, the output of asset management activity, give the forward projection of activity (e.g. preventive maintenance plans) and expenditure (both capital and operating) needed to manage the projected risks associated with the infrastructure base. They are aligned completely with Asset Programs. That is, the forward projection of capital and maintenance costs for each Asset Program is, in fact, the Asset Management Plan for that Program.

For any Program, the planned expenditure focus will be specific. For some Programs expenditure will be a mix between operating and capital – this will particularly be the case for Programs within the Asset Condition and Performance theme. For others, expenditure will be purely capital investment.

Asset Management Plans can also be produced for individual complex facilities, such as water and wastewater treatment plants and major pipelines. Under this option, sections of various Asset Programs will be represented in the facility plan. For example, a facility Asset Management Plan for a major wastewater treatment plant may contain links to various environmental improvement Asset Programs, safety Asset Programs and mechanical and electrical equipment Asset Programs.

Governance - Asset Management Policy

SA Water has formalised its asset management framework, at the highest level, through its corporate Asset Management Policy, which is approved periodically by the SA Water Board.

Asset Management Relationship to the Capital Works Plan

Integrated water utilities are infrastructure rich businesses. Their forward capital works plans are therefore dominated by works on the infrastructure assets. Since the results of asset management planning activity, individual thematic Asset Management Plans, include forward plans of required capital investment, it follows that the summation of the capital requirements across all Asset Management Plans will be close to a draft capital works plan for the utility.

In SA Water, for each Asset Program there is a resultant Asset Management Plan. The summation of the planned capital works for each of the sixty-odd Asset Programs is therefore the draft capital works plan for the organisation. This representation of the plan is in outcome terms rather than simply an aggregation of more than a thousand individual projects.

Additional aggregation of Programs to each of the major asset management themes, described previously, enables high level articulation of the level of capital investment required to manage risk associated with strategic drivers, asset performance and growth. The draft plan is therefore a valid representation of the level of capital investment SA Water should make in order to manage its risk effectively.

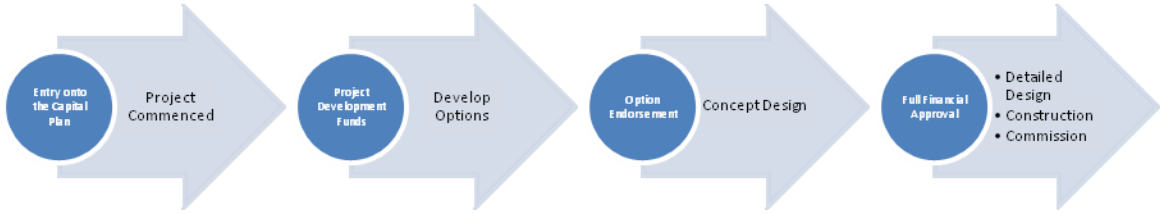
Since asset management planning activity is focussed on one, five and twenty five year horizons, the forward capital plan is automatically matched to the same planning periods.

Capital rationing is a reality that will be applied from time to time following completion of the draft plan. Cuts made to the draft plan will result in additional risk for the organisation but can sometimes be accommodated provided that the additional risk is clearly understood and accepted.

Capital Approval Process

Capital projects at SA Water are managed via the Corporate Project Management Methodology (*SA Water procedure CG171*). This methodology mandates the process steps that the project follows throughout its life. Incorporated within the methodology are the steps required to comply with the *SA Water Financial Approval Policy CP 023*. This Board endorsed policy mandates the criteria for the financial approval of capital projects including

"approval gates" which projects must clear prior to progressing. Greater guidance on the approval gates is provided within *SA Water procedure CG 037 Capital Expenditure Approval Process*. These approval gates include:



SA Water Capital Approval Process Gates

Entry onto the Capital Plan

Following on from the review of the business need as part of the asset management process, project proposals are considered as to whether they should be included within the capital plan. The criteria for the review include; project cost (including operational impact), risk if the project does not proceed and the business benefit. Additionally these criteria are used to assist in the prioritisation in the timing of investments.

Project Development Funds

Review of the updated business case and additional consideration as to the level of development funds required and the area of expenditure.

Option Endorsement

Review of the viable options for the project based upon achieving the project objectives with consideration of risk, financial impact, timing and the business benefits. All viable options are considered against a base case of the project not proceeding.

Full Financial Approval (Business Case)

Review of the full business case including, project deliverables, business benefits, scope, risk, timing and financial impact. Prior to seeking this approval the cost estimate for the project is independently reviewed by the SA Water estimating team or for projects of greater scale or complexity by external consultants. The project cannot proceed to the delivery (construction) phase until this approval is obtained.

Of the 2010-11 capital program approximately 75% of the project expenditure has already received Full Financial Approval, via internal SA Water approval or via Cabinet endorsement.

External Benchmarking

In addition to the capital process, projects are required to gain approval in accordance with *CP 034: Delegations of Financial & Procurement Authority*, for the procurement of services such as design or construction. This will generally be via market testing through a tender process to achieve the best value solution.

Process Benchmarking
As part of ongoing development of processes and practices, during 2009 SA Water benchmarked its capital processes against other Australian water utilities, including:

- Sydney Water
- Hunter Water
- Water Corp.
- SE Water
- Melbourne Water

This benchmarking exercise has been used as part of a continuous improvement process.

Alignment with Customer Requirements and Regulatory Obligations
Incorporated within the SA Water Capital Approval Process at each of the approval gates the "outcome" (benefit) of the project is considered as part of the project review to see if the project should proceed. The project outcome is defined in terms of quantified impact against the corporation's strategic targets. These strategic targets recorded on the corporation's SM and are grouped by objectives such as *System Performance, Customer Service* and *Water Quality*.

The Corporate Project Management Methodology requires that upon completion projects are assessed against the originally stated benefits to assess the project success as part of "benefits realisation".

Delivering the within the Proposed Timeframe
To manage the delivery of the capital program to the proposed timeframes SA Water has established the Corporate Project Management Methodology. This methodology is supported by processes and systems for managing and reporting of project progress, including corporate wide reporting of mandatory project milestones.

Having put systems in place to improve performance, for the last three financial years, i.e. 2006-07 to 2008-09, SA Water has achieved its expenditure target for capital delivery.

5.3.2 Benchmarking Capital Expenditure

From 2002-03 to 2007-08 the Corporation has had low levels of capital expenditure for metropolitan water supply and sewerage services. From 2005-06 to 2007-08 capital expenditure per property for regional water supply has consistently and significantly increased as regional sewerage expenditure has declined.

