TRANSPARENCY STATEMENT

WATER AND WASTEWATER PRICES IN METROPOLITAN AND REGIONAL

SOUTH AUSTRALIA

2005-06

TRANSPARENCY STATEMENT — Part A

WATER AND WASTEWATER PRICES IN METROPOLITAN AND REGIONAL

SOUTH AUSTRALIA

2005-06

South Australian Government
December 2004

Overview of the Transparency Statement

This Transparency Statement on 2005-06 Water and Wastewater Pricing in Metropolitan and Regional South Australia continues to:

- provide greater transparency in the setting of water and wastewater prices
- document and report on the matters considered in the Government's 2005-06 water and wastewater pricing decisions
- document the extent to which the Government's water and wastewater pricing processes have complied with Council of Australian Governments' (CoAG) agreements and pricing principles.

The Government published two separate Transparency Statements on the water and wastewater pricing processes for 2004-05, both of which were referred to the Essential Services Commission of South Australia (ESCOSA) for its independent review. For 2005-06, the Government has considered water and wastewater pricing concurrently and published this single Transparency Statement. Following a recommendation by ESCOSA, Cabinet considered an earlier draft of parts of this Transparency Statement when reaching its 2005-06 pricing decisions.

In this Transparency Statement the Government has endeavoured to address, to the extent possible, ESCOSA's findings and assessments by the National Competition Council (NCC). The NCC has previously assessed the Government's progress in implementing CoAG water reforms and made recommendations to the Federal Treasurer on National Competition Policy (NCP) payments to jurisdictions.

In November 2004 the Government approved a 3% average increase for 2005-06 water prices and wastewater charges, consistent with the Adelaide consumer price index. In reaching this decision, the Government took into consideration economic efficiency, social justice, environmental issues, regional development and existing CoAG obligations.

Similar to the 2004-05 water and wastewater pricing decisions, the Government intends to refer this Transparency Statement to ESCOSA for an independent inquiry into the pricing processes and the adequacy of the application of the CoAG principles.

TABLE OF CONTENTS

Abbreviations

AASB	Australian Accounting Standards Board
APS	accounting policy statement
BOD	biochemical oxygen demand
CoAG	Council of Australian Governments
CPA	Competition Principles Agreement
CSIRO	Commonwealth Science and Research Organisation
CSO	community service obligation
DFC	Department for Families and Communities
DTF	Department of Treasury and Finance
DWLBC	Department of Water, Land and Biodiversity Conservation
EBIT	earnings before interest and taxes
EBITDA	earnings before interest, taxes, depreciation and amortisation
EEL	Environmental Enhancement Levy
EIP	environmental improvement program
EPA	Environment Protection Authority
ESC	Essential Services Commission (of Victoria)
ESCOSA	Essential Services Commission of South Australia
EWS	Engineering and Water Supply Department
GPOC	Government Prices Oversight Commission (of Tasmania)
ICRC	Independent Competition and Regulatory Commission (of the Australian Capital Territory)
IPART	Independent Pricing and Regulatory Tribunal of New South Wales
kL	kilolitre (1000 litres)
LRMC	long run marginal cost
ML	megalitre (1 million litres)
n.a.	not available
NCC	National Competition Council
NCP	National Competition Policy
NMU	non-major urban
NWC	National Water Commission
NWI	National Water Initiative
OMA	operating, maintenance and administrative
pa	per annum
PNFC	public non-financial corporation
QCA	Queensland Competition Authority

TER	tax equivalent regime
SA Water	South Australian Water Corporation
SAIPAR	South Australian Independent Pricing & Access Regulator
WACC	weighted average cost of capital
WSAA	Water Services Association of Australia
WWTP	wastewater treatment plant

1 Introduction

1.1 Purpose

This Transparency Statement documents for public scrutiny the South Australian Government's 2005-06 water and wastewater pricing decisions, the processes undertaken and the matters considered by Government in reaching those decisions, and the compliance of those decisions with Council of Australian Governments (CoAG) principles on metropolitan and regional water and wastewater pricing.

The Government published two separate Transparency Statements on the water and wastewater pricing processes for 2004-05, both of which were referred to the Essential Services Commission of South Australia (ESCOSA) for its independent review. For 2005-06, the Government is considering water and wastewater pricing concurrently and publishing a single Transparency Statement. Following a recommendation by ESCOSA, Cabinet considered an earlier draft of this Transparency Statement at the same time as the pricing decisions.

The Transparency Statement also documents the extent to which the Government's decisions comply with the 1994 CoAG water reform framework.

CoAG is the peak intergovernmental forum in Australia for monitoring and implementing policy reforms of national significance. The Government, represented on CoAG by the Premier, has been steadily implementing the 1994 water reform framework for a number of years. The CoAG water reform framework is part of a broader reform agenda, known as National Competition Policy (NCP), which is outlined in the Competition Policy Agreement (CPA) to which South Australia is a signatory.

The National Competition Council (NCC), established in 1995 by all Australian governments, has previously assessed governments' progress in implementing the NCP and made recommendations to the Federal Treasurer on NCP payments to jurisdictions.

The Government also intends to refer this Transparency Statement to ESCOSA to assist its independent inquiry into the pricing processes and the adequacy of the application of the 1994 CoAG water reform framework. This Transparency Statement will be published on the Government website www.treasury.sa.gov.au.

1.2 Description of SA Water

The South Australian Water Corporation (SA Water) is established under the *South Australian Water Corporation Act 1994* and is subject to the provisions of the *Public Corporations Act 1993*.

SA Water provides water and wastewater services to residential, retail and industrial customers throughout metropolitan and country South Australia. Most of its wastewater services are in the Adelaide metropolitan area, but they are also provided to: Stirling–Aldgate–Bridgewater–Heathfield, Gumeracha, the Iron Triangle cities,

Murray Bridge, Mannum, Mouth Gambier, Naracoorte, Millicent, Port Lincoln, Victor Harbor, Angaston, Mount Burr and Nangwarry.

SA Water manages three public–private service and maintenance contracts. The largest is a 15-year contract with United Water to manage, operate and maintain the metropolitan water and wastewater systems. Riverland Water also operates 10 water filtration plants for SA Water in regional South Australia. The final contract is for the operation of the Aldinga Wastewater Treatment Plant.

SA Water operates in accordance with its Charter (SA Water, 2003) prepared by the Treasurer and the Minister for Administrative Services following consultation with SA Water as required by the *Public Corporations Act 1993*.

SA Water also has a Customer Service Charter (SA Water, no date), which outlines the standards of service that customers might expect from SA Water.

1.3 Structure of Transparency Statement

In this Transparency Statement, Chapter 2 outlines the processes followed in setting water and wastewater prices in South Australia for 2005-06 and in preparing the Transparency Statement. It also discusses the forthcoming referral to ESCOSA.

Chapter 3 outlines the 1994 CoAG water reform framework, recent CoAG reforms and the independent assessments of South Australia's compliance with the reform agenda undertaken by the NCC and ESCOSA.

Chapters 4, 5 and 6 discuss the methodology adopted in setting water and wastewater prices in South Australia for 2005-06 and how this methodology conforms to CoAG principles.

Chapter 7 presents the Government's decisions on water and wastewater prices to be implemented in 2005-06.

Chapter 8 presents the financial details supporting the 2005-06 water and wastewater pricing decisions.

2 Processes

2.1 Introduction

This chapter outlines the processes undertaken by the Government in reaching its 2005-06 metropolitan and regional water and wastewater pricing decisions and the matters the Government considered in reaching those decisions.

2.2 Institutional framework

The 1994 CoAG Strategic Framework stated that:

> as far as possible, the roles of water resource management, standard setting and regulatory enforcement and service provision be separated institutionally (NCC, 1998, p 106).

As noted at the 1999 Tripartite Meeting[1], the NCC indicated that separate Ministers would be an appropriate form of separation, although not the only form.

In accordance with this separation principle, the Minister for Administrative Services is responsible for SA Water providing water and wastewater services. The Minister for Environment and Conservation, and the Minister for the River Murray are responsible for water resource management policy.

The Competition Principles Agreement (11 April 1995) stated:

> Prices oversight of State and Territory government business enterprises is primarily the responsibility of the State or Territory that owns the enterprise (NCC, 1998, p 15).

The Minister for Administrative Services, as the Minister responsible for SA Water, brings to Cabinet matters relating to water and wastewater price setting, including the methodology.

The Treasurer is generally responsible for considering the financial and economic implications of Government policy decisions. Accordingly, the Treasurer is responsible for budget deliberations and financial performance monitoring related to SA Water's functions. The Treasurer also refers water and wastewater pricing decisions to ESCOSA as the Minister responsible for ESCOSA, although ESCOSA retains independence in its regulatory functions.

In November 2004, the Government, through Cabinet, approved the 2005-06 metropolitan and regional water and wastewater prices.

ESCOSA conducted an independent review of price setting processes for 2004-05 water and wastewater pricing. The Government has considered ESCOSA's reports on these reviews in its 2005-06 pricing decisions and in preparing this Transparency

[1] A meeting between representatives of senior officials, Committee on Regulatory Reform, Steering Group, Australian and New Zealand Environment and Conservation Council, and NCC on 14 January 1999.

Statement. The Treasurer is to refer a similar inquiry to ESCOSA on the 2005-06 price setting processes.

Conclusion 1

> The Government considers that it has separated the role of water resource management from the role of service provision at both ministerial and agency levels, to the extent possible at this time.
>
> The Government, through the Cabinet process and in accordance with the CoAG principles, sets metropolitan and regional water and wastewater prices. These price-setting processes are independently reviewed by ESCOSA, in accordance with CoAG principles.

2.3 Process for price setting

In October 2004, the Government approved the processes to be adopted, and the timeframes involved, for setting and reviewing 2005-06 water and wastewater prices. Cabinet also considered the processes and timeframes for preparing this Transparency Statement. The document considered by Cabinet is set out in Appendix 1.

In October 2004, the Government endorsed the methodology for setting 2005-06 water and wastewater prices (Appendix 2) and noted the CoAG price setting principles, as agreed in the CoAG 1994 Strategic Framework and 2004 National Water Initiative (NWI) (Appendices 3 and 4). The CoAG principles and NCC assessments of the Government's compliance with these principles are discussed further in Chapter 3.

In November 2004 the Minister for Administrative Services brought a submission to Cabinet seeking an increase in 2005-06 metropolitan and regional water and wastewater prices, in accordance with the previously approved price setting methodology. Details of the decisions are outlined in Chapter 7.

Cabinet also considered a draft of this Transparency Statement that described:

- preparation of its water and wastewater pricing advice (Chapter 2)
- the CoAG water reform agenda (Chapter 3)
- maximum revenue outcome and its components (Chapter 4)
- minimum revenue outcome and its components (Chapter 5)
- efficient resource pricing principles (Chapter 6).

When reaching this decision, the Government, through Cabinet, considered the outcome of consultations with all relevant agencies including the Department of Treasury and Finance, Department for Environment and Heritage, Department of Water, Land and Biodiversity Conservation, Department of the Premier and Cabinet – Regulatory Impacts, Department of Families and Communities, Housing Executive

Committee, Department of Trade and Economic Development – Business impacts and the Office of Regional Affairs.

Following Cabinet's decisions on 2005-06 water and wastewater prices, Chapter 7 Water and Wastewater Pricing Decisions, and Chapter 8 Financial Analysis Relevant to the 2005-06 Pricing Decisions of the draft Transparency Statement, were finalised, as were other sections to take account of the amendments Cabinet considered appropriate to the recommendations on implementing the remaining CoAG reforms.

The Treasurer was authorised by Cabinet to approve the final *Transparency Statement Water and Wastewater Prices in Metropolitan and Regional South Australia 2005-06*, taking into account Cabinet's 2005-06 water and wastewater pricing decisions.

In accordance with the *Waterworks Act 1932,* water prices to apply to most SA Water customers in 2005-06 were gazetted in the South Australian Government Gazette on 7 December 2004. The commercial water property rate will be gazetted in June 2005, as will wastewater rates to apply to SA Water wastewater customers in 2005-06, in accordance with the *Sewerage Act 1929*.

2.4 Matters considered by Cabinet

In the 2005-06 price setting process the Government explicitly considered CoAG principles and outstanding commitments under the 1994 CoAG Strategic Framework and other agreed reforms. The CoAG principles were presented to Cabinet in a formal methodology.

In addition to achieving economically efficient outcomes the Government considered other matters that contribute to the public benefit, such as equity, social justice, environmental issues and regional development.

Conclusion 2

> The Government considers that it has achieved a balance between economic efficiency and community benefits, equity, social justice and environmental and regional policies in its 2005-06 water and wastewater pricing decisions and has complied with CoAG principles, to the extent possible at this time.
>
> The Government is responsible for achieving an appropriate balance between economic efficiency and broader community considerations in all its major policy decisions.

2.5 Transparency Statement

The Government has agreed to continue the practice of an inquiry by ESCOSA of the 2005-06 pricing process and the adequacy of the application of CoAG principles.

2.5.1 Part A

Part A of the Transparency Statement documents and provides an overview of the processes and the application of the methodology in the Government's 2005-06 pricing decisions. This document also discusses how the pricing decisions conform to CoAG principles.

The Department of Treasury and Finance prepared this Transparency Statement on behalf of the Treasurer. Officers from the Department of the Premier and Cabinet, and Department of Water, Land and Biodiversity Conservation were consulted in its preparation. SA Water was consulted on factual accuracy and completeness.

2.5.2 Referral to ESCOSA

In accordance with Section 35 of the *Essential Services Commission Act 2002,* the Treasurer is referring an inquiry to ESCOSA of the 2005-06 metropolitan and regional water and wastewater price setting processes.

As outlined in the terms of reference (Appendix 5):

(a) The Commission is to inquire into the processes undertaken in the preparation of advice to Cabinet, resulting in Cabinet making its decision on the level and structure of SA Water's water and wastewater prices in metropolitan and regional in South Australia for 2005-06, with respect to the adequacy of the application of CoAG pricing principles

(b) In undertaking this inquiry, the Commission is to consider the *Transparency Statement Metropolitan and Regional Water and Wastewater Prices in South Australia 2005-06* (Part A) dated December 2004

(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 CoAG principles was made available to Cabinet.

ESCOSA's comments will form Part B of this Transparency Statement.

3 The CoAG Water Reform Agenda

3.1 Introduction

In February 1994, CoAG endorsed the CoAG Strategic Framework for the efficient and sustainable reform of the Australian water and wastewater industry.

This chapter discusses the CoAG principles related to water and wastewater pricing and recent independent assessments of South Australia's achievement of those principles by the NCC and ESCOSA.

3.2 The CoAG Strategic Framework — 1994

The CoAG Strategic Framework, which includes broad CoAG principles and the more specific CoAG guidelines, emphasises the principles of consumption-based pricing, full cost recovery, the removal or transparency of cross-subsidies, and the full disclosure of community service obligations (CSOs), where services are provided to customers at less than full cost.

CoAG also agreed that water businesses should earn a real rate of return on the written down replacement cost of assets. The relevant clauses of the CoAG Strategic Framework are included in Appendix 3.

On 10 February 1997, the Prime Minister wrote to all Heads of Government agreeing to extend the CoAG water reform framework to include groundwater and storm/wastewater (NCC, 1998, p 110).

3.3 The CoAG guidelines

The Agriculture and Resource Management Council of Australia and New Zealand endorsed the Expert Group (1998) report and guidelines for the application of the CoAG Strategic Framework in future pricing determinations on 27 February 1998.

All Premiers and Chief Ministers subsequently endorsed the CoAG guidelines and comments[2] (Appendix 3). On the basis of the Expert Group's recommendations, the CoAG guidelines outlined the two core principles of:

- avoiding monopoly rents
- maintaining the ongoing commercial viability of the business.

The guidelines require that prices should be set to achieve a revenue target consistent with these principles and based on efficient resource pricing and business costs.

3.3.1 Avoiding monopoly rents — maximum revenue outcome

The principle of avoiding monopoly rents is consistent with the concept of full economic cost recovery. The CoAG guidelines stipulate that in order to avoid extracting monopoly rents from consumers the water business should recover:

- efficient business costs

[2] Noted at the Tripartite Meeting on 14 January 1999

- taxes
- externalities[3]
- provision for asset consumption
- the opportunity cost of capital — calculated using a weighted average cost of capital (WACC).

Therefore full economic cost recovery conceptually defines an upper bound for a water business's revenue generation — called the 'maximum revenue outcome'.