Sewerage capital expenditure has been focused on Environmental Improvement Programs (EIPs), while there has been a significant focus on improving regional water quality through the Country Water Quality Improvement Program (CWQIP).

This section will compare the Corporation's real capital expenditure with the other major urban and non-urban water utilities within Australia as reported in the 2007-08 NPR. Note the data reported in the NPR has been converted to a per property basis as this provides a more relevant measure.

Real capital expenditure per property – ($ / per property)

Water supply capital expenditure reflects the actual capital expenditure on water supply for the reporting year. This should include all capital expenditure for: new works; renewals or replacements; other expenditure that would otherwise be referred to as capital; and recycling water assets.

Sewerage capital expenditure is the actual capital expenditure on sewerage for the reporting year. This should include all capital expenditure for: new works; renewals or replacements; and other expenditure that would otherwise be referred to as capital.

Metropolitan Water Supply

Table 5.3.1 compares SA Water's real capital expenditure per property for metropolitan water supply.

Table 5.3.1

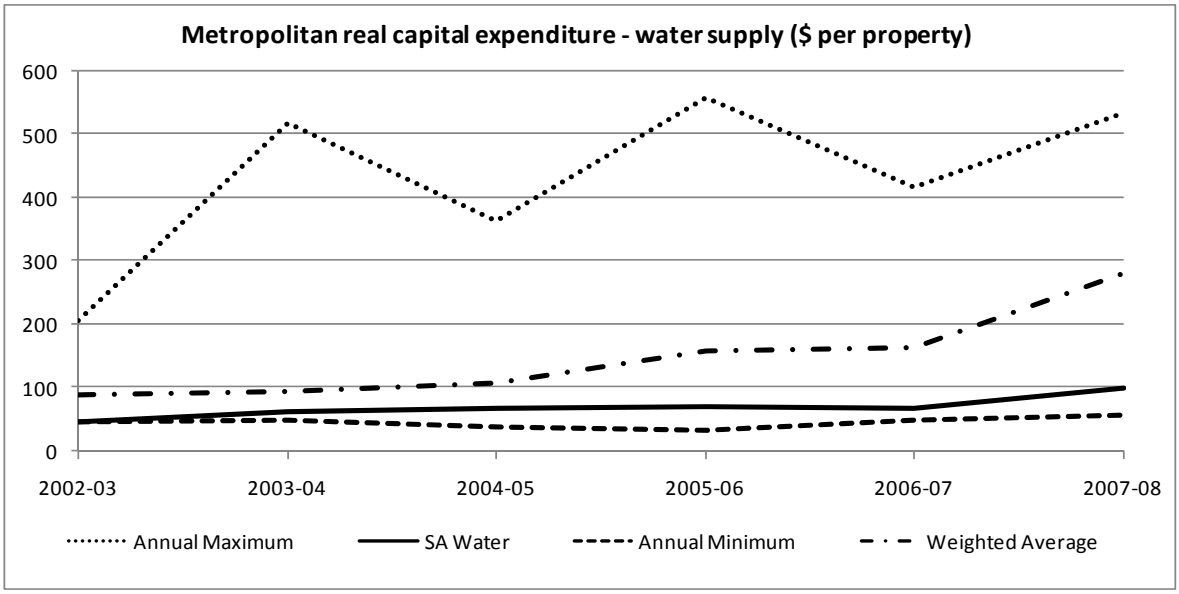
Real capital expenditure – water supply ($ / property) – 2007-08 Dollars							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Gold Coast Water	Qld	58	100	238	218	417	535
Sydney Water	NSW	66	56	57	101	133	524
ACTEW Corporation	ACT	70	247	363	179	145	338
Brisbane Water	Qld	95	98	78	101	238	312
Barwon Water	Vic	155	153	187	198	246	304
Power & Water Corp - Darwin	NT	177	518	228	188	157	283
Water Corporation	WA	205	173	190	559	334	196
Hunter Water	NSW	114	153	218	96	284	170
City West Water	Vic	55	90	117	122	84	108
SA Water	SA	46	63	67	70	67	101
Yarra Valley Water	Vic				138	113	86
South East Water Ltd	Vic	65	49	40	34	48	56
Metro Weighted Average		**89**	**95**	**107**	**160**	**165**	**282**

The Corporation's metropolitan capital expenditure for water supply in 2007-08 is in the low range of the compared entities. Sydney Water and Gold Coast Water reported significantly higher levels of capital expenditure per property in 2007-08.

The Corporation's metropolitan capital expenditure for water supply has been fairly stable over the period, although it has displayed a slight increase over the period. Figure 5.3.5 below shows the Corporation below the weighted average in terms of capital expenditure across the period 2002-03 to 2007-08. Notably, the only utilities with lower levels of capital expenditure over the period are retailers and not vertically integrated water utilities such as SA Water.

Also evident from Figure 5.3.4 is the lumpiness of capital expenditure generally as well as an overall increasing trend across Australia since 2004-05. This increasing trend has been driven by water utilities seeking to improve water security and meet increases in demand.

Figure 5.3.4



Going forward the Corporation's capital expenditure levels are set to increase significantly. Further details are provided in Section 5.3.3.

Metropolitan Sewerage

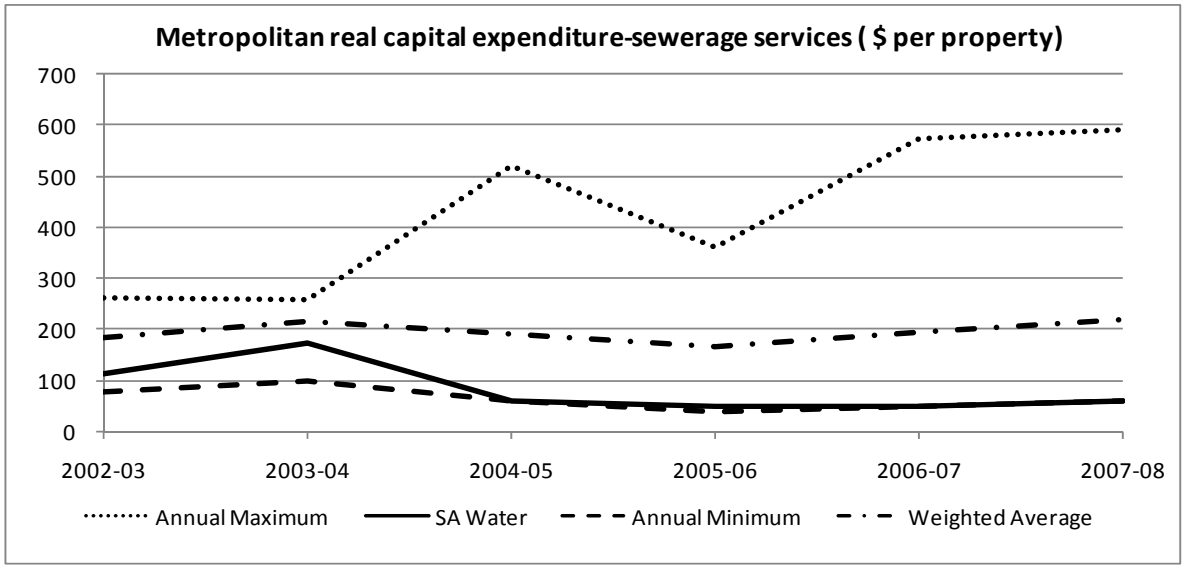
Table 5.3.2 compares SA Water's real capital expenditure per property for metropolitan sewerage services.