3.3.2 Ongoing commercial viability — minimum revenue outcome

The principle of maintaining the ongoing commercial viability adopted in the CoAG guidelines indicates that a water business should recover, at least:

- efficient business costs
- externalities[3]
- taxes or tax equivalent regimes (TERs)
- interest cost on debt
- dividends (if any)
- provision for future asset replacement/refurbishment (using the annuity approach).

The principle of maintaining ongoing commercial viability therefore conceptually represents the lower bound for the business's revenue requirements — called the 'minimum revenue outcome'.

3.3.3 Transparency

The CoAG guidelines also require transparency in determining prices, particularly for CSOs, contributed assets, opening value of assets, externalities (including resource management costs) and TERs.

3.4 Other principles in the 1994 CoAG Strategic Framework

A number of other CoAG principles are relevant to metropolitan and regional water and wastewater pricing decisions.

3.4.1 Performance monitoring (Clause 6)

CoAG approved the adoption of performance monitoring and international best practice as principles to be adopted to ensure efficient service delivery (ie an appropriate quality of service delivery at minimum cost). Performance monitoring is also relevant for assessing efficient business costs.

[3] The guidelines specify that only the "environmental and natural resource management costs attributable to and incurred by the water business" should be reflected in the minimum revenue outcome. No requirement is specified for the maximum revenue outcome.

3.4.2 Commercial focus (Clause 6)

CoAG agreed that, subject to each jurisdiction's particular circumstances, water businesses should adopt a commercial focus by contracting out, corporatising or privatising.

3.4.3 Public consultation and education (Clause 7)

CoAG agreed that the service provider should undertake public consultation before new initiatives are adopted. CoAG recommended the development of public education programs on water use and the benefits of reform.

3.5 National Water Initiative

At the CoAG meeting of 25 June 2004, South Australia agreed to sign the NWI, which builds on the 1994 CoAG water reform agenda. Subsequently the Government agreed that it would continue to work co-operatively at a State/Territory level to progress national water reform, although the Government has not recommitted to the NWI. Relevant clauses of the NWI are included in Appendix 4.

Conclusion 3

> As a signatory to the Competition Principles Agreement and related reforms, the Government is committed to adopting the CoAG principles as outlined in the 1994 Strategic Framework.

3.6 Independent assessments of South Australia's compliance with CoAG principles

The NCC and ESCOSA independently assess South Australia's compliance with the 1994 CoAG water reform framework. The last NCC annual assessment is the 2003 assessment. ESCOSA has undertaken two inquiries in 2004 regarding the 2004-05 water and wastewater pricing processes respectively.

3.6.1 NCC

2004 NCP assessment framework

In the 2004 NCP Assessment Framework, the NCC indicated that the Transparency Statement should show that:

> SA Water's 2004-05 water and wastewater prices satisfy the requirements of the CoAG water agreement and the pricing principles, particularly the requirements that prices are determined with reference to a revenue target for the business that is based on efficient resource and business costs, that dividends reflect commercial reality, and that there is appropriate transparency in pricing (including of any remaining cross-subsidies) (NCC, 2003b, p 29).

At the time of writing, the 2004 NCP assessment was not available.

3.6.2 ESCOSA

Inquiry into 2004-05 urban water pricing process

In accordance with its Terms of Reference, ESCOSA provided the final report to the Treasurer on 7 April 2004. ESCOSA concluded that there was:

> general compliance with the CoAG principles (for the first such process) (ESCOSA, 2004a, p 54).

ESCOSA also considered that the Transparency Statement was a significant step in complying with CoAG principles and recommended that the Transparency Statement be made available to Cabinet prior to, or concurrently with, the water pricing decision.

In addition, ESCOSA made a number of recommendations on issues that it considered should be addressed in the short and long term.

One issue required to achieve compliance with CoAG principles is an annuity estimate in the minimum revenue outcome. Others, such as the removal of contributed assets from the asset base, are matters which are considered to be good regulatory practice for the water industry.

Table 1 summarises areas where ESCOSA considers relatively minor changes are required and areas where more significant work is required (ESCOSA, 2004a, p 53).

Table 1: ESCOSA's proposals on 2004-05 urban water pricing

Issue	Further consideration required
Minor additions/changes	
Demonstration of efficient operating, maintenance and administrative costs	Further benchmarking work needs to be undertaken to demonstrate a like for like comparison and explanation of where there are differences
Depreciation amount	Ideally, more transparent calculation and disclosure of depreciation amount
Tariff structures	No further action required
Cross subsidy identification	Identification of cost differences
Tax equivalent regime	Moving away from 'total contribution' to tax payments
Significant additions/changes	
Asset value	Adjustments to asset values required for purpose of price setting, including removal of contributed assets
WACC	Determination of appropriate cost of capital for use in price setting
Annuity	Determination of an annuity amount
Externalities	Development of water resource charging that should apply to SA Water
Dividends	Demonstration of dividends being consistent with 'commercial reality'

Source: ESCOSA, 2004a, p53

Inquiry into 2004-05 wastewater pricing process

In accordance with its Terms of Reference ESCOSA provided the final 2004-05 report on wastewater to the Treasurer on 14 October 2004, which concluded that there was:

> general compliance with the CoAG principles (for the first such process) (ESCOSA, 2004b, p41).

While ESCOSA made some suggestions for improvements, relating to regulatory best practice, the Government was found to be compliant with respect to:

- efficient business costs (Section 4.1)
- asset values (Section 4.2)
- depreciation (Section 4.3)
- externalities (Section 4.5)
- return on assets (Section 4.6)
- tax equivalent regime (Section 4.8)
- efficient resource pricing (Section 4.9) (ESCOSA, 2004b, p 41).

However, ESCOSA did conclude

> a need for more significant development in respect of dividends (Section 4.7) and the development of an annuity estimate (Section 4.4). The Commission acknowledges that the Government is already addressing these areas (ESCOSA 2004b. p 41).

3.7 Conclusion

The CoAG principles on pricing of water-related services are broad and generic. The CoAG Strategic Framework stated:

> a prescriptive approach that can be universally applied is not practicable (NCC, 1998, p 111).

The methodology for setting prices in South Australia for 2005-06 is based on these broad CoAG principles, although Government has made decisions on the detailed application of these principles.

Consistent with CoAG principles, prices are determined with reference to the forecast target revenue, which lies between the maximum revenue outcome (upper bound) and the minimum revenue outcome (lower bound). In addition to considering CoAG principles, such as full cost recovery and consumption based pricing, the Government also considers broader policy objectives, such as social equity, regional development and the environment. In this way prices are established which should generate sufficient revenue to support an appropriate standard of service based on efficient business costs.

The metropolitan and regional water and wastewater price setting processes in South Australia have also been subject to independent assessments of the application of CoAG principles by the NCC and ESCOSA.

The determination of the maximum and minimum revenue outcomes and efficient resource pricing issues, including matters raised as a result of the independent assessments by the NCC and ESCOSA, are outlined in the next three chapters.

4 Maximum revenue outcome — avoiding monopoly rents

4.1 Introduction

In the 1994 CoAG Strategic Framework, water businesses were required to recover no more than the maximum revenue outcome, or upper bound, based on the principle of fully recovering economic costs, while avoiding charging consumers prices consistent with monopoly profits.

According to the CoAG guidelines the maximum revenue outcome should only recover:

- operating, maintenance and administrative (OMA) expenses
- return on assets — a real risk-adjusted return on assets
- depreciation — provision for asset consumption
- externalities
- taxes or TERs.

The same principles are applied to both the water and wastewater segments of SA Water's business as their maximum revenue outcomes consist of common components.

Each component of the maximum revenue outcomes is discussed below. Estimates of the maximum revenue outcomes for 2004-05 to 2005-06 are reported in Chapter 8, Table 18.

4.2 Operating, maintenance and administrative expenses

Both maximum and minimum revenue outcomes include estimates of OMA expenses, which the CoAG guidelines require to be based on efficient business costs. These are defined as:

> the minimum costs that would be incurred by an organisation in providing a specific service to a specific customer or group of customers (NCC, 1998, p 113).

The CoAG Strategic Framework also states that metropolitan water service providers should have a commercial focus, which jurisdictions might choose to achieve through contracting out, corporatisation or privatisation (NCC, 1998, p 107).

In its final report on the 2004-05 wastewater pricing process, ESCOSA's Statement of Compliance confirmed compliance with the CoAG principle that OMA expenses should be based on efficient business costs and suggested a range of improvements.

4.2.1 Competitive tendering

Contracting out by competitive tendering is a form of 'competition *for* the market', which in the absence of 'competition *in* the market', can achieve price and quality outcomes that are competitively efficient and low cost.

SA Water has contracted, by competitive tender, for services (eg electricity) or supplies (eg chemicals) in order to promote efficient business costs, where possible.

Approximately 71% of all SA Water's water and wastewater OMA expenditure (excluding labour costs) are subject to competitive tendering arrangements.

SA Water's most significant contract is the United Water International contract to manage Adelaide's water and wastewater systems. This 15-year contract, entered into in 1997 following a competitive tender process, has provision for pricing reviews to reset the fixed-price component every five years.

In its final report on the 2004-05 water pricing process, ESCOSA stated:

> Discussions held with SA Government during this review identified that the negotiations for the second 5-year period of the United Water International contract did require that the new UWI charges to SA Water reflect competitive prices, having regard to national and industry-specific productivity trends (ESCOSA, 2004a, p 21).

Conclusion 4

> The Government considers that SA Water's commercial focus and the significant level of competitive tendering (contracting out) for both water and wastewater services complies with CoAG principles and promotes efficient business costs.

4.2.2 Benchmarking of service performance

The CoAG Strategic Framework identified the need to develop comparisons of the performance of service providers in order to promote international best practice (NCC, 1998, p 107).

This section summarises service performance benchmarking. Section 4.2.3 summarises benchmarking of SA Water's business costs.

WSAA*facts*[4] has been suggested for benchmarking major *metropolitan* performance. Although benchmarking of service providers in metropolitan areas is useful for broad indicative purposes, there are substantial differences between metropolitan areas in:

- the type of services provided
- the size and density of the area served
- the operating environment faced by the service provider, such as
  - access to water resources
  - water quality

[4] WSAA*facts* is a national benchmarking publication of the Water Services Association of Australia (WSAA), endorsed by the NCC, to which all Australian water service providers submit cost details.

  - topography
  - soil conditions
  - effluent disposal opportunities
  - environmental standards
- data availability.

Given these issues, any conclusions based on benchmarking of service performance and costs across major metropolitan areas should be interpreted with caution.

Benchmarking by the Australian Water Association has been suggested for monitoring the performance of *non-metropolitan* providers. However, the Australian Water Association has not published a performance monitoring report for non-major urban (NMU) water utilities since 2000-01 due to the withdrawal of Commonwealth funds. Information from the NSW Water Supply and Sewerage Performance Monitoring Report and the Victorian Water Review has been adopted for comparisons in later years, where possible.

The issues outlined above that limit benchmark comparisons in metropolitan areas are also applicable to performance and cost benchmarking across regional areas. Additionally, the paucity of recent regional data means that conclusions based on regional benchmarking are tentative, pending more recent data.

Benchmarking of metropolitan water services — overview

The relative standard of system performance and water services provided by SA Water, compared with interstate service providers, can be found in Appendix 6:

- Table 24: Water Main Breaks per 100 km of Main
- Table 25: Average Duration of an Unplanned Water Supply Interruption (hr)
- Table 26: Number of Water Quality Complaints per 1,000 properties
- Table 27: Average Connect Time to a Telephone Operator
- Table 28: Infrastructure Leakage Index

SA Water has performed better than average in terms of system performance (eg water main breaks and infrastructure leakage). Customer water quality complaints have declined and are also better than average.

SA Water's performance in the average time for a telephone customer to be connected to an operator has declined in 2002-03. This was due to an increase of 15% in call numbers in 2002-03, arising partly from Government water policy initiatives such as initiatives addressing the drought, water restrictions and the introduction of the Save the River Murray Levy. Nevertheless, performance was still better than the average for all other water and wastewater service providers.

Benchmarking of metropolitan wastewater services — overview

Benchmarking of system performance and service delivery of metropolitan wastewater service providers indicates that SA Water is providing a high level of wastewater services. Environmental standards, such as the level of wastewater

treatment and the reuse of wastewater and bio-solids, are particularly high. This high level of service is illustrated by the following performance measures provided by SA Water (Appendix 6):

- Table 29: Average Wastewater Break/Choke Repair Time (hr)
- Table 30: Percent of Wastewater Treated to a Tertiary Level
- Table 31: Percent of Water Recycled
- Table 32: Percent of Bio-solids Reused

Other benchmarking examples, provided by SA Water, are (Appendix 6):

- Table 33: Number of Wastewater Reticulation Main Breaks and Chokes per 1,000 Properties
- Table 34: Number of Property Connection Sewer Breaks & Chokes per 1,000 Properties
- Table 35: Number of Wastewater Overflows per 100 km
- Table 36: Odour Complaints per 1,000 Properties.

SA Water's performance in terms of *main* breaks and chokes per 1000 properties, wastewater overflows per 100 kilometres and odour complaints was better than the average of all WSAA companies.

The Transparency Statement on 2004-05 wastewater pricing foreshadowed a review of SA Water's performance in relation to *connection* sewer breaks and chokes per 1000 properties. The available information suggests that SA Water is underperforming (although not all jurisdictions report this data). Preliminary results of the review have revealed a number of technical and historical reasons for the apparently high number of property *connection* breaks and chokes, including:

- age of system
- the type of material used in construction
- siting and location of system
- preventative maintenance of mains only
- pipe replacement.

Previous records indicate that the likelihood of a property connection break or choke is less than 4% and SA Water's good 'average repair time' performance would appear to offset any customer dissatisfaction with the level of *connection* sewer breaks and chokes.

Benchmarking of regional water services — overview

Benchmarking of SA Water's provision of water services in three regional areas of South Australia (Outer Adelaide, Whyalla, Mount Gambier) is based on data from the NMU report and performance benchmarking from NSW and Victoria. However, given the difficulties in benchmark comparisons and the paucity of relevant and recent data at the regional level, conclusions based on benchmark comparisons are tentative, pending more recent data.

The following indicators suggest, to the extent possible, the comparable system performance and standard of water services provided by SA Water in regional systems (Appendix 7):

- Table 37: Average Duration of Unplanned Interruption (hr)
- Table 38: Number of Water Main Breaks per 100 km of Main
- Table 39: Average Customer Outage Time (Unplanned) per Property (mins)
- Table 40: Customer Interruptions (Unplanned) per 1,000 Properties.

In these areas SA Water would appear to have been performing at a standard better than the Victorian regional average, except for the average duration of unplanned interruptions in 2000-01. In Outer Adelaide and Whyalla the average duration of unplanned interruptions would appear to be longer than the Victorian regional average but generally similar to the other selected providers.

Benchmarking of regional wastewater services — overview

Benchmarking of SA Water's provision of wastewater services in three regional areas of South Australia (Outer Adelaide, Whyalla, Mt Gambier) is based on data from the NMU report and performance benchmarking from NSW and Victoria. Conclusions based on benchmark comparisons are tentative, pending more recent data.

The following indicators suggest, to the extent possible, the comparable system performance and standard of wastewater services provided by SA Water in regional systems (Appendix 7):

- Table 41: Average Duration of Unplanned Interruption (hr)
- Table 42: Number of Sewer Chokes per 100 km of Main
- Table 43: Number of Sewage Overflows per 1,000 Properties
- Table 44: Number of Sewage Overflows per 100 km of Main
- Table 45: Average Customer Outage Time (Unplanned) per Property (mins)
- Table 46: Number of Odour Complaints per 1,000 Properties.

In terms of the number of sewer chokes per 100 kilometres of main, SA Water would appear to have been performing at a standard better than the NSW statewide average and the weighted average of all NMUs in 2000-01. However, the number of sewage overflows in Mt Gambier and Outer Adelaide would appear to be higher than the weighted average of all NMUs.

SA Water's level of customer service in terms of the average duration of an unplanned interruption in hours would appear to be equivalent to, or better than, the NSW statewide average in 2000-01.

4.2.3 Benchmarking of business costs

Introduction

In its final report on wastewater pricing, ESCOSA's Statement of Compliance stated that the Government is compliant in the area of efficient business costs (ESCOSA, 2004b, p 41). Nevertheless, ESCOSA indicated that:

> the Transparency Statement should … include information on costs and performance for both the Adelaide Systems (WSAAfacts) and the Country Systems (ESCOSA, 2004b, p 19-20).