Table 5.3.2

Real capital expenditure – sewerage ($ / property) – 2007-08 Dollars							
	State / Territory	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Gold Coast Water	Qld	80	209	521	360	574	592
Water Corporation	WA	188	229	138	149	240	406
Sydney Water	NSW	257	257	192	198	243	263
Power & Water Corp - Darwin	NT	243	222	175	180	184	214
Hunter Water	NSW	235	227	244	280	213	208
Yarra Valley Water	Vic				157	165	159
Barwon Water	Vic	261	227	195	184	195	151
Brisbane Water	Qld	146	251	400	241	196	150
ACTEW Corporation	ACT	110	100	96	40	80	144
South East Water Ltd	Vic	129	143	140	76	109	114
City West Water	Vic	79	129	120	155	78	65
SA Water	SA	112	174	61	49	50	59
Metro Weighted Average		**185**	**214**	**193**	**168**	**196**	**219**

The Corporation recorded the lowest metropolitan capital expenditure per property for sewerage services in 2007-08. Gold Coast Water once again reported significantly higher levels of capital expenditure.

Figure 5.3.5



The Corporation's sewerage capital expenditure has fluctuated more significantly, compared to the water business, over the period due to the completion of several EIPs as well as the relocation of the Port Adelaide Waste Water Treatment Plant (WWTP) to Bolivar. The decrease from 2003-04 reflects the winding back of capital expenditure following the completion of several of these EIPs.

The EIPs have included the Bolivar Dissolved Air Flotation Filtration plant and associated sludge dewatering process, the Queensbury Diversion, the Christies Beach EIP and the Glenelg EIP. The increased capital expenditure has delivered improved outcomes for the environment, which can be seen by the improvement in the percentage of sewage treated to a tertiary level (refer Table 4.3.1), increasing the percentage of water recycled (refer Chapter 4.1) and helped to ensure the Corporation continues to be EPA compliant (refer Chapter 4.3).

Regional Water Supply

Table 5.3.3 below compares the Corporation's real capital expenditure per property for regional water supply.

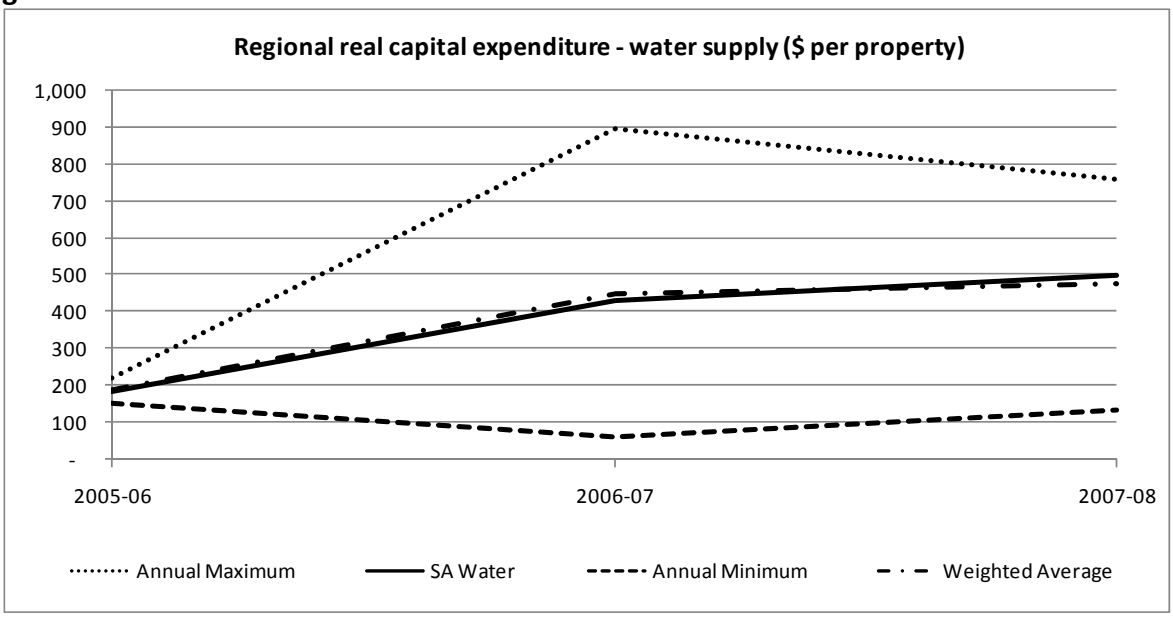
Table 5.3.3

Real capital expenditure – water ($ / property) – 2007-08 Dollars				
	State / Territory	**2005-06**	**2006-07**	**2007-08**
Country Energy	NSW			756
SA Water	SA	185[(1)]	433	500
South Gippsland Water	Vic	222	895	494
Power & Water Corp - Alice Springs	NT	150	60	133
Byron Shire Council	NSW			132
East Gippsland Water	Vic			
Regional Weighted Average		**187**	**449**	**476**

(1) Total capital expenditure for regional SA was not reported in 2005-06 for benchmarking purposes. This figure is derived utilising internal estimates consistent with the Corporation's Annual Report and NPR definitions.

Figure 5.3.6 below shows the Corporation's capital expenditure per property has been consistently average when compared to other entities.

Figure 5.3.6



The increasing trend in regional water from 2005-06 to 2007-08 is due to several significant projects including:

- Stage 3 of the Country Water Quality Improvement Program (CWQIP). Underpinned by the Corporation's vision of providing water for growth, development and quality of life to all South Australian, this project improved water quality to several regional communities by delivering filtered water through a series of water treatment plants and pipelines;
- the construction of a pipeline between Lock and Kimba on the Eyre Peninsula, with the aim to reduce pressure on groundwater sourcing on the Eyre Peninsula; and
- the completion of a 12km pipeline from Milang to connect to existing network in Clayton, replacing existing aquifer and lake extraction.

Regional Sewerage Services

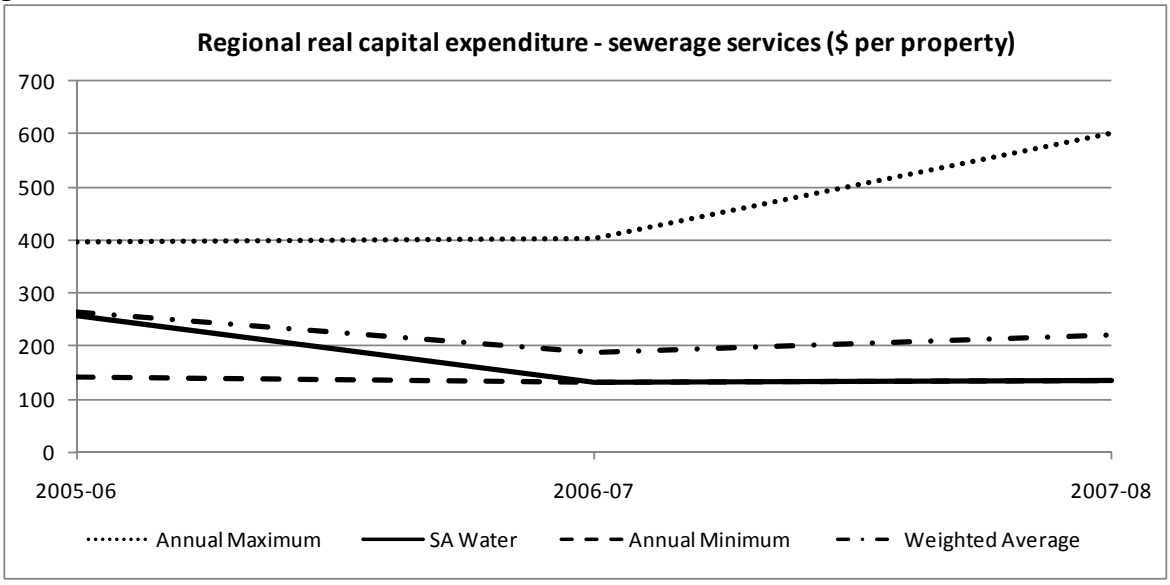
Table 5.3.4 below compares the Corporation's real capital expenditure per property for regional sewerage services.

Table 5.3.4

Real capital expenditure – Sewer ($ / property) – 2007-08 Dollars				
	State / Territory	**2005-06**	**2006-07**	**2007-08**
Byron Shire Council	NSW			601
South Gippsland Water	Vic	396	266	318
Power & Water Corp - Alice Springs	NT	144	401	301
Country Energy	NSW			152
SA Water - Country	SA	256(1)	133	135
East Gippsland Water	Vic			
Regional Weighted Average		**265**	**188**	**221**

(1) Total capital expenditure for regional SA was not reported in 2005-06 for benchmarking purposes. This figure is derived utilising internal estimates consistent with the Corporation's Annual Report and NPR definitions.

Figure 5.3.7



Reducing the impact of the Corporation's wastewater treatment plants on the environment has been a major driver of capital expenditure in this segment. The Corporation's Environmental Improvement Program (EIP) has seen the completion of several wastewater treatment plant EIPs, several prior to 2005-06.

In 2006 the Whyalla Wastewater Treatment Plant EIP was completed and now provides reclaimed water to supply irrigation to the Whyalla Golf Club and the city's municipal parks and gardens. This replaced the River Murray water used for irrigation in these areas. Whyalla's wastewater is now captured before it becomes so saline that opportunities for reuse are limited. Wastewater is pumped to the plant via a new pipeline which reduces the discharge of treated water to the Spencer Gulf.

5.3.3 Capital Expenditure Going Forward

Forecast capital expenditure is set to peak in 2009-10 at around $930 million (real dollars) driven by expenditure on the Adelaide Desalination Plant (ADP).

Over the next five years the focus of capital expenditure in the water business is on improving the State's water security. In the sewerage services business the emphasis will remain on reducing the Corporation's environmental impact, including increasing recycling projects as well as ensuring treatment plants have the capacity to meet demand growth.

The Corporation's capital expenditure program peaks in 2009-10 above $930 million in real terms (net of Federal Government funding). The key driver for this significant increase in capital expenditure is spending on water security initiatives for metropolitan Adelaide, primarily the Adelaide Desalination Plant (ADP).

Metropolitan Water

The ADP will provide up to half of Adelaide's drinking water needs. The project received major development approval in 2009 after an exhaustive assessment using the State's major development process.

The development approval addressed more than 100 separate environmental, social and economic issues identified by the independent Development Assessment Commission, along with issues raised throughout the extensive public consultation process. SA Water continues to work hard with contractors to ensure the highest levels of environmental standards for the project.

Bulk earthworks were nearing completion toward the end of 2008-09 and the project has been fast-tracked to deliver first water from the plant in December 2010. In late 2012 the plant will reach capacity of 100 gigalitres, providing up to half of Adelaide's drinking water needs.

Although the ADP, by sheer size, dominates the Corporation's capital plan the level of capital expenditure in the other segments remains constant or increases also.

Capital expenditure for metropolitan non-water security expenditure declines out to 2011-12, but then begins to increase slightly out to 2013-14.

Metropolitan Sewer

Capital expenditure is set to increase significantly above 2008-09 levels in 2009-10 and 2010-11 as the Corporation upgrades several of its existing wastewater treatment plants as a part of its "Demand Growth" asset management focus (refer Section 5.3.1). Of particular note are the planned capacity upgrades to the Christies Beach and Aldinga Wastewater Treatment Plants.

In addition to the demand growth focus there is also the need to maintain asset condition and performance. Projects planned in this area include mechanical and electrical plant renewal at the Bolivar Wastewater Treatment Plant and several other smaller metropolitan treatment plants.

To improve water security, through increased re-use, the Corporation is also investing in the Southern Urban Re-Use Project. The project is part of Water Proofing the South, a localised integrated water resource management strategy based entirely in the City of Onkaparinga. It will bring dual reticulation class water to residential areas south of the Onkaparinga River.

Regional Water

Capital expenditure declines from 2010-11 to 2012-13 before increasing once again in 2013-14. The increase in 2013-14 reflects the need to upgrade several of the Corporation's regional water treatment plants as a part of its "Demand Growth" asset management focus (refer Section 5.3.1).