Benchmarking of metropolitan water and wastewater business costs - overview

Information on SA Water's costs for Adelaide's water and wastewater systems with comparable service providers, based on WSAA*facts*, is detailed in Appendix 8.

The real costs of providing metropolitan water services indicates that SA Water's total cost per property and operating cost[5] are below the average of all 27 WSAA companies reported (Table 47 and Table 48). SA Water's real operating cost per property rose to $173.74 in 2002-03, although unpublished data indicates that it declined by 7.0% real in 2003-04. This has been attributed to a decline in pumping and associated electricity costs.

The real cost of providing metropolitan wastewater services indicates that SA Water's total cost per property and operating cost are below the average of all 27 WSAA companies reported (Table 49 and Table 50). Although SA Water's real total cost of providing wastewater services has declined slightly, operating cost has increased since 1998-99. This is mainly attributed to improving environmental standards.

Benchmarking of regional water and wastewater business costs- overview

Benchmarking of SA Water's provision of water services in three regional areas of South Australia (Outer Adelaide, Whyalla, Mount Gambier) using data to 2000-01 from the NMU report and performance benchmarking from NSW and Victoria is detailed in Appendix 9. This cost data is subject to the same limitations as the benchmarking of regional service performance (4.2.2) and conclusions based on benchmark comparisons are tentative, pending more recent data..

The benchmarking suggests, to the extent possible, that the operating cost per property (Table 51) and operating cost per ML (Table 52) of providing water services in Mount Gambier was the lowest of all water service providers in 2000-01 and has continued to improve. Outer Adelaide costs would appear to be comparable to other service providers, although the operating cost per ML increased sharply in 2003-04. Whyalla has quite high operating costs, mainly due to the significant cost of pumping water from the River Murray and the associated costs of maintaining the pipelines.

With regard to wastewater services, the benchmarking suggests, to the extent possible, that in 2000-01 Mt Gambier and Whyalla had the lowest operating cost per property (Table 53). While Mt Gambier has continued to improve, Whyalla has shown a

[5] Operating cost is defined in WSAA*facts* as including: charges for bulk treatment/transfer of wastewater; salaries and wages and associated overheads; materials, chemicals, energy; contracts; accommodation; and all other normal operating costs.

significant increase in 2003-04. The operating cost per property for Outer Adelaide would appear to be significantly higher than other regions, due to geographic, demographic and technical factors, but is below the Victorian average. These factors also contribute to a higher operating cost per ML (Table 54) for providing wastewater services to Outer Adelaide.

4.2.4 Key Cost Drivers of SA Water

Introduction

In its final report on wastewater pricing, ESCOSA's Statement of Compliance stated that the Government is compliant in the area of efficient business costs (ESCOSA, 2004b, p 41). Nevertheless, ESCOSA indicated that:

> the Transparency Statement should …. further develop the trend analysis of key cost drivers, in the short to medium term (ESCOSA, 2004b, p 19-20).

Key cost drivers of metropolitan water supply services

A number of key cost drivers influence the level of SA Water's costs of providing water and wastewater services relative to other providers. There are also trends and variability in these costs over time. This section, based on information provided by SA Water, analyses the trends in SA Water's real total costs and operating costs and the key drivers of variability around the trends.

The key drivers underlying the level of SA Water's system costs are:

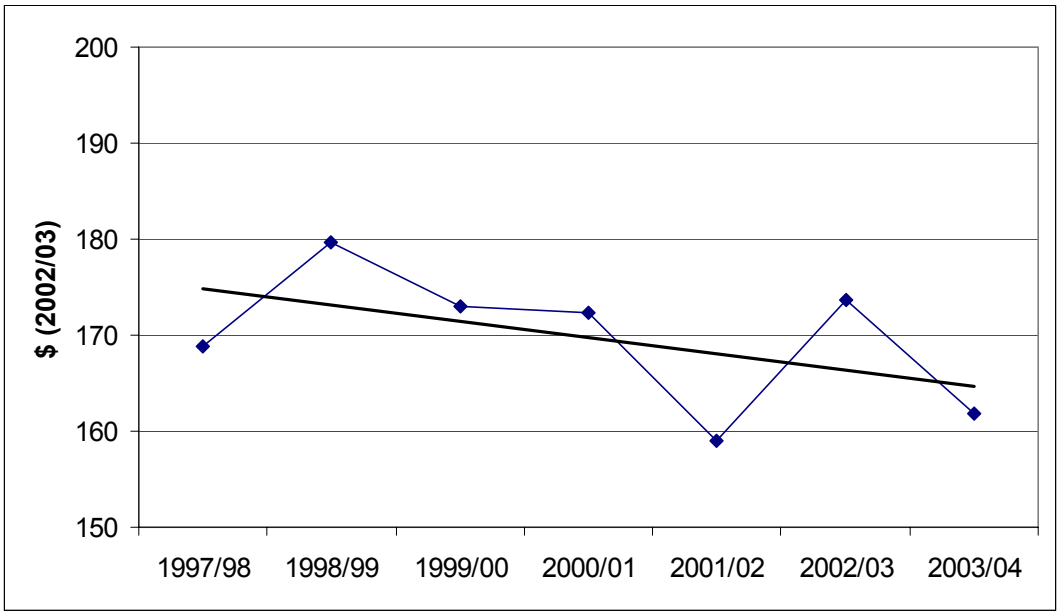
- access to water services
- water quality
- topography
- environmental and customer service standards
- climatic conditions
- soil conditions.

Access to water resources, and the quality of those resources, affects the network of pipes required to transport water and the treatment facilities necessary to achieve the desired quality of water. Approximately 40% of Adelaide's water is sourced from the River Murray in average rainfall years and up to 90% in dry years. The quality of raw water is also generally poor and requires considerable treatment. These factors result in a considerable network of pipes, with the capacity to service Adelaide under the driest conditions, and substantial treatment facilities.

Topography also affects operating costs by affecting the ability to utilise gravity to transport water to reticulation systems. South Australian systems are all subject to extensive pumping and associated electricity costs because they cannot use gravity.

More stringent environmental and customer service standards may also impose additional operating costs on the water service provider (eg constraints on the use of available water resources or faster customer response times).

Figure 1 depicts SA Water's real metropolitan water operating cost per property (in 2002-03 dollars), based on WSAA*facts* data, for the period 1997-98 to 2002-03 and SA Water for 2003-04.



Source: WSSAfacts and SA Water

Figure 1: SA Water's metropolitan water operating cost per property (in 2002-03 dollars)

Figure 1 indicates a slightly declining trend in real operating cost per property, although these costs vary around that trend from year to year.

The variability around the trend is mainly related to the variations in major pumping costs (particularly electricity) as a result of changes in climatic conditions. The effect of climatic conditions on water supplied to Adelaide and the quantities of water pumped from the River Murray are outlined in Table 2.

Table 2: Metropolitan Adelaide water supply statistics

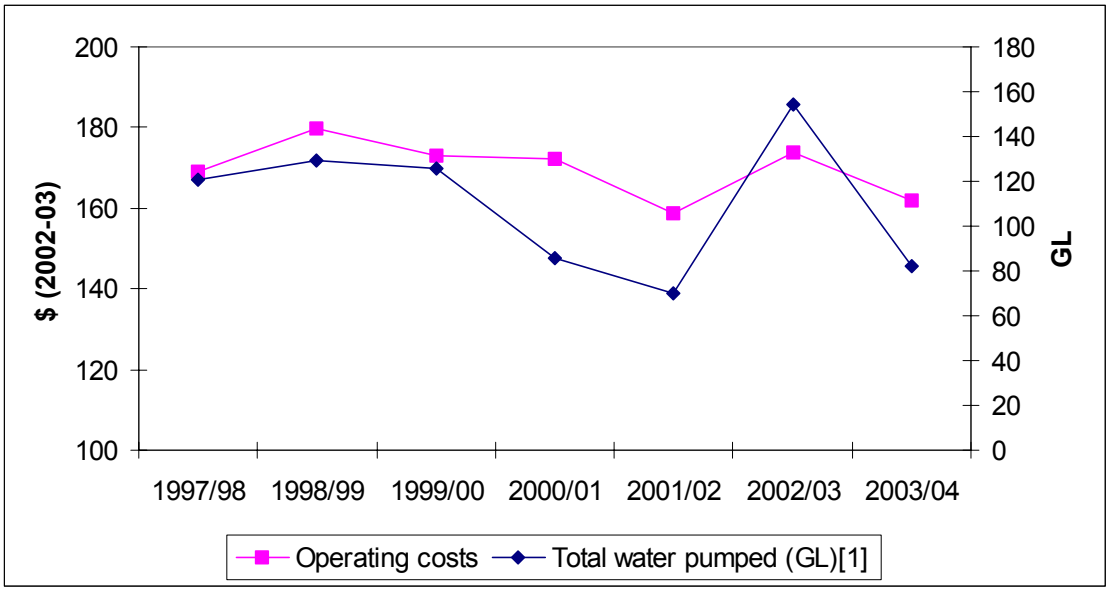
	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Average maximum temperature (°C)#	22	22	22	23	21	23	23*
Total annual rainfall#	579	578	677	594	591	530	608*
Total water supplied (GL)*	174	185	181	194	173	178	166
Total water pumped (GL)[6]*	121	129	126	86	70	154	82

Source: # WSAAfacts

** SA Water*

Pumping water from the River Murray incurs substantial costs and is dependent on the quantity of water demanded and the natural annual intakes to the Adelaide Hills catchments, which offsets the need for pumping. Pumping costs in South Australia are also higher than other states because gravity cannot be used in water transportation.

Figure 2 illustrates that one of the key cost drivers of the variability in SA Water's real operating costs per property (particularly electricity) in Adelaide is total water pumped from the River Murray.



Source: WSAAfacts and SA Water

Figure 2: Comparison of SA Water's metropolitan operating cost per property and total water pumped from the River Murray (in 2002-03 dollars)

[6] Figures are for pumping to the Adelaide storages from the Mannum–Adelaide and Murray Bridge–Onkaparinga pipelines and provide for off-takes to non-metropolitan customers.

In 2001-02 only 70 GL of water was pumped from the River Murray and operating cost per property fell significantly below the trend. In 2002-03, a drought year with the lowest rainfall, total water pumped more than doubled and, consequently, real operating cost per property increased substantially. The costs fell significantly in 2003-04, when significantly less water was pumped from the River Murray.

Key cost drivers of metropolitan wastewater services

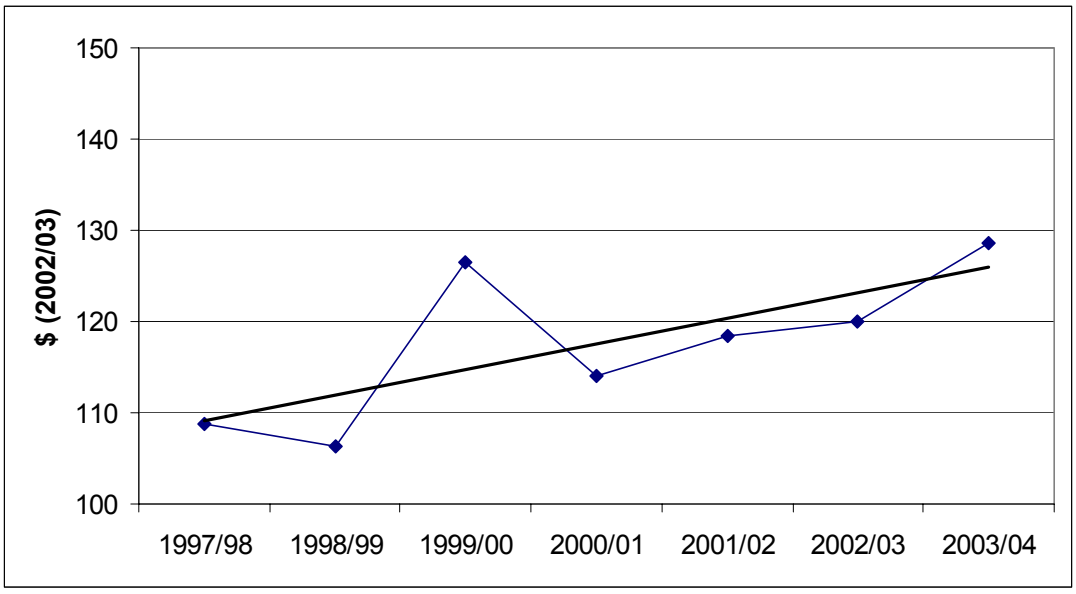
Some of the key cost drivers underlying the level of costs of providing metropolitan wastewater systems are:

- effluent disposal opportunities
- topography
- soil conditions and groundwater levels
- age and condition of the system
- environmental and customer service standards.

Topography and effluent disposal opportunities vary considerably from system to system and affect the pumping and treatment costs required. Soil conditions and the age and condition of the system significantly affect maintenance or augmentation costs. For example, most regions of South Australia, including Adelaide, are characterised by clay soils, which increases costs significantly.

Environmental and customer service standards also significantly affect the cost of providing wastewater services (eg increasing the level of treatment or recycling of wastewater, or improving maintenance of infrastructure or customer response times).

Figure 3 depicts SA Water's real operating cost per property, based on WSAA*facts* data, for the period 1997-98 to 2002-03 and SA Water for 2003-04, and their upward trend over the period.



Source: WSAAfacts and SA Water

Figure 3: SA Water's metropolitan wastewater operating cost per property (in 2002-03 dollars)

The variability of costs around the trend has been influenced by some one-off factors, such as:

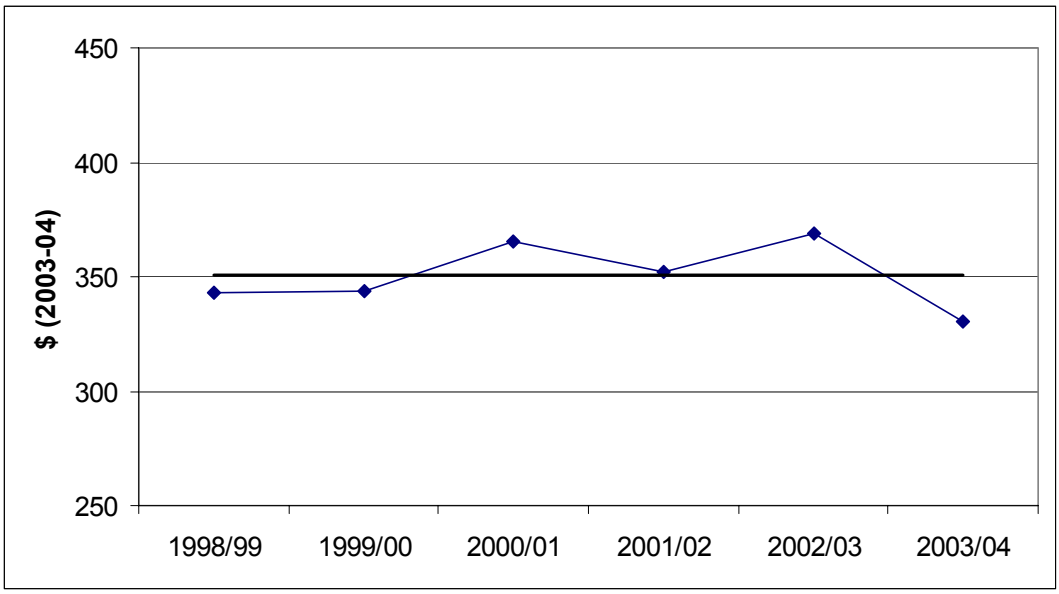
- costs of conducting a major efficiency review across the Corporation, the Value Based Management project, in 1999-2000
- a significant increase in wastewater assets in 2001-02 (Water Services Association of Australia, 2003, p 93).

A key cost driver of the upward trend is reported to be increased environmental standards, specifically, the degree to which wastewater is required to be treated. Tertiary treatment, the most complex and sophisticated treatment level, is the most expensive and the percentage of wastewater treated to a tertiary level has risen from 54% in 2001-02 to 81% in 2002-03 (Appendix 6, Table 30).

Cost drivers of regional water services (all regional areas)

SA Water has analysed regional water operating costs before tax, interest and depreciation to determine underlying trends.

Figure 4 indicates that real operating cost per property for SA Water's regional water systems declined from $343 in 1998-99 to $331 per property in 2003-04.