Driving the levels of capital expenditure in 2008-09 and 2009-10 is the Corporation's continued focus of improving water quality, through the Country Water Quality Improvement Program (CQWIP) and other water quality initiatives.

Regional Sewer

Capital expenditure declines from 2011-12 to 2012-13 before increasing once again in 2013-14. The increase in 2013-14 partly reflects the need to upgrade several of the Corporation's regional water treatment plants as a part of its "Demand Growth" asset management focus (refer Section 5.3.1).

As well as upgrading and increasing capacity in several existing plants, there are several projects planned to improve the Corporation's environmental performance. These projects include reducing the nutrient load at the Bird In Hand and Angaston Wastewater Treatment Plants and EIPs at the Naracoorte, Mount Burr and Nangwarry Wastewater Treatment Plants.

6. Value for Money

The Customer Satisfaction Survey conducted by the Corporation in 2009 indicates customers are generally very satisfied with the range and quality of services provided by the Corporation.

The standard of service offered by the Corporation to its customers is predominately at the mid-to-high range in the metropolitan area and in the mid-range in the regional areas when compared with the service levels offered customers of the other water bodies.

While SA Water's operating costs for water supply and wastewater services are comparatively low in Adelaide when compared with other Australian cities, average water and wastewater bills are comparatively mid range, but above the weighted average. To some extent this level of contribution may reflect the relative quality of assets which, in turn, as earlier demonstrated, provides a generally high level of standards of service.

6.1 INTRODUCTION

Value for money for customers of a water company like SA Water that is highly asset-based and does not set the prices it charges, is problematic and difficult to assess. Demonstrating value for money is made even more challenging when comparable water providers interstate do not have the same operating conditions. For example, most do not pump source water long distances; most have access to source water that is of generally good quality; and most provide their services in geographical conditions with soils that are either sandy or more readily worked compared with the clay soils around Adelaide. To compound problems associated with the use of comparisons, as discussed earlier there is an inconsistent approach to the valuation of assets in the water industry in Australia which has a consequential impact on the calculation of total costs.

Notwithstanding these quite significant obstacles it is important to consider the services being provided in the context of the charges being levied, that is, the value for money for customers who purchase water and wastewater services. Value for money for customers is considered here in terms of:

- customer feedback – that is, what customers say about the quality of services and the price;
- an assessment of the relative quality of service compared to other water bodies; and
- an assessment of the costs of providing the services relative to the customer's bill.

A brief discussion is also provided about the Corporation's Customer Assist Program that has been developed to assist customers in financial hardship.

In aggregate this information provides some assessment of the value for money customers derive from the services provided by the Corporation.

6.2 CUSTOMER FEEDBACK

As indicated earlier in this report, in June 2009 the Corporation undertook its ninth annual customer satisfaction survey to measure satisfaction with its service delivery and performance across a broad range of areas. The state-wide study involved three telephone surveys for three target groups:

- General households – 600 interviews (400 metropolitan and 200 regional);
- Households who have contacted SA Water – 401 interviews (209 metropolitan and 192 regional); and
- Businesses – 304 interviews (200 metropolitan and 104 regional).

General household survey results

Table 6.1 shows the total results of the general household survey. Overall, these results show:

- very high levels of satisfaction with indicators such as reliability of supply, safety of drinking water and essential service provided;
- relatively high levels of satisfaction with SA Water being professional and competent, responsive when something goes wrong, active in educating the public about water issues, and being trusted to manage the State's water and wastewater systems well; and
- mixed levels of satisfaction with the amount charged for water as it represents good value and in reducing greenhouse gas emissions.

Overall, the survey confirmed SA Water is well regarded as a service provider with customer satisfaction at a high rate of 8.0 (out of 10).

Table 6.1

General Household Survey Results

Attribute	Result
Reliability of service	8.5
Safety of drinking water	8.2
Essential service	8.0
Performance and competence	7.6
Responsiveness to a problem	7.1
Advice in educating the public	7.0
Trusted manager of water and wastewater systems	7.0
Charges reflect value for money	6.5
Reducing greenhouse gas emissions	6.3

Households who have contacted SA Water

Table 6.2 shows the results of the survey of customers who had contacted SA Water recently. In particular, these are results of the survey that sought responses concerning the level of satisfaction with the service provided by SA Water. Overall, these results show:

- very high levels of satisfaction with SA Water's reliability of supply, the safety of drinking water supplied, and the provision of an essential service;
- relatively high levels of satisfaction with SA Water's services for being active in educating the public about water issues and how to conserve water, being trusted to manage the State's water and wastewater systems well, being responsive when something goes wrong, and being professional and competent; and
- mixed levels of satisfaction with the amount charged for water as it represents good value and in reducing greenhouse gas emissions.

Overall, the survey confirmed SA Water is well regarded as a service provider with customer satisfaction at a high rate of 8.0.

Table 6.2

Household's contacted SA Water Survey Results

Attribute	Result
Reliability of service	8.5
Safety of drinking water	8.0
Essential service	8.0
Professional and competent	7.9
Responsiveness to a problem	7.8
Trusted manager of water and wastewater systems	7.3
Advice in educating the public	7.2
Charges reflect value for money	6.6
Reducing greenhouse gas emissions	6.2

Business survey results

Table 6.3 shows the results of the survey of business customers. In particular, these are results of the survey that sought responses concerning the level of satisfaction with the supply of mains water and sewerage services to their business. Overall, these results show:

- very high levels of satisfaction with reliability of supply and the effort to provide water at an acceptable pressure;
- relatively high levels of satisfaction for SA Water being professional and competent, being trusted to manage the State's water and wastewater systems well, responsiveness when something goes wrong, the level of commitment to improving drinking water quality, the level of environmental responsibility; and
- mixed levels of satisfaction with the value for money that SA Water provides in return for what they charge and the extent future needs are being met, not just managing for today.

Overall, the survey confirmed SA Water is well regarded as a service provider with business customer satisfaction at a high rate of 7.8.

Table 6.3

Business Customer Survey Results

Attribute	Result
Reliability of service	8.6
Effort to provide water at acceptable pressure	8.3
Professional and competent	7.5
Responsiveness to a problem	7.3
Commitment to improving drinking water quality	7.1
Level of environmental responsibility	7.0
Trusted manager of water and wastewater systems	7.0
Charges reflect value for money	6.9
Focus on future needs	6.7

6.3 COMPARATIVE LEVELS OF SERVICE

Metropolitan operations

The Corporation's performance in a range of service measures compared to other interstate water utilities for its metropolitan operations is summarised in Table 6.4 The compared utilities are the same as those used in the benchmarking analysis of the NPR in the earlier chapters of this report. In comparing the relative performance, the performance of each water utility is ranked against the total number of compared utilities – the better performing being given a higher ranking. The number shown in brackets is the number of utilities compared. This varies due to the availability of data.

The Table also makes a qualitative assessment of the performance – they are assessed as either high, medium or low for a segment of the ranked scores as follows:

Ranking of 1-4	High
Ranking of 5-8	Medium
Ranking of 9-12	Low

For example, from the Table, SA Water's metropolitan operations performance for the number of water quality complaints per 1,000 properties was the highest from a total of 12 compared utilities. This was considered high performance. Where the Corporation has scored "Low" performance (number of sewer mains breaks and chokes and net greenhouse gas emissions), issues associated are discussed in Sections 4.2 and 4.3 above.

Table 6.4

SA Water metropolitan service performance - summary comparisons

Service Standard	Rank 07-08	Corporation Performance
Customer Service and Water Quality		
Percentage of population where microbiological compliance was achieved	Equal 1	High
Number of water quality complaints per 1,000 properties	1 (12)	High
System Performance		
No. of water main breaks per 100 km of main	4 (12)	High
Number of sewer main breaks and chokes (per 100 km)	10 (12)	Low
Infrastructure leakage index	5 (12)	Med
Sustainable Future		
Sewage treated to a tertiary level (%)	Equal 1	High
Recycled water (%of effluent recycled)	1 (12)	High
Net greenhouse gas emissions (tonnes CO2 –equivalent)	12 (12)	Low
Bio-solids reused (%)	1 (12)	High
Sewer overflows to the environment (per 100 km)	8 (12)	Med

Regional operations

The results of comparisons of performance of the Corporation's regional operations relative to interstate regions regional utilities are provided in Table 6.5 . A ranking is provided according to the number of utilities with data supplied in a similar manner to the metropolitan operations.

The Table also makes a qualitative assessment of the performance – either high, medium or low and relates this to a segment of the ranked scores[8].

[5] The assessments have been assigned on the basis of the following number of indicators:

No. of indicators	High	Medium	Low
7	1-2	3-4	5-7
8	1-3	4-6	7-8
9	1-3	4-6	7-9
12	1-4	5-8	9-12

Table 6.5

SA Water's relative performance – Regional operations – service standards

Performance measure	Mt Gambier		Whyalla	
	Ranking	Performance	Ranking	Performance
Customer Service and Water Quality				
Number of water quality complaints/1,000 properties	6 (7)	Low	4 (7)	Medium
System Performance				
Number of water main breaks/100 km	1 (7)	High	5 (7)	Low
Number of breaks and chokes/100km	1 (7)	High	2 (7)	High
Sustainable Future				
Net greenhouse gas emissions (tonnes CO2 – equivalent)	3 (5)	Medium	5 (5)	Low

Overall comparison of service level

When comparing the range of service measures with other water companies in Australia (12 in the metropolitan area and up to 7 in regional areas), the Corporation displays the following overall relative performance in standards of service:

Service Standards	Relative Performance		
	High	Medium	Low
Metropolitan	6	2	2
Mt Gambier	2	1	1
Whyalla	1	1	2
Total	**9**	**4**	**5**

That is, when aggregated approximately 70% of the Corporation's performance results are at the high and medium comparative level with the remaining 30% at the low comparative level. It can therefore be concluded that the standard of service offered by the Corporation to its customers is predominately at the mid-to-high level when compared with the service levels offered customers of compared water utilities.

6.4 COMPARATIVE LEVEL OF COSTS OF SERVICES AND CUSTOMER BILLS

A customer's assessment of value for money invariably will be the intersection of value or quality of service and the cost or charge. Customer feedback has been discussed in Chapter 6.2 and a comparison of levels of service has been made in Chapter 6.3. This chapter considers the relative costs of providing the service and the corresponding charges levied on customers.

The 'costs' are reflected by the operating cost per property for water supply and operating cost per property for wastewater services contained in *NPR 2007-08*. This metropolitan data has been provided already in this report but it is combined in Table 6.6 for broader comparison purposes. Also, for ease of comparison, data is presented for each Australian

mainland city (based on the relevant water utility in each State/Territory). A weighted average has been used to recognise the substantially different number of properties served in each city. For example, Darwin has substantially higher costs than the other cities but this has little impact on the weighted average given its size.

Table 6.6 shows the operating costs per property for combined water supply and wastewater services in Adelaide are the lowest in 2007-08 and consistently lowest of each city in the previous five years. Costs in Adelaide are consistently below the weighted average cost.

Table 6.6

Operating cost per property for metropolitan water supply & wastewater services (2007-08 dollars)

	State / Territory	2003-04	2004-05	2005-06	2006-07	2007-08
Metro						
SA Water	SA	334.20	343.49	347.27	362.21	361.00
Water Corporation - Perth	WA			352.58	381.76	391.00
Melbourne*	Vic	454.57	481.93	447.91	449.93	449.58
Brisbane Water	Qld	437.80	447.84	436.48	466.14	529.00
Sydney Water	NSW	404.00	424.00	346.00	445.00	589.00
ACTEW Corporation	ACT	633.87	617.42	521.44	592.70	609.00
Power and Water - Darwin	NT		598.94	597.91	740.88	720.00
Weighted Average		418.45	439.02	398.47	437.17	492.44

* This is a consolidation of data for City West Water, South East Water and Yarra Valley Water.

Charges to customers are presented in Table 6.7 as a combined average water and wastewater bill based on a water consumption of 200kL per annum. A weighted average has been used. Data shows that Adelaide residents are charged at about the mean of their interstate counterparts but slightly more than the weighted average.