Source: SA Water

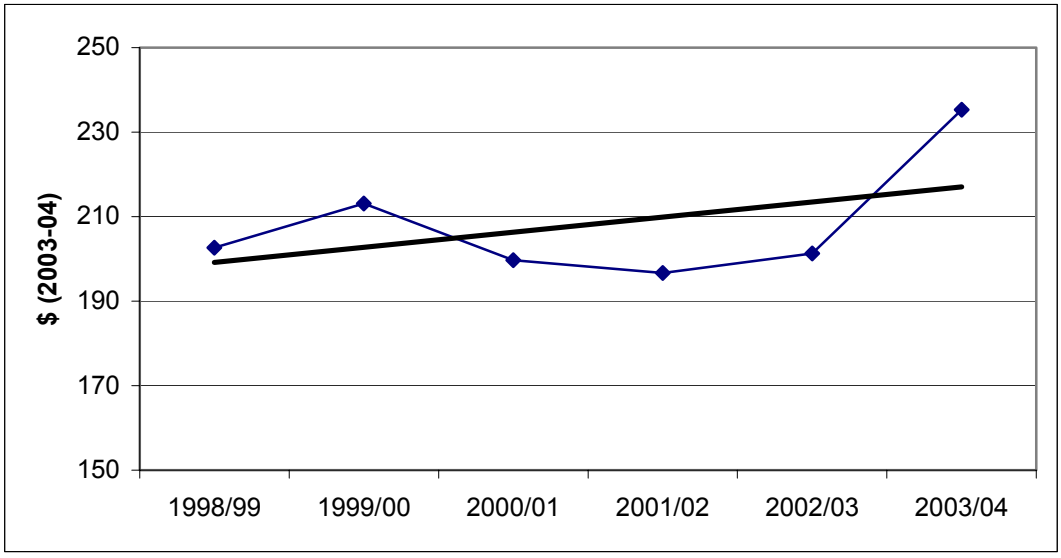
Figure 4: SA Water's regional water operating cost per property (in 2003-04 dollars)

Although the trend in real operating cost per property in regional areas has remained stable, these costs reached peaks in 2000-01 (with increased consumption and increased pumping from the River Murray) and 2002-03 (with increased consumption and higher electricity costs).

Key cost drivers of regional wastewater services (all regional areas)

SA Water also analysed regional wastewater operating costs before tax, interest and depreciation to determine underlying trends.

Figure 5 depicts regional wastewater operating costs per property in 2003-04 dollars.



Source: SA Water

Figure 5: SA Water's regional wastewater operating cost per property (in 2003-04 dollars)

Figure 5 illustrates an increasing trend overall in wastewater operating cost per property in regional areas although costs were decreasing from 1999-2000 to 2001-02. The increase of $2.2 million in 2003-04 represents a real increase of 18.5% over 2002-03 costs. The recent increase reflects improvements to wastewater treatment in the Spencer and Border regions and a reallocation of some costs of the Happy Valley workshops from metropolitan to regional, which more accurately reflects cost activities.

Conclusion 5

Benchmarking and cost comparisons of water utilities interstate and intrastate are limited by different markets, different regional conditions, different operating environments and data availability problems. Thus, conclusions based on benchmarking of service performance and costs for the metropolitan area should be interpreted with caution. Additionally, recognising the paucity of recent regional data, conclusions based on benchmarking of service performance and costs for regional areas are tentative, pending more recent data.

Taking this into account, the Government considers that SA Water has generally achieved efficient business costs for water and wastewater services and therefore complies with CoAG principles.

The Government considers that the provision of this additional information has met ESCOSA's proposal.

4.3 Return on assets

The CoAG Strategic Framework requires that a water business earn a real risk-adjusted return on the written down replacement cost of assets using a WACC. The value of the asset base and the WACC are key parameters in determining the return on assets that, in turn, forms a significant proportion of the maximum revenue outcome.

The issues that have arisen in applying this CoAG principle are:

- valuation of assets
- the rolling forward of the asset base
- contributed assets
- WACC.

In its final report on the 2004-05 wastewater pricing process, ESCOSA's Statement of Compliance confirmed that the Government is compliant in the areas of return on assets, asset values and contributed assets, and suggested a number of improvements (ESCOSA, 2004b, p 41).

4.3.1 Valuation of assets

The CoAG guidelines require:

> The deprival value methodology should be used for asset valuation, unless a specific circumstance justifies another method (NCC, 1998, p 112).

The South Australia Government Accounting Policy Statement, APS 3, requires the fair value basis to be applied to the measurement of non-current assets as per

Australian Accounting Standard AASB 1041 (July 2001) Revaluation of Non-Current Assets. Additionally, according to APS 3:

> the valuation result derived under fair value will result in no material practical difference from the result obtained under deprival value (generally both will be valued on a written-down (depreciated) current cost basis) (APS 3, July 2001, Clause 6).

In its final report on the 2004-05 water pricing process, ESCOSA stated:

> SA Water has employed an approach consistent with the requirements of the CoAG guidelines and has had the outcomes independently verified through (in part) comparison with outcomes for a peer water utility (Hunter Water Corporation) (ESCOSA, 2004a, p 16).

This was confirmed by ESCOSA in its final report on the 2004-05 wastewater pricing process (ESCOSA, 2004b, p 21).

The value of SA Water's asset base is reported in Chapter 8, Table 16 and Table 17.

Conclusion 6

> The Government considers that the valuation of assets based on the fair value method complies with CoAG principles. This has been confirmed by ESCOSA.

4.3.2 Rolling forward of the asset base

The CoAG guidelines do not include detailed specifications on the rolling forward of the asset base, relating to SA Water's infrastructure assets, plant and equipment.

The rolling forward of the asset base is consistent with the method used in the Transparency Statement on 2004-05 urban wastewater pricing. It applies zero inflation to additional capital expenditure and uses the average real asset value to determine the asset base.

The rolling forward of the asset base is outlined in Chapter 8, Table 16, and the average real asset base in Chapter 8, Table 17.

4.3.3 Contributed assets

Contributed assets comprise customer contributions, for provision of infrastructure such as new mains, and subdividers contributions.

The CoAG guidelines require that the treatment of contributed assets is transparent when determining prices.

For its 2004-05 water and wastewater pricing decisions, the Government adopted the approach of recognising contributions as an asset (at fair value) and revenue when the entity gains control of the contribution, which complies with professional Australian

Accounting Standards (ie AASB Urgent Issues Group, 1996, p 5). Therefore, contributed assets were included in the asset base and, to ensure no double counting, the revenue associated with these contributed assets was also included in the Forecast Target Revenue.

In its final report on the 2004-05 wastewater pricing process, ESCOSA stated that transparent reporting of the treatment of contributed assets is compliant with CoAG principles (ESCOSA, 2004b, p 22).

Nevertheless, ESCOSA's opinion is that contributed assets should be:

> valued (or a best estimate is determined), and removed from pricing considerations (or equivalent treatment, if available). This may require SA Water to maintain a separate asset register for pricing purposes and to estimate past contributions (ESCOSA, 2004b, p 22).

Although compliant with CoAG principles, the Government has reviewed its policy in recognition of current regulatory practices.

ESCOSA's Issues Paper for the 2004-05 wastewater inquiry highlighted two methods favoured by regulators:

- removing contributed assets from the asset base
- including contributed assets in the asset base and providing some offsetting mechanism to account for the contribution as favoured by the Queensland Competition Authority (ESCOSA, 2004c, p 7).

The removal of contributed assets from the asset base is either legislated, or adopted, by most regulators throughout Australia. The advantages of this approach are that it:

- is conceptually simple to explain
- provides a smooth price path.

However, this approach has disadvantages. Principally it requires:

- the Government to estimate the current value of contributed assets
- SA Water to track all future contributed assets, and possibly maintain a separate asset register, even where assets have only been partially funded by capital contributions.

Given the broader acceptance by Australian regulators of removing contributed assets from the asset base, the Government has agreed to remove:

- contributed assets from SA Water's regulatory asset base
- the associated depreciation from the maximum revenue outcome
- annual capital contributions from the forecast target revenue.

An important issue is to determine the value of contributed assets to be excluded from the initial regulatory asset value, as at 1 July 2004.

The assets held by the former Engineering and Water Supply Department (EWS) were transferred to SA Water upon corporatisation on 1 July 1995. Before then, the information held on contributed assets was very limited. Further, once SA Water recognised the contributed asset, there was no need to separately track contributed assets for other purposes. As a result, there is some subjectivity in estimating the value of contributed assets. SA Water has been able to determine the length of mains provided by subdividers since corporatisation, although similar information is not available for customer contributions.

There is no sound information on which an estimate of contributed assets prior to corporatisation can be based. The Government, therefore, believes that the most appropriate course of action is to value contributed assets from the date of corporatisation.

The Government has estimated the value of contributed assets provided to SA Water as $222 million as at 1 July 2004. To derive this estimate the Government reviewed SA Water's documents to determine the length of mains provided by subdividers and applied current construction rates to determine the value of contributed assets provided by subdividers, adjusted for depreciation. For customer contributions, only financial documentation was available. Therefore, the estimate of customer contributions is based on the value of contributions provided to SA Water and amended for depreciation and inflation.

Conclusion 7

The treatment adopted in the 2004-05 pricing decisions for contributed assets, being transparently reported and based on professional accounting standards, complied with CoAG principles. This has been confirmed by ESCOSA.

Nevertheless, the Government considers that the establishment of a best estimate of contributed assets from corporatisation and their removal from SA Water's asset base for pricing considerations is consistent with current regulatory practices.

The Government considers that its new treatment of contributed assets fully satisfies ESCOSA's proposals.

4.3.4 WACC

CoAG principles require that the maximum revenue outcome should include the opportunity cost of capital, based on a WACC. The WACC is the average cost of debt and equity, weighted according to the relevant proportion of the company's capital structure, and incorporates an allowance for market risk.

The return on assets in the maximum revenue outcomes is determined by applying a WACC to the estimated asset base, as rolled forward, after the removal of estimated contributed assets.

In the 2004-05 water and wastewater pricing decisions, a WACC range of 6–8% pre-tax real was adopted on the basis of an earlier consultant's report and benchmarking of WACCs adopted by regulators for comparable Australian utilities.

In its final report on the 2004-05 water pricing process, ESCOSA stated:

> The Commission believes that, although compliant with the CoAG pricing principles requirement to include an opportunity cost, the Transparency Statement does not provide sufficient information on WACC. The Commission considers that in future Transparency Statements, an appropriate WACC should be determined for setting maximum revenue, or at the very least, a much smaller range should be provided for the Cabinet to make an informed decision on water pricing (ESCOSA, 2004a, p 36).

ESCOSA indicated that the appropriate WACC should be based on an efficient supplier's benchmark, or the same conditions applying to a comparable, efficient water utility. Further ESCOSA considered that details of the input variables upon which the WACC was based should be provided in the Transparency Statement (ESCOSA, 2004a, p 36).

In the Government's response to ESCOSA's water inquiry, the Government agreed that:

> It is preferable to adopt a narrower range for the WACC to be used to determine SA Water's water and wastewater prices, based on an efficient supplier's benchmark.
>
> The Government intends to develop an appropriate WACC for the purpose of establishing water and wastewater pricing arrangements.
>
> It is intended that this would be finalised for inclusion, to the extent possible, in the 2005-06 Urban Water and Wastewater pricing decision (South Australian Government, 2004c, p 9).

ESCOSA confirmed its conclusion on WACC in the 2004-05 wastewater inquiry, in response to which the Government confirmed its intention to develop an appropriate WACC for inclusion, to the extent possible, in the 2005-06 water and wastewater pricing decisions.

An estimated range of WACC was developed by evaluating individual input values against relevant independent regulatory decisions, and the research and analysis upon which those decisions were based. The views of independent regulators on appropriate input values were considered to represent efficient suppliers' benchmarks. A discussion of the method and individual input variables, outlined in Table 3, is included in Appendix 10.

Table 3: Values of WACC input parameters

Assumptions	Low	High
Market risk premium (Rm-Rf, MRP)	5%	6%
Risk free interest rate Rf (real)		
Risk free interest rate Rf (nominal)	5.95%	5.95%
Corporate tax rate	30%	30%
Gamma	0.5	0.5
Inflation forecast (I)	2.5%	2.5%
Debt margin (DM)	1%	1.2%
Allowance for debt raising costs	-	-
Cost of debt (pre-tax nominal) (Kd)	6.95%	7.15%
Cost of debt (post-tax nominal) (Kd (1-T))	4.87%	5.01%
Debt: Entity value (D/V)	50%	60%
Asset beta (Ba)	0.40	0.45
Debt beta (Bd)	0.2	0.1
Equity beta (Be)	0.60	0.98
Cost of equity (post-tax nominal) (Ke)	8.95%	11.80%
WACC results		
Nominal post-tax	6.12%	6.89%
Real pre-tax	6.09%	7.16%

The Government adopted a narrower range of pre-tax real WACC for its 2005-06 water and wastewater pricing decisions of 6–7% (rounded from 6.09–7.16% above) on the basis of these input values. It was considered that selecting a single WACC, and/or figures specified more precisely than to the nearest 0.5 percentage point, was not appropriate given the estimation difficulties involved in each input value into the WACC calculation. New South Wales' IPART and the United Kingdom's Office of Water Services (OFWAT) have also adopted a WACC range, rather than a single WACC.

The WACC range adopted is within the range of recent regulatory views on an appropriate pre-tax real WACC for comparable Australian utilities (Table 4).

Table 4: Extract of relevant regulatory decisions

Regulatory decision	Pre-tax real WACC (%)
Water	
ICRC (ACT) – Water – 2004	7.0
GPOC (Tas) – Water – 2004	7.0
IPART – Sydney Water – 2003	5.2–6.7
Electricity and gas	
ACCC – Murraylink conversion – 2004	6.7
IPART – Electricity – 2004	6.1–7.5
ESCOSA (SA) –Electricity (draft) – 2004	6.81
ACCC – Electranet – 2003	7.17
SAIPAR (SA) – Gas – 2001	7.6
EPO (SA) – 1999 – ETSA Utilities	7.79–8.74

Conclusion 8

> The Government considers that the inclusion in the maximum revenue outcome of an opportunity cost of capital based on the range of pre-tax real WACC of 6-7%, estimated using benchmarking with efficient water utilities, complies with CoAG principles.

4.4 Depreciation — provision for asset consumption

The CoAG guidelines require that the maximum revenue outcome includes provision for asset consumption (or depreciation).

In its final report on the 2004-05 wastewater pricing process, ESCOSA found that:

> The Transparency Statement is consistent with CoAG principles in its treatment of depreciation (ESCOSA, 2004b, p 24).

In the 2005-06 water and wastewater pricing process, SA Water has estimated depreciation on assets in the maximum revenue outcome using the straight-line method, based on the useful lives of the asset. This is consistent with previous pricing decisions.

The method of calculation is consistent with APS 7: Depreciation of Non-Current Assets and AASB 1021: Depreciation. Infrastructure, buildings, plant and equipment and other assets are depreciated using the straight-line method over their estimated useful lives of 5–160 years. The useful lives of assets are reviewed annually and are outlined in Table 5.

Table 5: Useful lives of SA Water's assets

Asset	Years
Water and sewer assets	7–160
Water and sewer leased assets	40–50
Buildings	50
Other	5–50
Plant and equipment	5–15

Source: SA Water, 2004

The method of depreciation considers the underlying nature of the assets and their expected use in SA Water operations. Work in progress is not depreciated until assets are completed and have been commissioned for operation.

The depreciation amount is reported in Chapter 8, Table 18.

Conclusion 9

> The Government considers that inclusion in the maximum revenue outcome of estimated straight-line depreciation complies with CoAG principles. This has been confirmed by ESCOSA.

4.5 Externalities

4.5.1 Introduction

The CoAG guidelines require that externalities be reflected in both the maximum revenue outcome and minimum revenue outcome, and be transparently reported as part of the price setting process. In particular, the guidelines specify that only the "environmental and natural resource management costs attributable to and incurred by the water business" should be reflected in the minimum revenue outcome. No requirement is specified for the maximum revenue outcome.

In its 2004 NCP water reform assessment framework, the NCC indicated that one area of consideration would be:

> The transparent reporting of externalities (defined by CoAG for water pricing as the environmental and natural resource management costs attributable to and incurred by water businesses) (NCC, 2003b, p 11).

4.5.2 Water

In the 2004-05 water pricing decision the maximum revenue outcomes included externalities internalised through explicit charges to SA Water, such as payments by SA Water to the catchment water management boards. The Government also imposed ongoing physical water restrictions on consumers in order to reduce potential externalities resulting from overuse of the water resource.