Table 6.7

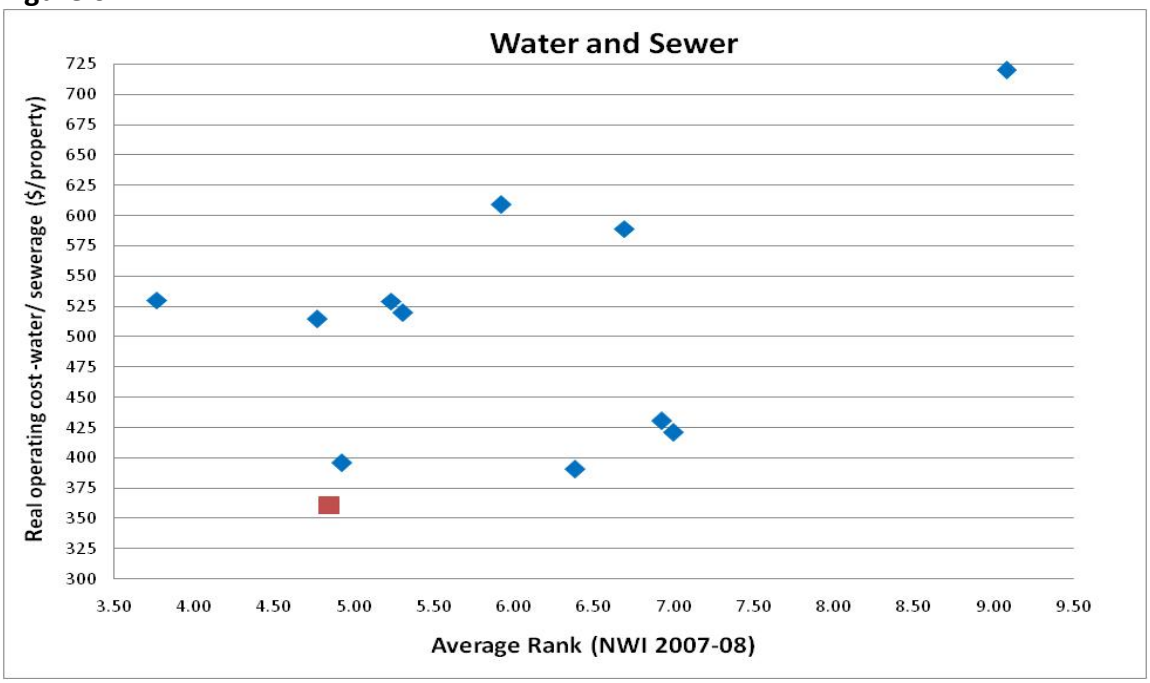
Annual Bill (water and sewerage)

	State / Territory	2007-08
Metro		
Melbourne*	Vic	540.9
Power and Water - Darwin	NT	600.34
SA Water	SA	729.92
Sydney Water	NSW	732.32
Brisbane Water	Qld	754.4
Water Corporation	WA	796.26
ACTEW Corporation	ACT	879.26
Weighted Average		685.43

** This is a consolidation of data for City West Water, South East Water and Yarra Valley Water.*

As an alternative graphical representation, Figure 6.1 shows the combined real operating costs for water and wastewater services of twelve metropolitan water providers overlaid with an average ranking of thirteen (13) key performance measures from the NPR 2007-08. The table shows that SA Water's operating costs (shown in red) are lowest of all the compared providers and ranked third in terms of the average of the 13 key performance measures.

Figure 6.1



6.5 CUSTOMER ASSIST PROGRAM

SA Water recognises that there are times where customers find it difficult to meet household expenses and other financial obligations due to economic hardship, temporary financial difficulty or tragic life events. In order to provide assistance, SA Water has introduced a Customer Assist Program aimed at identifying customers who are having difficulties and providing assistance as early as possible to help prevent customers falling into a utility debt spiral.

Potential causes of hardship can include:
Unemployment
Low / reduced income
Ill health
Domestic violence
Addictions (drugs, alcohol, gambling)
Unexpected large or multiple bills
Relationship breakdown

Through the Customer Assist Program customers can access assistance through flexible payment arrangements, whilst being shielded from further fees and charges. As of September 2009, over 435 customers have entered the Customer Assist Program with many more receiving ongoing assistance.

An integral part of SA Waters Customer Assist Program is working closely with various organisations which make up South Australia's welfare sector. The Customer Assist Program Co-ordinator works directly with financial Counsellors to determine the appropriate type of assistance, ensuring customers are not negatively and unnecessarily impacted by further recovery action.

In order to promote the Customer Assist Program, SA Water co-presents at information forums with Origin Energy and AGL Energy. These forums are aimed at educating financial counsellors on the assistance which is available.

Additional schemes that form part of the Customer Assist Program include the implementation of Centrelink's *Centrepay* functionality which was introduced in December 2009. This will give customers who receive a Centrelink benefit the opportunity to have nominated payments deducted from their entitlement on an automated regular basis.

An initiative to provide identified hardship customers with assistance in the repairing of leaking internal pipe work is currently being evaluated. The basis of this initiative is that hardship customers who are on fixed low incomes may not have the financial ability to perform required maintenance on their internal pipe work, which may lead to abnormally high water use bills.

Appendix 1 – SA Water Infrastructure Assets

SA Water Infrastructure Assets

(at 30 June 2008)

Asset Category	Values		Assets		
	GRV ($m)	WDV ($m)	Total	Adelaide	Country
Water mains	3,524	1,904	25,893 km	8,889 km	17,004 km
Major Pipelines	1,932	1,185	2,352	237 km	2,115 km
Water Pump Station	324	113	303	64	239
Water Storage Tanks	610	335	530	139	391
Water treatment Plant	721	479	38	6	32
Large Dams	917	460	18	11	7
Bores & Wells	10	6	180	0	180
Connection (inc. Meters)	663	464	615,942	434,282	181,660
Other Water Assets	174	91	-	-	-
Wastewater Mains	2,398	1,518	8,501 km	7,099 km	1,402 km
W/w Treatment Plants	766	51	25	5	20
W/w Pump Stations	354	196	564	339	225
W/w Connections	860	482	483,558	421,962	61,596
Land & Buildings	264	232	-	-	-
Total	13,517	7,976	-	-	-

Appendix 2 – Asset Programs by Major Theme & Focus Area

FULL LIST OF ASSET PROGRAMS BY MAJOR THEME AND FOCUS AREA

Major Theme	Sub-theme Category (Focus Area)	Asset Program Title
Strategic Drivers	Improved Customer Service	Improved Customer Service
	Water Security	Water Security Drought Response Water Licence Purchases Recycled Water Expansion Water leakage Management
	Service Reliability & Efficiency	Service Capability Management Energy Management
	Water Quality Management	Cryptosporidium Management Source Water Quality Improvement Network Water Quality Management Treatment Plant Water Quality Management Country WQ – improve potable supplies Country WQ – minor system aesthetics
	Environmental Improvement	Adelaide Coastal Waters Management Adelaide Hills Backlog Sewerage Climate Change- Greenhouse Impacts Environmental Improvement Program (EIP) Environmental Flows EPA Water Quality Policy Implementation Improve Environmental Performance Noise Management Odour Management Overflow Abatement Program Sludge/Biosolids Management
	Safety	Dam Safety Improvement OHS Improvement Security Management
Asset Condition & Performance	Water Mains Management	Water Network – Major Pipelines Water Network – Trunk Mains Water Network – Reticulation Mains Water Network – Ancillaries
	Wastewater Mains Management	W/water Network – Trunk Mains W/water Network – Reticulation Mains W/water Network – Pumping Mains W/water Network – Ancillaries
	Mechanical & Electrical Equipment Management	M & E – Major Pipelines M & E – Treatment Plants M & E - Networks
	Structures Management	Structures – Major Pipelines Structures – Treatment Plants Structures – Networks

Appendix 2 – Asset Programs by Major Theme & Focus Area

		Dams & Weirs Management
	Other (smaller asset class) programs	SCADA Management Cathodic Protection Management Customer Meter Fleet Management Master Meter Management Recycled Water Mains Recycled Water Treatment Land Management Regional Accommodation
Demand Growth	Networks	Growth – Networks
	Treatment	Growth – Treatment Plants
	Extensions and Connections	Extensions and Connections (as mandated by policy)
	Other	Systems Planning Tools

Appendix 3 – Source Data

Strategic Map

The Corporation's Strategic Map (from this point forward referred to as SM) provides the overarching direction of the Corporation, including its vision, core business and values. The Strategic Map provides an overview of the Corporation's strategy via the Strategic Objectives which are supported by key performance indicators (KPI's) and the associated targets that SA Water is aiming to achieve by 2013-14. The Corporation has been using the Strategic Map to monitor its performance in key areas since 2006-07 and to also guide its planning into the future.

In assessing performance, the Efficiency Report discusses 2006-07, 2007-08 and 2008-09 Strategic Map results and any prevailing trends. The report also refers to the Strategic Map targets in 2013-14 to assess where the Corporation is aiming to improve service levels.

National Performance Report

Since 2005-06, the National Water Commission (NWC) in association with the Water Services Association of Australia (WSAA) has published a National Performance Report (NPR).

The NPR seeks to improve performance reporting of the Australian urban water utilities by ensuring definitions are consistent and data is accurate. The NPR highlights trends in the performance of each utility and enables comparisons between utilities. The NPR is based on the principles of comparability, accuracy and consistency and covers all the critical performance areas in the provision of water services including health, customer service, asset management, environment, finance and pricing. The accuracy of information is ensured by a rolling 3 year auditing regime and, to ensure consistency, the NPR is based on a nationally consistent framework of definitions developed and agreed by NWC, the NWI parties and WSAA. Despite the efforts of the NWC and WSAA to ensure comparability between the performances of utilities, several factors need to be considered when analysing trends. For example, the performance of utilities is affected by structural and geographical factors such as "functional responsibility, water/sewerage network characteristics, customer base composition, physical operating environment"[9], demand management initiatives, age of infrastructure etc. Financial factors such as the asset valuation methodology adopted may also affect comparability.

The first section of the NPR, Part A, provides a set of 30 separate performance indicators which have been used in the Efficiency Report to analyse longer term trends in performance and to benchmark performance against comparable Australian water utilities.

Data used in this Efficiency Report is primarily sourced from the NPR 2007-08. The NPR 2008-09 was not released at the time of compiling this report. The release date is due to be in late April.

For metropolitan operations, the NPR 2007-08 includes data for the period 2002-03 to 2007-08.

Appendix 3 – Source Data

For regional operations, the 2007-08 NPR includes data from 2005-06 to 2007-08. For South Australia, the NPR only includes regional data for Mt Gambier and Whyalla. This is consistent with the reporting requirements of the NWC that utilities reporting in the NPR must have more than 10,000 connections. Data published in the NPR is required to be audited by an independent party.

For the 2006-07 NPR SA Water focussed on data for the metropolitan area. In 2007-08 focus was placed on the regional Centres of Mt Gambier and Whyalla. Consequently, historical data for Mt Gambier and Whyalla prior to 2007-08 is minimal. Furthermore, due to the costs of auditing and demands on the resources of data providers, SA Water separates the auditing required for metropolitan area and regional centres. Another addition to the 2007-08 NPR for the regional operations of SA Water is the publishing of 'Country as a whole' data in the financial section. Financial data for both Mt Gambier and Whyalla is not able to be provided in the NPR at this stage.

Financial Data

The financial analysis of past performance presented in the Commercial Success chapter (Chapter 5) is, as far as possible, based on data reported in the NPR 2007-08 which has been sourced from the Corporation's financial accounts. Where NPR data was not available, internal estimates have been included in Chapter 5, consistent with the Corporation's Annual Report segment reporting. Note there are limitations generally in terms of analysing segmented data due to the allocation of indirect costs.

All figures presented in Chapter 5 are in real 2007-08 dollars, consistent with the 2007-08 NPR. Capital expenditure has also been stated on a net of Federal funding basis, consistent with the regulatory approach used to set water and sewer prices.

Appendix 3 – Source Data

1.5 SELECTION OF COMPARATOR WATER UTILITIES

The 82 water utilities that reported in the NPR 2007-08 have been arranged into the following classifications for analytical and presentation purposes:

- Major utilities (large), greater than 100,000 connected properties;
- Major utilities (other), those between 50,000 and 100,000 connected properties;
- Non-Major utilities (large), those between 20,000 and 50,000 connected properties;
- Non-major utilities (other), those between 10,000 and 20,000 connected properties; and
- Bulk utilities.

SA Water is represented as a major urban utility (large) for metropolitan operations and a non-major utility (other) for its Mt Gambier and Whyalla operations.

For the purpose of this Report, comparisons for metropolitan operations are made with twelve similar metropolitan water and wastewater utilities as follows:-

ACTEW Corporation (ACT)
SA Water (SA)
Barwon Water (Vic)
City West Water (Vic)
South East Water Ltd (Vic)
Yarra Valley (Vic)
Sydney Water (NSW)
Hunter Water (NSW)
Water Corporation (WA)
Gold Coast Water (Qld)
Brisbane Water (Qld)
Power and Water Corporation – Darwin (NT)

For regional operations, comparisons of performance are made with seven other regional water and wastewater utilities as follows:-

Power and Water Corporation – Alice Springs (NT)
SA Water – Whyalla (SA)
South Gippsland Water (Vic)
East Gippsland Water (Vic)
SA Water – Mt Gambier (SA)
Byron Shire Council (NSW)
Country Energy (NSW)

For the benchmarking analysis, where a utility has not reported data the utility's name is not shown in the Table.