In its inquiry into the 2004-05 water pricing process ESCOSA stated:

> The inclusion of externalities costs that are "both attributable to and incurred by" SA Water in the Transparency Statement is compliant with the CoAG Principles (ESCOSA, 2004a, p 32).

Nevertheless, ESCOSA considered that:

> DWLBC charges be identified in terms of key catchments, and that the charges related to the supply of water to regions attracting CSOs be differentiated (ESCOSA, 2004a, p 32).

The Government responded to ESCOSA as follows:

> The Government is currently developing water resource management policies, which may affect the costs associated with provision of water and wastewater services.
>
> This is being undertaken separately from the 2005-06 urban water and wastewater pricing process. The outcomes, in so far as they affect future urban water and wastewater pricing decisions, would be addressed in future Transparency Statements.
>
> However, the Government will report on the Policy outcomes, including implications for all relevant beneficiaries (South Australian Government, 2004c, p 11).

In contrast to its earlier statement on the recovery of externalities attributable to and incurred by the water service provider, recent correspondence from the NCC states:

> For upper bound pricing, this definition is not appropriate or intended. As the report of the expert group (on which the CoAG pricing principles are based) makes clear, upper bound pricing requires setting prices to achieve full economic cost recovery, to ensure resources are allocated efficiently and the correct signals given on investment and consumption (NCC, 2004b).
>
> The upper bound cost recovery price therefore should incorporate all costs associated with capturing, storing and using water, including relevant costs incurred by other than the service provider (NCC, 2004b).

These views are not reflected in the CoAG guidelines for determining the upper bound, which were developed subsequent to the Expert Group report.

Methods of measuring, apportioning and charging for all water planning and management costs, and unpriced impacts relating to providing urban water services to individual beneficiaries, is complex and the subject of rigorous and ongoing theoretical, methodological and empirical debate throughout Australia.

The Government has agreed to work co-operatively at a State and Territory level towards adopting consistent approaches to pricing and attributing of water planning and management costs by the end of 2006.

The current South Australian approach is that water resource management is the responsibility of the Department of Water, Land and Biodiversity Conservation (except for SA Water retaining some responsibility for administering policy on water conservation by its customers). As the Department of Water, Land and Biodiversity Conservation is funded from consolidated revenue, water resource management costs are currently borne by the South Australian community.

Until a consistent Australia-wide approach is resolved, it would be pre-emptive at this stage to include all or part of the Department of Water, Land and Biodiversity Conservation costs in the upper bound. Additionally, the Department of Water, Land and Biodiversity Conservation costs include other programs relating to agricultural and community use.

The Government has also introduced a Save the River Murray Levy on SA Water customers, which aims to contribute to restoring the health of the River Murray over time. The levy, for 2004-05 of $30.60 per residential customer, excluding pensioners, and $137 .80 per commercial customer, is collected by SA Water on behalf of the Government. The proceeds of this levy are not included in SA Water's forecast target revenue for pricing purposes. The funding for addressing water over allocation and achieving environmental objectives in the Murray-Darling Basin is the subject of an intergovernmental agreement between the Commonwealth and the governments of NSW, Victoria, South Australia and the Australian Capital Territory.

With regard to including environmental signals in the price of water when setting the top-tier water usage charge, the Government considered the estimated long run marginal cost (LRMC). The estimate of LRMC includes an allowance per kilolitre (kL) of water consumed representing the scarcity value of water, estimated on the basis of a CSIRO study of the value of water resources under optimal, healthy conditions.

The inclusion of an estimate of these externalities in LRMC sends an appropriate economic signal to consumers at the margin about the impacts on the environment of additional water consumption, although these costs are not included in the upper revenue bound (maximum revenue outcome). Consequently, the supply charge to customers has been reduced relative to their total usage charge. As discussed above, environmental programs, such as the Save the River Murray program and salinity mitigation, are funded by specific levies or general revenue.

SA Water's pricing structure and LRMC are discussed further in Chapter 6.

Conclusion 10

> The Government considers that the inclusion in the estimated maximum revenue outcome of all environmental management costs attributable to and incurred by SA Water in the provision of water services is consistent with CoAG principles.

4.5.3 Wastewater

In its inquiry into the 2004-05 wastewater pricing process, ESCOSA indicated that:

> The inclusion of externalities costs that are "both attributable to and incurred by" SA Water in the Transparency Statement is compliant with the CoAG principles (ESCOSA, 2004b, p 27).

Nevertheless ESCOSA also considered that:

> Further enhancement to the information included in the Transparency Statement should be made. In particular, Cabinet should be provided with more specific information about the expected extent of future EEL funded works (ESCOSA, 2004b, p 27).

In the response to ESCOSA's wastewater inquiry, the Government agreed that it would report on the Environmental Enhancement Levy (EEL), including details of the funded works, to the extent possible.

The independent Environment Protection Authority (EPA) is responsible for setting the environmental standards SA Water is required to meet for processing and disposing of wastewater.

SA Water's costs in meeting all environmental requirements are difficult to separately identify. Nevertheless, capital and operating costs related to the EEL are identified in Table 6. Additionally, payments by SA Water to the EPA as licence fees in 2005-06 would be $1.5 million. This fee is applied as a fixed charge.

The EEL on sewer rates was introduced in 1990 to accelerate the implementation of environmental improvement programs (EIPs) to minimise environmental impacts and meet legislative requirements. The levy, which is effectively 8.6% of total wastewater rate revenue, will raise $21.2 million in 2005-06.

Table 6 reveals a shortfall between expenditures and levy revenue. It is anticipated that the breakeven point for projects funded by the levy will be in 2014.

Table 6: Environmental works: revenue and expenditure (June 2004 dollars)

	July 1990–June 2003 ($ million)	July 2003–June 2004 ($ million)
EEL revenue	228.03	22.01
Cost of works capital and operating	274.67	71.81
Surplus (shortfall)	(46.63)	(49.8)

Projects so far funded by the EEL, in accordance with Cabinet approved goals, are listed in Table 7.

Table 7: Projects funded by the Environmental Enhancement Levy

Glenelg Wastewater Treatment Plant (WWTP) EIP	▪ MFP Waste Management Study Metro Adelaide
Bolivar WWTP DAFF*	▪ Sludge management plan
Bolivar WWTP odour/nutrient reduction	▪ Patawalonga gross pollution trap screen
Queensbury diversion EIP	▪ Coastal reclaimed wastewater plan
Port Adelaide WWTP EIP	▪ Aldinga sewerage scheme
Christies Beach WWTP EIP	▪ Inland reclaimed wastewater plan
Glenelg/Port Adelaide WWTP land disposal sludge main	▪ Country WWTP upgrade marine environment
Gumeracha WWTP nutrient reduction	▪ Port Lincoln WWTP
Aldinga WWTP	▪ Barossa Valley winery waste
Myponga WWTP nutrient reduction	▪ Bolivar sludge transfer system
HIAT woodlot	▪ Bolivar WWTP stabilisation lagoons
Mannum effluent disposal	▪ Rustlers Gully sewer
Murray Bridge effluent disposal	▪ Noarlunga township sewers
Hahndorf WWTP upgrade & nutrient removal	▪ Whyalla WWTP land based disposal & infiltration study
Glenelg WWTP effluent treatment	

* *DAFF - dissolved air floatation and flocculation*

Given funds raised by the levy were fully committed to the above projects, the Government agreed in 2001 that additional environmental improvements proposed for country areas would be funded by CSO supplementation.

Since 1995, an additional component of the EEL, currently 1.4% ($3 million), was introduced to fund the EPA. A more transparent connection between these revenues and payment arrangements to the EPA is being explored through the implementation of the revised public non-financial corporations (PNFC) ownership framework.

All wastewater and trade waste is now fully processed to acceptable environmental standards set by the EPA. All environmental costs attributed to and incurred by SA Water are incorporated into the maximum and minimum revenue outcomes.

Conclusion 11

> The Government considers that the inclusion in the maximum revenue outcome of all environmental management costs attributable to and incurred by SA Water in the provision of wastewater services is consistent with CoAG principles.

4.6 Tax equivalent regime

The CoAG guidelines state:

> 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].

In the 2004-05 water Transparency Statement the Government noted that the use of a pre-tax real rate of return on assets, using a WACC, is consistent with the CoAG guidelines and removes the need to include a separate allowance for income taxes, or TERs, in the maximum revenue outcome.

In its inquiry into the 2004-05 water pricing process ESCOSA stated:

> In the Commission's view, the Transparency Statement includes TER and is compliant with the CoAG Principles (ESCOSA, 2004a, page 45).

This view was confirmed by ESCOSA in the 2004-05 wastewater inquiry, although ESCOSA made further suggestions:

> the taxation amount should be split separately from the dividend amount when presenting the information to Cabinet for the water pricing decision
>
> a post-tax WACC should be used for the purpose of calculating the maximum revenue and the taxation amount should be included in the cashflows (ESCOSA, 2004b, p 37).

With regard to ESCOSA's first point, the dividend and TER amounts were presented separately to Cabinet for the water and wastewater pricing decisions and are separately reported in this Transparency Statement. The dividend amount is only included in the minimum revenue outcome, to be discussed in the following chapter.

With regard to the second point, ESCOSA noted:

> The regulatory trend is to move towards a post-tax cost of capital regime. Also, the fact the pricing principles require TERs to be included in both maximum and minimum revenue calculation implies that a post-tax WACC is more appropriate, and the taxation amount should be included in the cashflows (ESCOSA, 2004a, p 45).

The Government has previously indicated that, as the maximum revenue outcome includes an opportunity cost of capital based on a pre-tax WACC, it considers that the maximum revenue outcome includes an allowance for taxes or TERs and is consistent with the CoAG guidelines.

With regard to regulatory trends in the water industry, it is not clear that there is a trend to use a post-tax WACC. The Queensland Competition Authority (QCA) adopts a post-tax nominal WACC for pricing purposes and the Victorian Essential Service Commission (ESC) has recently proposed to adopt a post-tax real WACC in its Guidelines to Urban Water Businesses. However, the Independent Pricing and Regulatory Tribunal of New South Wales (IPART) has consistently adopted a pre-tax real WACC as appropriate for government owned businesses where the taxes and dividends are paid to the government (IPART, 2002, p 15). Government Prices Oversight Commission (of Tasmania) (GPOC) and the Independent Competition and Regulatory Commission (of the Australian Capital Territory) (ICRC), have also recently adopted a pre-tax real WACC.

Further, in South Australia, both ESCOSA in the electricity industry and South Australian Independent Pricing & Access Regulator (SAIPAR) in the gas industry have adopted a pre-tax real WACC for regulatory purposes.

As in the 2004-05 water and wastewater pricing decisions, the pre-tax approach to estimating the required return on assets has been adopted. It is considered that the inclusion of a pre-tax return on assets in setting the maximum revenue outcome removes the requirement to include a separate allowance for income TERs when estimating the maximum revenue outcome.

Nevertheless, the Government will continue to monitor regulatory developments and interstate pricing reviews in the water industry with regard to the use of pre or post tax WACC.

Conclusion 12

> The Government considers that the use of a pre-tax required rate of return on assets complies with CoAG principles and removes the need to include a separate allowance for income TER in the maximum revenue outcome.

5 Minimum revenue outcome, 2004-05 — maintaining commercial viability

5.1 Introduction

This chapter outlines the estimation of the minimum revenue outcome.

According to the CoAG guidelines, the minimum revenue outcome (meeting current and ongoing responsibilities and liabilities of the business, and ensuring ongoing commercial viability) should recover at least:

- operating, maintenance and administrative expenses — efficient business costs
- provision for future asset refurbishment/replacement (estimated by projected depreciation expense)
- dividends
- interest costs on debt
- externalities
- taxes and TERs.

The same principles are applied to both the water and wastewater segments of SA Water's business as their minimum revenue outcomes have common components.

Each component is discussed below. Estimates of the minimum revenue outcomes for are reported in Chapter 8.

5.2 Operating, maintenance and administrative expenses

The determination of efficient business costs has been discussed in Section 4.2.

5.3 Provision for future asset refurbishment/replacement

The CoAG guidelines state:

> 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 (NCC, 1998, p 112).

In the 2004-05 water and wastewater pricing decisions, the Government used straight-line depreciation as a broad estimate of the expenditure required to maintain the asset base in the minimum revenue outcome, given that an annuity estimate was not available. The Government also indicated that SA Water would continue to enhance its asset management plans so that an annuity estimate could be developed in future.

In its final report on the 2004-05 water pricing process, ESCOSA stated:

> SA Water should establish estimates for annuity based provisions for asset replacement/refurbishment and report this in the next Transparency Statement (ESCOSA, 2004a, p 29).

ESCOSA confirmed this requirement in its final report on the 2004-05 wastewater pricing process.

Using a similar analysis to that used in the Expert Group report, ESCOSA indicated that the straight-line depreciation method is "a poor proxy for an annuity". The Expert Group indicated that, as a result of timing differences, the depreciation forecast for major urban water authorities is likely to be greater than the annuity estimate for future asset refurbishment/replacement sufficient to maintain the ongoing service capacity of the water business (Expert Group, 1998, p 23). The Productivity Commission recently supported this view (Productivity Commission, 2004, p 155).

Nevertheless, the Expert Group noted that, despite the timing differences described above, charging should be based on the economic loss of service potential, or depreciation on assets, based on deprival value. It was considered that a provision for future asset refurbishment/replacement based on the annuity approach would be:

> sufficient to ensure that funds are raised to preserve an entity's service delivery capacity and reflects the minimum provision that should be made in charging arrangements (Expert Group, 1998, p 23-24).

Where depreciation provision exceeds the annuity estimate, the minimum revenue outcome would be relatively larger than if an annuity value was used. To the extent that forecast target revenue exceeds minimum revenue outcome, any concerns about the sustainability of ongoing service delivery capacity of the water business would be alleviated.

The Government's response to ESCOSA's inquiry into the 2004-05 water pricing process stated:

> The Government intends to develop an appropriate methodology for the inclusion of the annuity approach, rather than straight-line depreciation, as the estimate of asset refurbishment/rehabilitation when determining the Minimum Revenue Outcome for the purpose of establishing water and wastewater pricing arrangements.
>
> It is intended that this would be finalised for inclusion, to the extent possible, in the 2005-06 Urban Water and Wastewater pricing decision.

This was confirmed by the Government in its response to ESCOSA's inquiry into the 2004-05 wastewater pricing process.

SA Water has since upgraded its asset management plans to produce a 25 year view of its asset replacement/refurbishment requirements, established on the basis of a model called NESSIE, which takes into account issues such as:

- SA Water's initial 5 year asset management plan
- the requirement for continuity of the service capability of the assets
- adjustments for the actual scale of replacement costs
- the effect of current replacement practices on asset lives.

SA Water then reviewed the base case using the strategic management modelling approach. This approach assumes that the asset is replaced when the increased repair

and running (wear out) costs over time equal the annualised cost of replacement, after which the cycle repeats itself. The additional repair and wear out costs are based on an analysis of cost drivers relevant to the specific asset group.

These results are reviewed to establish an optimal mix of capital and maintenance costs for SA Water to maintain appropriate service capacity and standards. This information is then incorporated into the NESSIE model to establish a revised asset management plan.

The annuity estimate is calculated by estimating the present value of annual cash flows, based on the NESSIE model predictions. The present value is then converted to an equivalent annual annuity over the planning horizon of 25 years. Calculations are estimated on the basis of a WACC of 7% pre-tax real. SA Water's modelling indicates that the annuity estimate is not sensitive to changes within the endorsed 6-7% pre-tax real WACC range.

The annuity estimate is considerably lower than the previous estimate of straight-line depreciation value used in the 2004-05 water and wastewater pricing decisions. Consequently, the minimum revenue outcome required to preserve the ongoing service capacity of water and wastewater infrastructure is lower than previously predicted.

Conclusion 13

> The Government considers that the inclusion in the minimum revenue outcome of an annuity estimate of SA Water's future requirements for asset replacement/refurbishment complies with CoAG principles.

5.4 Dividends

The CoAG guidelines suggest that dividends, if any, should be included in the minimum revenue outcome and that:

> dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome (NCC, 1998, p 112).

The Government's previous dividend policy was contained within the Government's broader Contribution Policy.

In accordance with the previous Contribution Policy, SA Water was to provide 55% of its free cash from operations (ie earnings before interest, tax, depreciation and amortisation (EBITDA)) less that level of capital expenditure agreed with the Treasurer as necessary to maintain the ongoing business operation of SA Water. The first call on this contribution to the Government was SA Water's tax equivalent payments (ie 30% of before tax profit), with the remainder paid to the Government as dividends.

In its final report on the 2004-05 urban water pricing inquiry, ESCOSA stated:

> The following changes would assist in the process for making urban water pricing decisions compliant with the CoAG Principles:
>
> (1) Dividend policy is stated transparently and not as a combined contribution to the government.
>
> (2) Depreciation is calculated in accordance with adjusted asset values (see recommendation under asset valuation)
>
> (3) Capital structure is outlined and it is demonstrated that the dividend policy is not leading to changes in the capital structure (ESCOSA 2004a, p 43).

In its response to ESCOSA's report, the Government stated:

> The Government intends to finalise a Dividend Policy (which is distinct from tax equivalent payments) by August 2004. The review would be implemented to the extent possible prior to the 2005-06 Urban Water and Wastewater pricing decision.
>
> The Government intends to finalise a Capital Structure Policy, which would be implemented to the extent possible, prior to the 2005-06 Urban Water and Wastewater pricing decision. Additional information will be provided in the 2005-06 Urban Water and Wastewater Pricing Transparency Statement on the relationship between dividend policy and capital structure.
>
> The Government believes the current processes for consideration of capital expenditure proposals provide adequate transparency. Coupled with the new Ownership Policies and the use of an annuity for Minimum Revenue Outcome purposes, the Government believes there is no requirement for the Minister for Administrative Services to make any statements on SA Water's capital expenditure requirements.

The Government confirmed these matters in its response to ESCOSA's final report on the 2004-05 wastewater pricing process.

5.4.1 Relationship between capital structure and dividend policy

In response to ESCOSA's third point on the relationship between capital structure and dividend policy, the Government presented additional information in the 2004-05 wastewater Transparency Statement.

In response to this additional information, ESCOSA indicated:

> The potential use of dividend policy to restructure the balance sheet has now been addressed in the Transparency Statement Part A, with the inclusion of a trend analysis comparing SA Water's capital structure, the level of debt and the dividends.

Table 8 indicates that SA Water's capital expenditure for the period 1998-99 to 2002-03, totalled $537 million. However, its borrowings for the same period only increased by $107 million. Therefore, SA Water's capital expenditure was only partially financed by debt, and operating profits or retained earnings (or funding from levies, such as the EIP) financed most capital expenditure.

Table 8: SA Water's financial data

Ratio	1998-99	1999-00	2000-01	2001-02	2002-03	TOTAL over 5 years
Total borrowings ($m)#	1,122	1,182	1,211	1,194	1,229	
Change in borrowings ($m)#	–	60	29	–17	35	107
Capital spend ($m)#	104	100	102	107	124	537
Operating profit before tax ($m)#	180	197	208	223	258	
Dividend ($m)#	144	175	135	137	165	757
Dividend payout ratio (%) #	116	124	96	85	90	
Debt to total assets (%)*	17.5	17.8	20.0	19.5	19.2	
Cost recovery (revenue/expenses) (%)*	193.0	197.3	190.5	191.5	196.2	
Interest cover ratio (times)#	3.0	3.1	3.3	3.5	4.2	
Current Ratio*	86.9	62.2	97.3	97.0	75.3	
Cash balances ($m)#	0.56	0.44	0.97	1.38	1.60	

* *Sourced from Productivity Commission, 2003, page 205. Productivity Commission data is based on Government Finance Statistics, Australian Bureau of Statistics*

\# *Sourced from SA Water. Annual capital spend includes payment for construction and purchase of infrastructure assets, plant and equipment and payment for investments as per statement of cashflows*

Table 8 also indicates that SA Water's dividend payout ratio has fallen over the period. It does not have a high debt to total assets ratio, nor a low interest coverage ratio.

The Current Ratio (highlighted in Table 8) measures the ability of a government business enterprise to meet short-term liabilities. The Productivity Commission noted that, although the Current Ratio of most water businesses is below 100, the reasonably stable cash flows (as indicated by the stable cost recovery ratios) suggest that the low Current Ratios can be sustained (Productivity Commission, 2003, p 165).

Additionally, as SA Water is a Government owned enterprise, it is subject to Government requirements including ministerial and Cabinet controls of its budget and capital expenditure, and has a legislative Government guarantee[7].

[7] Section 28 of the *Public Corporations Act 1993* states: *"*(1) The liabilities of a public corporation are guaranteed by the Treasurer".

5.4.2 Adjusted depreciation values

ESCOSA's second point has been discussed in Section 4.3.3, which addresses calculation of the adjustment to the depreciation estimate as a result of the removal of contributed assets from the asset base.

SA Water's profits, dividends and income tax equivalents are estimated and recorded on the basis of professional accounting standards, the Treasurer's Instructions and Accounting Policy Statements issued under the *Public Finance and Audit Act 1987*. These dividend and income tax equivalents amounts are included in the minimum revenue outcome, as required by the CoAG guidelines, and reported separately and transparently.

5.4.3 New dividend policy

With regard to ESCOSA's first point, while the Government considers that the dividends paid by SA Water are consistent with commercial realities, it has developed a new dividend policy that establishes dividends on a separate basis from the income tax equivalent. The new dividend policy can be clearly identified as being consistent with commercial realities and competitive neutrality principles.

In November 2004, the Government approved a new ownership framework for PNFCs, which includes capital structure and dividend policies.

The capital structure policy involves determining capital structure bands for each PNFC, taking into consideration factors such as:

- the volatility of cash flows
- the characteristics of the market in which the business operates
- the capital intensity of the business
- financial flexibility to allow for approved and unexpected capital expenditure and changes in operating conditions.

The new policy framework for dividends incorporates the following key elements:

- dividends would be calculated with consideration of the capital structure targets for each PNFC
- dividends would be paid based on actual, rather than budgeted, outcomes
- dividends would be paid on after tax profit, rather than on a cash basis. Special dividends may be paid if determined to be appropriate by the Treasurer. Dividends will not exceed the accumulated surplus of the PNFC
- the dividend requirements of the Government as shareholder would be consistent with the approved capital structure bands for the PNFC
- the timing, process of payment and revision of dividends would be on a consistent basis.

The Government considers that dividends calculated on the basis of after tax profit and actual outcomes more closely reflect commercial realities, and provide appropriate incentives to the management and board.

In November 2004 the Government also approved implementation of the new ownership framework, which is expected to be budget neutral in 2005-06. The Government will make a formal decision on the individual application of the new ownership framework, including the capital structure and dividend policies, for SA Water in January 2005. The best estimates of the dividends to apply in 2005-06 are outlined in Chapter 8, Table 18.

Conclusion 14

> The Government considers that the inclusion in the minimum revenue outcome of a dividend estimate, based on after tax profit and actual outcomes (albeit subject to further consideration by the Government in January 2005), reflects 'commercial realities' and complies with CoAG principles.

5.5 Interest cost on debt

Interest expenses are included in the estimation of the minimum revenue outcome, which complies with the CoAG guidelines.

5.6 Externalities

The estimate of externalities in the minimum revenue outcome includes those externalities attributable to and incurred by SA Water, which complies with the CoAG guidelines. For further discussion of these externality costs see Section 4.5.

5.7 Tax equivalent regime

Accrued tax expenses are included in the estimated minimum revenue outcome, which complies with the CoAG guidelines. This has been confirmed by ESCOSA (ESCOSA, 2004b, p 36).

6 Price setting methodology 2005-06 — efficient resource pricing

6.1 Overview

This chapter outlines the efficient resource pricing principles considered by the Government when setting water and wastewater prices in South Australia for 2005-06.

6.2 CoAG principles and efficient resource pricing

The CoAG principles require:

> 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 (NCC, 1998, p 103).

Specifically, urban water service providers are required to adopt charging arrangements for water services:

> comprising an access or connection component together with an additional component or components to reflect usage where this is cost-effective (NCC, 1998, p 104).

The CoAG guidelines also specify that the level of revenue for a water business should be achieved on the basis of efficient resource pricing within maximum and minimum revenue outcomes, and sending the correct signals to consumers on the high cost of water consumption and augmentation.

6.3 Pricing structure for water

Water customers are classified into two broad groups:

- non-commercial customers, including residential customers
- commercial customers, including retail, wholesale, finance, real estate, professional, construction and recreational services.

SA Water's water pricing structure is based on a two-part tariff: an access (supply) charge and a two-tier water usage charge, with the first tier up to 125 kL.

Chapter 7 outlines the charges for commercial and non-commercial customers in 2004-05 and 2005-06.

6.4 Basis of water pricing structure

6.4.1 Consumption based pricing

In an industry with high fixed costs and long life assets, such as the water industry, marginal costs generally lie below average costs. The usage charge proposed by the Expert Group should be designed to send an efficient resource pricing signal to consumers, while an access charge (referred to in South Australia as the supply

charge) should recover the remaining fixed costs of the water supply system and ensure ongoing viability of the business (Expert Group, 1998, p 45).

In setting an appropriate supply and usage charge for natural monopoly infrastructure services, the Expert Group and regulators consider that an appropriate balance is required to avoid customers 'bypassing' the network and to encourage the efficient use of resources, for instance where available water resources are constrained.

SA Water introduced consumption-based charges for all but commercial customers in July 1995.

The pricing structure that applied before 2002-03 to commercial customers was a supply charge based on the property's value (a property rate), a free water allowance based on the supply charge and a water usage charge for amounts consumed in excess of the free allowance. The *Waterworks Act 1932* specifies the transitional arrangements to remove the free water allowances for commercial customers by 2006-07. These arrangements were outlined in the 2004-05 Transparency Statement on Urban Water Prices.

6.4.2 Efficient resource pricing based on long run marginal cost

The CoAG guidelines state:

> 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 (NCC, 1998, p 113).

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

LRMC differs from short run marginal cost by including an estimate of the cost of expanding (or augmenting) the infrastructure system in response to growing consumer demand. The CoAG guidelines consider it particularly important that the correct pricing signals are provided to consumers where significant infrastructure development will be required in the near future to cope with increases in demand.

SA Water has a two-tier usage charge. The first, lower tier, is up to 125 kilolitres of water consumed. This component facilitates affordability of an essential service and is justified by consistency with the Government's social policy, rather than on the basis of economic efficiency.

The second, higher tier, is consistent with current preliminary estimates of SA Water's Adelaide LRMC.

In its final report on the 2004-05 wastewater pricing process, ESCOSA found:

> The Transparency Statement outlines the pricing structure and the reasons for the pricing structure. The Commission considers both the structure and the reasons to be compliant with CoAG Principles (ESCOSA, 2004a, p 47).

Conclusion 15

> The Government considers that the current water pricing structure, consisting of an access component and a two-tier usage charge with the top tier being no less than estimated LRMC, complies with CoAG principles.
>
> The Government considers that the lower first tier usage charge is justified on the basis of general affordability of an essential service, rather than economic efficiency, and is transparently reported.

6.5 Pricing structure for wastewater services — other than trade waste

For other than large trade waste discharger customers, wastewater pricing is based solely on property value. The property rates used to calculate wastewater charges are updated every June to ensure consistency with the latest property values available from the Valuer General.

Country customers are charged at higher rates than Adelaide metropolitan customers with the intention that, as far as possible, their average expenditure on wastewater is the same as Adelaide metropolitan customers. The higher country scales reflect the lower average property values in country areas.

6.5.1 Consumption based pricing

Although CoAG principles indicate a preference for usage charges to be based on consumption, the NCC has noted that:

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

Most of the costs of providing and operating a sewerage system relate to fixed costs incurred when the system is established, irrespective of the quantity of wastewater subsequently discharged. For instance, SA Water has estimated that a typical household contributes approximately $25 in avoidable costs (ie less than 10% of the average household charge ($399 in 2004-05).

Details on the complexities of applying a consumption based charge on wastewater were provided in the 2004-05 wastewater Transparency Statement.

In its final report on the 2004-05 wastewater pricing process, ESCOSA found:

> The Transparency Statement outlines the pricing structure and the reasons for the pricing structure. The Commission considers both the structure and the reasons to be compliant with CoAG Principles (ESCOSA, 2004b, p 39).

Conclusion 16

> The Government considers it is not efficient to charge households on a consumption basis for wastewater services, as confirmed by the NCC and ESCOSA (NCC, 2003b, p 14).

6.5.2 Property based charging

CoAG principles do not stipulate how fixed wastewater charges should be apportioned. However, in its inquiry into the 2004-05 Wastewater Pricing Process, ESCOSA stated:

> Further information should be provided to improve the understanding of the selection of the adopted approach over those applied in other jurisdictions (ESCOSA, 2004b, p 40).

The Government's wastewater pricing review in 2000 investigated a number of options for allocating fixed wastewater costs to customers, including the use of a flat fee structure, rather than a property based structure (SA Water, 2000). However, the Government considered it more equitable for SA Water's customers to contribute to wastewater costs on an ability to pay basis, rather than on a flat fee basis.

To test the hypothesis that customers with higher property value have a greater ability to pay, SA Water reviewed incomes and capital values on a postcode basis in the metropolitan area for residential customers. The capital values were sourced from the Valuer General (used in assessing sewerage values) and income values by postcode were sourced from the Australian Taxation Office (Commonwealth of Australia, 2004). Data on income on a house-by-house basis is not available. The analysis showed a highly significant relationship between housing values and income as illustrated in Figure 6.

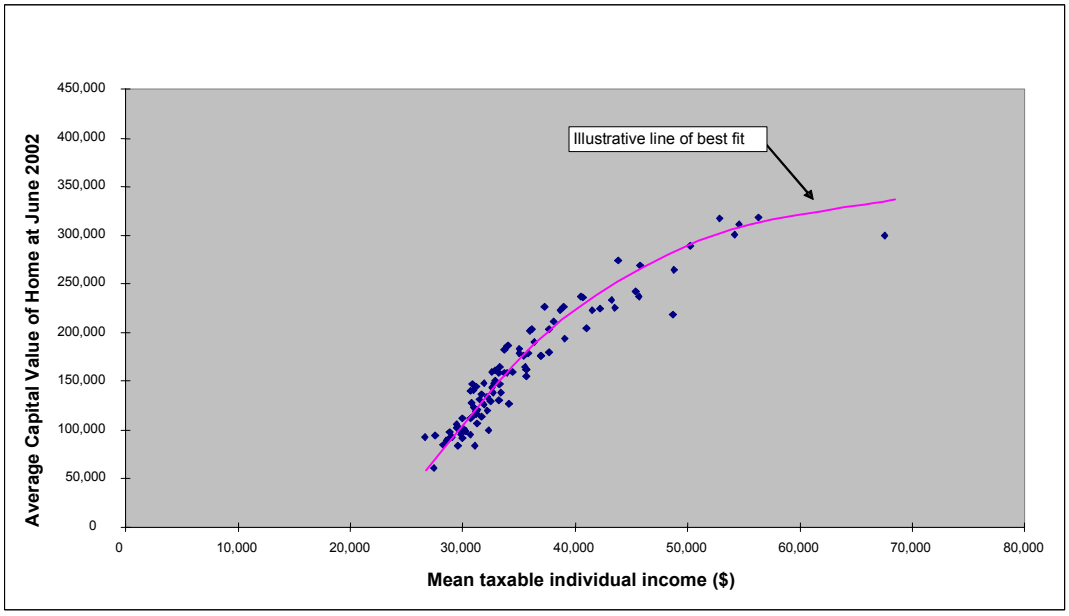


Figure 6: Property value and income levels 2001-02

There is also evidence from other studies by independent parties that property values are a reasonable indication of the ability to pay. A study by the South Australian Local Government Grants Commission, concluded:

> …there is a reasonable degree of correlation between average capital values and average incomes across council areas… (South Australian Local Government Grants Commission, 2004, p 13).

A study in New Zealand also found a high correlation between house values and income (Colegrave, 2002, p 5).

A move away from property based charges would involve a substantial redistribution of the share of cost recovery from customers who generally have a greater ability to pay to those with a lesser ability to pay. To move from property based charges applied to residential customers to, say, a flat charge set at the current average residential charges would require all residential customers on the minimum rate (around 30% of customers) to pay around $140 more each year, equivalent to a 54% increase. Any benefit in terms of efficiency gains from a different approach is not apparent.

Ability to pay and willingness to pay are valid and accepted as the basis for certain prices, particularly where costs are relatively fixed. Property value remains the most attractive basis for determining wastewater charges, in that it provides scope to meet Government's financial and social equity objectives without undermining economic efficiency.

Conclusion 17

> The Government considers that the current wastewater pricing structure, consisting of a fixed charge based on property value, complies with the CoAG principles and is the most appropriate form of charging for wastewater services on efficiency and equity grounds.

6.6 Basis of wastewater pricing structure — trade waste

Unlike residential customers and most commercial customers, there are some industrial customers whose discharges to the wastewater system do impose significant costs.

The NCC has stated:

> South Australia's fully volumetric water and wastewater pricing regimes, which are being phased in over five years from 2002-03, will achieve, by 2006-07, the CoAG objective of removing cross-subsidies that are not consistent with efficient and effective service, use and provision. The Council endorsed this transitional movement to fully volumetric pricing in previous NCP assessments (NCC 2003c, p 6.10).

It is estimated that, while 7000 trade waste dischargers are contributing around 25% of the pollutant load to SA Water treatment plant, less than 50 of them account for over 90% of the load generated (ie around 22.5% of the total). This distribution of pollution load and the related avoidable costs confirm the appropriateness of a specific trade waste charge (based on volume and pollution load) on the highest 45 dischargers.

A broad based trade waste charge, applying to these highest dischargers, was introduced from 2002-03, replacing earlier charging arrangements that applied to fewer than 20 major dischargers. The new charge will be completely phased in from July 2006. While the new trade waste charges are being phased in, a CSO is being paid to SA Water.

The charges are being implemented as a condition of Industrial Trade Waste Discharge Permits negotiated with individual dischargers.

Key aspects of the arrangements are as follows:

- the charges only apply to Category 3 Trade Waste Dischargers, defined as having annual discharges that exceed any one of the following:
  - flow — 20 ML pa
  - biochemical oxygen demand (BOD) — 20 tonnes pa
  - suspended solids — 20 tonnes pa
- the charges are directly linked to total pollutant mass (as measured by BOD and suspended solids) and volume discharged

- the basic rates of these charges were determined to reflect avoidable costs imposed by trade waste discharges and include a 50% surcharge for high concentration flows
- a penalty charge is also applied to saline discharges above threshold levels agreed with each business. This charge is not intended to be a revenue raising measure but rather a measure to preclude discharge practice that will increase salinity of recycled effluent. No charge applies below the agreed threshold (which reflects specific business circumstances and industry practice) and the revenue the charge raises is not significant
- property based sewerage rates continue to apply to the dischargers but a discount to the maximum value of one third of the property charge is provided. This recognises that there are some fixed treatment costs, while at the same time providing an incentive at the margin for dischargers to reduce waste discharges
- for existing dischargers facing increases in the trade waste charge, transitional discounts are provided to manage the increases to the full application of the new charges. This transitional discount was 80% in 2002-03, 60% in 2003-04, is 40% in 2004-05 and will be 20% in 2005-06. Full charges will apply in 2006-07.

The trade waste charges are indexed for the second and third years of the current permit. The current permits have a 3 year term that will terminate in June 2005. The penultimate step for phasing in the charge (20% discount in 2005-06) and final implementation of the full charges (from July 2006) will occur under the permits to be negotiated by 1 July 2005.

Further information on the new permits pricing structure is discussed in Chapter 7.

6.7 Cross-subsidies

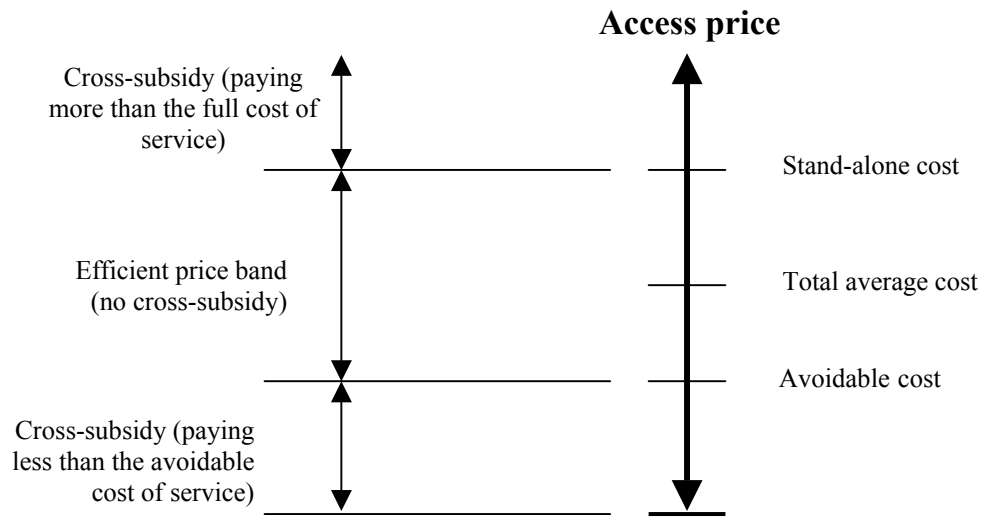
The CoAG Strategic Framework requires that cross-subsidies ideally be removed in order to promote efficient pricing. However, where cross-subsidies are retained they should be made transparent.

6.7.1 Defining cross-subsidies

South Australia has adopted the Baumol band (Figure 7), suggested by the NCC, as the theoretical definition of cross-subsidies (NCC, 2001, p 127).

The definition of a cross-subsidy adopted by SA Water is a situation where:

- some users are paying less than the LRMC (or avoidable cost) of service provision while others are paying more, and/or
- some users are paying more than the full cost of service provision on a stand-alone basis — stand-alone cost (ie with a dedicated system).



Source: SA Water

Figure 7: The Baumol band

Avoidable cost measures longer run incremental costs that would be avoided if the service provider did not have to provide the additional service being considered. It should not include allowances for existing joint or common costs (eg water treatment) of the service provision. In theory, pricing below avoidable cost will encourage the quantity demanded to be greater than the economically efficient level.

Stand-alone cost includes provision for the incremental costs of the additional service provided and the existing joint or common costs. In theory, pricing above stand-alone cost will discourage demand for services and could promote inefficient bypassing of the system (ie rendering the existing assets surplus to requirements). However, it is not a sensible alternative for most water and wastewater customers in an urban environment to attempt to provide their own services on a stand-alone basis, given the space, health and environment restrictions in urban areas.

To avoid cross-subsidies, pricing of the relevant service is required to ensure that all customers at least meet their marginal or avoidable costs, while the joint fixed costs are spread among the pool of customers by mechanisms (eg access charges) that take account of the benefits received or the ability to pay. Further, total charges to each customer should not exceed the stand-alone cost.

6.7.2 Water

In its final report on the 2004-05 water pricing process, ESCOSA indicated that, although the lower first tier of the water consumption charge may result in a cross-subsidy, this is transparently reported. However, there is unlikely to be any cross-subsidy to low consumption consumers, as they are still required to pay the connection charge ($141 in 2004-05) resulting in an average consumption charge of at least $1.03 per kL, which is above SA Water's estimated marginal cost.

Another possible area of cross-subsidy is in relation to the property based supply charge, applied to commercial customers.

The level of supply (access) charges paid by commercial customers is illustrated in Figure 8.

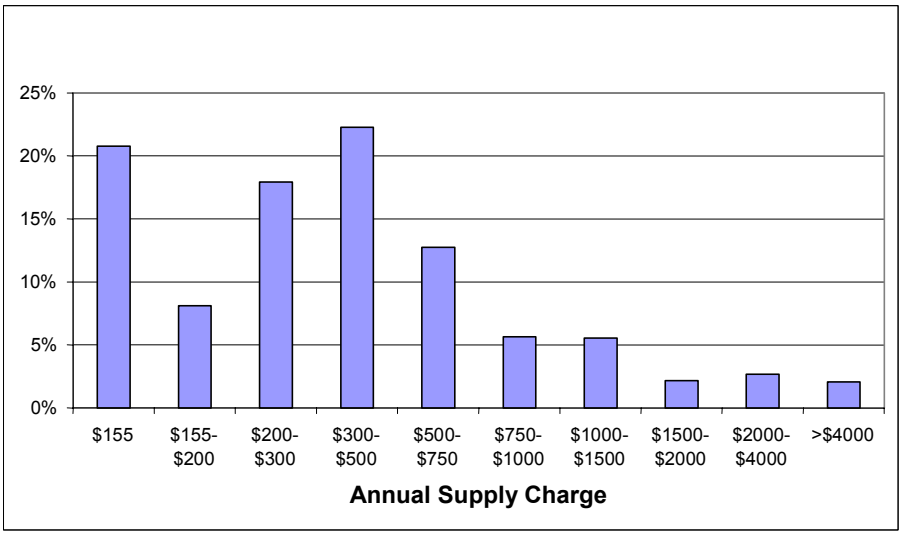


Figure 8: Supply charge distribution for commercial customers for 2004-05

Under this property based pricing arrangement there may be examples of customers paying substantial amounts for relatively low total water demands (eg major shopping centres). However, these customers would in most cases still be paying less than the stand-alone cost of installing their own water system (where this option is available) to the appropriate quality, health and environment standards.

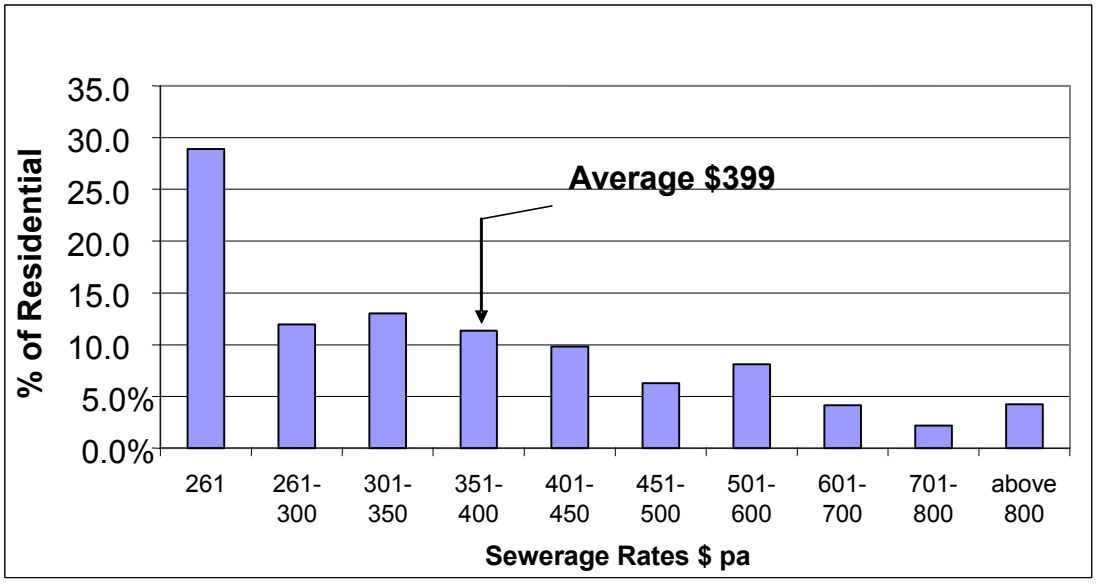
6.7.3 Wastewater

Table 9 provides information on SA Water's revenue and the various categories of SA Water customers for 2003-04. It includes the property based charges paid by trade waste dischargers but not the usage charge based on volume and pollutant load. The table shows that the proportion of revenue that non-residential customers contribute to SA Water's fixed costs is greater than the proportion of accounts held. Table 9 also indicates that the average rates charge for a non-residential account is significantly greater than for a residential account. However, these statistics do not represent the volume or pollutant load of wastewater actually processed.

Table 9: Property based wastewater revenue by customer class 2003-04

	Revenue	No. of accounts	Proportion of revenue	Proportion of accounts	Average rate charged per account
	$m		%	%	$
Residential					
Individual houses and home units	176.8	458,094	76.2	89.6	386
Other including flats, hostels	6.6	10,414	2.8	2.0	629
Non-residential					
Industrial	3.6	2,509	1.5	0.5	1,434
Commercial including hotels, motels	29.0	21,219	12.5	4.2	1,365
Other non-residential	16.2	18,987	7.0	3.7	855
Total	**232.2**	**511,223**	**100.0**	**100.0**	**454**

The distribution of cost recovery from residential customers with properties classified as an individual house/duplex/home unit, based on 2003-04 rates (and hence property valuations), is provided in Figure 9.



Note: Average calculated as total revenue divided by total number of customers

Figure 9: Sewerage rate distribution for residential customers 2004-05

Figure 9 indicates that 90% of the residential customers are paying between $261 and $600 with only 10% paying above that range. However, these customers would in most cases still be paying less than the stand-alone cost of installing their own sewerage treatment and disposal system (where this option is available) to the appropriate health and environment standards.

6.7.4 Statewide pricing

SA Water provides water and wastewater services to its customers in regional areas of South Australia at uniform prices, consistent with the South Australian Government's State-wide pricing policy.

Statewide pricing is an important element of the Government's equity and social justice policy and regional policy and was discussed extensively in the 2004-05 water and wastewater Transparency Statements.

The Government provides SA Water with a CSO to ensure SA Water's rates of return are similar between Adelaide metropolitan and country areas. This recognises the extra costs of providing water and wastewater services in country areas and that the Government's State-wide pricing policy places restrictions on SA Water's pricing regime.

The value of CSOs are reported in Chapter 8.

Conclusion 18

> The Government considers that CSOs related to State-wide pricing are transparently reported and comply with CoAG principles.

6.7.5 Trade waste

Some trade waste dischargers would be paying less than avoidable cost during the transition phase, for which SA Water receives a CSO. When current transitional discounts have been removed in June 2006, all significant trade waste dischargers will be paying charges sufficient to cover their avoidable costs.

The only exception is a company that has an agreement with the Government exempting it from the full charge until 2008. SA Water receives a CSO in compensation for the loss in revenue.

Conclusion 19

> The Government considers that consistency has been achieved with CoAG guidelines as any potential cross-subsidies arising from its wastewater pricing are addressed through CSOs.
>
> The transitional pricing arrangements, shifting trade waste customers to consumption based pricing over time, are consistent with CoAG principles.

7 Water and wastewater pricing decisions

7.1 Introduction

The Government made its decisions on 2005-06 water and wastewater prices by selecting the preferred forecast target revenue and a pricing structure that would achieve that target. These decisions also involved consideration of the NCP/CoAG framework and the trade-offs between economic efficiency and other policy considerations, such as equity and social justice policy, environmental policy and regional policy.

These other policy considerations significantly influenced the Government's choice of where, within the maximum and minimum revenue outcomes, the 2005-06 forecast target revenue would lie.

7.2 Price setting methodology

In accordance with the Water and Wastewater Price Setting Methodology for 2005-06 (Appendix 2), the Government firstly considered a number of scenarios of the forecast target revenue for the metropolitan and country water and wastewater operations.

These forecast target revenues were then compared with the estimated maximum revenue outcome and the minimum revenue outcome to ascertain whether or not they were within the revenue outcome band.

Once the Government settled on an appropriate forecast target revenue option, it considered various pricing options and the extent to which those prices promoted efficient resource allocation. The Government also took account of whether the pricing options would:

- minimise the scope for cross-subsidy and obviate any cross-subsidies that cannot be avoided through fully-funded CSO payments
- manage the impact of price changes for customers.

For the water pricing options, the Government paid specific attention to:

- the requirement to have separate components for access to the water supply and water use
- the CoAG recommendation that the usage component should ideally be based on LRMC, including provision for environmental externalities where feasible and practical
- the Government policy of State-wide pricing.

For the wastewater pricing options, the Government took into consideration:

- whether there was a need for separate components for "consumption" of sewerage services and access to the service
- the objective of encouraging the most cost effective methods of treating industrial wastes, whether at source or at SA Water plants by 2006

- mechanisms to achieve the intent of the Government's State-wide pricing policies.

7.3 Environmental policy

Efficient resource pricing would suggest that water and wastewater customers should receive a pricing signal about the environmental costs of providing water and wastewater services.

Identifying and measuring all environmental externalities is difficult and is the subject of rigorous methodological and empirical debate in Australia.

Taking account of the desire to limit the drawing of further water resources from the River Murray, the South Australian Government has imposed ongoing water restrictions on consumers. Its Save the River Murray Levy on SA Water customers aims to contribute to restoring the health of the River Murray over time.

As suggested by CoAG guidelines, when setting the top-tier water usage charge the government considered estimates of the range of LRMC for its major systems. The LRMC estimates include the scarcity value of water based on a CSIRO study of the value of water resources under optimal healthy conditions.

With regard to wastewater, volumetric trade waste charges are being phased in over five years for the highest dischargers (45 in total) so that they will all (except for one discharger, which has a separate agreement with the Government) meet the full cost of trade waste services by July 2006 (see Section 7.5.3 for further information). Identifying and measuring all volume and pollutant load is difficult for other customers (eg residential and commercial customers). Ultimately, all wastewater is fully processed to acceptable standards. Processing costs are met by a combination of customer and Government funding (via CSOs).

Given these existing regulatory controls to manage demand for water and wastewater services, the Save the River Murray Levy and the difficulties of taking into account environmental costs, the South Australian Government considers that it has sufficiently taken into account, at this time, environmental matters in setting 2005-06 water and wastewater prices.

7.4 Equity and social justice policy

One of the most important considerations of the South Australian Government in setting 2005-06 water and wastewater prices is the extent to which all customers are capable of paying increased prices for these essential services. These equity and social justice issues are vital and were at the forefront of the Government's 2005-06 water and wastewater pricing considerations.

The costs of other utilities have increased substantially and the Government does not want to unduly burden water customers with non-essential price increases.

7.5 The Government's 2005-06 water and wastewater pricing decisions

The Government considered a number of pricing options from the Minister for Administrative Services, as the Minister responsible for SA Water.

The options were consistent with the methodology approved by the Government on 18 October 2004 (Appendix 2), which was based on CoAG principles (Appendix 3).

As part of the Government's deliberations, relevant departments and agencies were consulted, including the Department of Treasury and Finance, Department for Environment and Heritage, Department of Water, Land and Biodiversity Conservation, Department of the Premier and Cabinet – NCP Implementation Unit, Department of Families and Communities, Housing Executive Committee, Department of Trade and Economic Development – Business impacts and the Office of Regional Affairs.

On 29 November 2004, the Government approved a 3.0% average increase in water charges and a 3.0% average increase in wastewater charges to apply to SA Water customers in 2005-06. The price increases are consistent with local consumer price index movements.

7.5.1 Impact of 2005-06 water prices

The impact of the increase on the water pricing structure is outlined in Table 10.

Table 10: Comparison of the pricing structure

Description	2004-05	2005-06
	Non-commercial	
Supply charge		
Residential	$141	$145
Business	$155	$160
Water usage charge		
First 125 kL	44 c/kL	46 c/kL
Above 125 kL	$1.03/kL	$1.06/kL
	Commercial	
Supply charge		
Property rating scale %	0.124	To be determined*
Minimum	$155	$160
Allowance (kL) — discounted water	Supply charge x 1.21 $1.03/kL	Supply charge x 1.28 $1.06/kL
Water usage charge		
First 125 kL	26.4 c/kL (44 c/kL discounted by 40%)	36.8 c/kL (46 c/kL discounted by 20%)
Above 125 kL and less than the allowance	61.8 c/kL ($1.03/kL discounted by 40%)	84.8 c/kL ($1.06/kL discounted by 20%)
Consumption above the allowance	$1.03/kL	$1.06/kL

* *2005-06 property rates are to be determined and gazetted in June 2005, when the latest information on property values is available from the Valuer General*

The increase for the average residential customer (ie consuming 250 kL per annum) will be $10.25 per annum.

7.5.2 Impact of 2005-06 wastewater prices

The impact of the increase on the wastewater pricing structure is outlined in Table 11.

Table 11: Comparison of the wastewater pricing structure

Description	2004-05		2005-06	
	Property Rates (%)	Min ($)	Property Rates (%)	Min ($)
Metropolitan				
Residential	0.1574	261	TBD*	269
Non-residential	0.1918	261	TBD*	269
Country				
Residential	0.1998	261	TBD*	269
Non-residential	0.2389	261	TBD*	269

* *Property rates for 2005-06 are to be determined (TBD) and gazetted in June 2005, when the latest information on property values, to apply for 2005-06, is available from the Valuer General*

Table 11 outlines that country customers are charged at higher rating scales than Adelaide metropolitan customers. The higher country scales are a reflection of the lower average property values in country areas. Property rating scales for 2005-06 are to be determined and gazetted in June 2005, when the latest information on property values to apply for 2005-06 is available from the Valuer General.

The intention of the different rating scales is for country customers' expenditure on their wastewater to be the same as Adelaide metropolitan customers. Over time, however, the average country customer's expenditure on wastewater has decreased relative to Adelaide metropolitan customers. Cabinet approved the removal of some of this discrepancy in 2004-05 and again in 2005-06, in accordance with the Government's statewide pricing policies.

This realignment results in an average increase in charges of 4.0% for country regions and 2.9% for the Adelaide metropolitan region. Households in country regions currently paying above the minimum will see an actual increase of closer to 4.6% on average.

Table 12 illustrates the indicative wastewater charges for the average residential property in the metropolitan area and country regions.

Table 12: Indicative Wastewater charges for the average residential property

	Average property value (2004-05)	Charge (2004-05)	Charge (2005-06)	Change	Change
	$	$	$	$	%
Metropolitan	249,000	392	403	11	2.9
Country	149,000	297	311	14	4.6

Source: SA Water

Using an estimate of average property value, the wastewater charge will increase by approximately $11 for metropolitan and $14 for country households.

The increase of 3% in the minimum charge from $261 to $269 per annum will affect 25% of metropolitan residential customers and 50% of country residential customers.

7.5.3 The Government's 2005-06 trade waste pricing decision

The revenue raised from trade waste charges is estimated to be $1.5 million for 2005-06 and $1.8 million in 2006-07. Although the revenue raised is not substantial in comparison to total revenue raised by SA Water, the charges are significant to trade waste customers.

As outlined in Section 6.6, current charges are set out in 3 year permits, subject to annual inflationary adjustments. The permits will terminate in June 2005.

To determine 2005-06 charges, a review of the avoidable costs imposed by major dischargers has been undertaken. This was based primarily on treatment costs at the Bolivar wastewater treatment plant where 85% of the total load from South Australia's trade waste dischargers is treated. The review also made some allowance for a proxy of the treatment costs of other wastewater treatment plants, which receive some of the flow (remaining 15% of the load) and a provision for additional network costs associated with the flows.

The results of this review are outlined in Table 13.

Table 13: Comparison of the trade waste pricing structure

Description	2004-05	2005-06
	$/kg	$/kg
Flow	0.036	0.070
Biochemical Oxygen Demand (BOD)		
For loading portion up to 1000 mg/L	0.191	0.164
For loading portion above 1000 mg/L	0.289	0.247
Suspended Solids (SS)		
For loading portion up to 500 mg/L	0.173	0.137
For loading portion above 500 mg/L	0.257	0.205
Total Dissolved Solids (TDS)*	1.370	1.440

* *Charge only applies above threshold agreed with each business*

As outlined in Table 13, charges for BOD and SS have been reduced while the charge for flow has increased substantially.

The reduction in the BOD and SS charges arises from greater recognition of the (lower) Bolivar wastewater treatment plant costs in the composition of the total charge, compared to other higher cost wastewater treatment plants. The previous charges provided for a 60% weighting for the Bolivar wastewater treatment plant. For 2005-06 the weighting has been increased to 85% reflecting more accurately the share of trade waste treated at the Bolivar wastewater treatment plant. The increase in the flow charge arises largely from recognition of some additional network costs imposed by the trade waste discharges.

The net effect is an average 11% reduction in the full trade waste charge. However, once phasing out of transitional discounts (from 40% in 2004-05 to 20% in 2005-06) is taken into account, the average increase for trade waste dischargers will be 20% in 2005-06.

Full implementation of the charges for all Category 3 customers, based on 2003/04 discharge levels, and charges for 2005-06 would raise revenue of $2.3m. However, most dischargers will receive transitional discounts as part of the phase-in arrangements and one discharger has a pre-existing agreement with the Government that provides exemption from payment of these new charges for the term of their agreement (2008).

Details of forecast revenues and impacts of transitional discounts and exemptions in 2005-06 are provided in Table 14.

Table 14: Trade waste charges 2005-06 (Category 3 customers) (excluding property charges)

	2002-03	2005-06
	$m	$m
Full trade waste charge applicable (with no discount)	3.45	2.34
Less transitional discounts / exemptions	-2.41	-0.89
Trade waste charges paid (after transitional discounts / exemptions)	1.04	1.45
Estimated avoidable cost imposed by dischargers	2.76	2.01

Source: SA Water

Table 14 indicates that the estimated trade waste charge, in the absence of transitional discounts, exceeds the estimated avoidable costs imposed. As discussed in Section 7.6.7 the transitional discounts are fully funded by CSO payments.

7.5.4 Revenue outcomes

The maximum and minimum revenue outcomes, based on the methodology used for the 2004-05 water and wastewater pricing decisions (except the WACC range has been altered to 6-7% from 6-8%) and the new methodology used for the 2005-06 pricing decisions, are demonstrated by Figure 10, Figure 11 and Figure 12.

The forecast target revenue, demonstrated in Figure 10, Figure 11 and Figure 12, is consistent with the Government's 2005-06 water and wastewater pricing decisions.

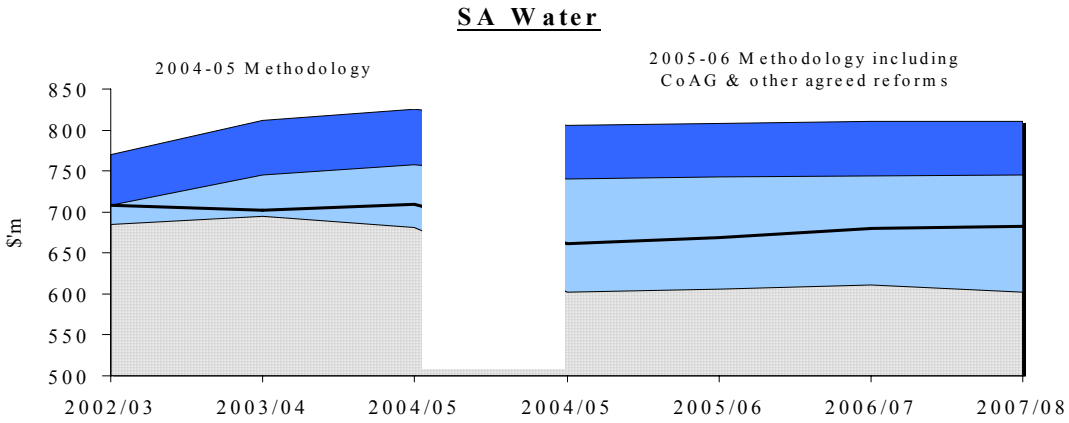


Figure 10: Comparison of total revenue outcomes for SA Water (in real 2004-05 dollars)

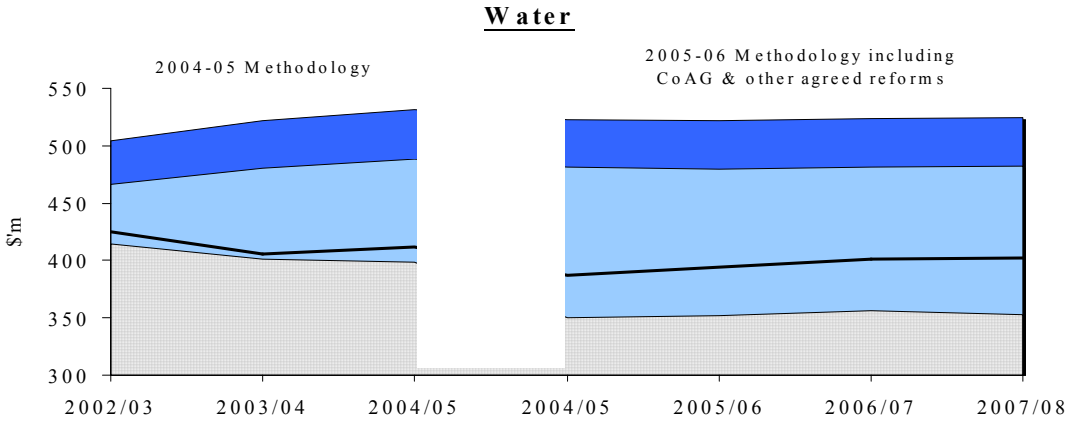


Figure 11: Comparison of total revenue outcomes for Water (in real 2004-05 dollars)

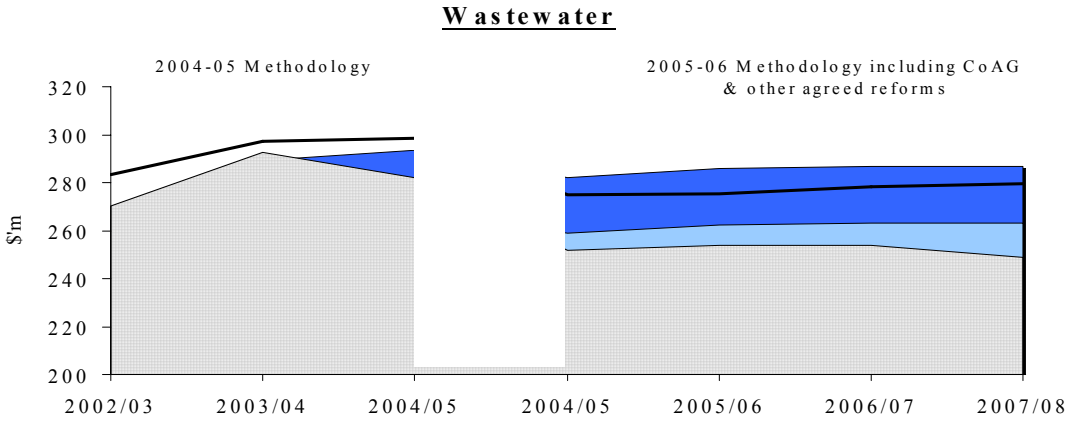


Figure 12: Comparison of total revenue outcomes for Wastewater (in real 2004-05 dollars)

Legend:

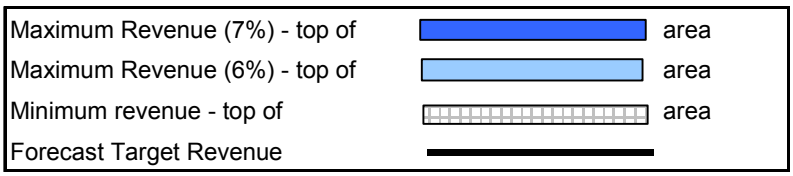


Figure 10, Figure 11 and Figure 12 illustrate that the changes in the methodology from 2004-05 to 2005-06 have lowered the maximum revenue outcome, the minimum revenue outcome and the forecast target revenue.

The lower maximum revenue outcome is primarily due to excluding contributed assets from the asset base (Section 4.3.3) and changing the WACC range from 6-8% to 6-7% (Section 4.3.4), resulting in a decrease in return on assets.

The minimum revenue outcome requires the inclusion of an asset replacement / refurbishment value. Accordingly, the Government has included an annuity value, rather than, as previously occurred, a straight-line depreciation value (Section 5.3). This is the primary reason for the reduction in the minimum revenue outcome. The annuity value is approximately 40% of the straight-line depreciation value.

The lower forecast target revenue is due to the change in the regulatory treatment of contributed assets (Section 4.3.3). Contributed assets are excluded from the asset base and the revenue associated with the contributed assets is excluded from the forecast target revenue. Removing the associated revenue from the forecast target revenue does *not* impact on the actual revenues of SA Water.

Figure 11 highlights a reduction in total forecast target revenue in 2003-04 when water restrictions led to a reduction in water sales revenue.

Figure 10, Figure 11 and Figure 12 illustrate that SA Water as a whole and SA Water's water and wastewater businesses are all operating within the maximum and minimum bounds in 2005-06, as required by the CoAG principles.

The components of the estimated maximum revenue and minimum revenue outcomes and the forecast target revenue are provided in Chapter 8, Table 18.

Conclusion 20

The Government considers that the forecast target revenue is consistent with the CoAG principles of avoiding monopoly profits and ensuring the ongoing financial viability of SA Water, being within the band of the maximum and minimum revenue outcomes.

The Government's approach to 2005-06 water and wastewater pricing decisions was influenced by equity and social justice policy, environmental policy and regional policy.

The transitional pricing arrangements shifting trade waste customers onto consumption based pricing over time is consistent with CoAG principles.

7.6 Community service obligations

According to the CoAG principles, CSOs are to be paid to the service provider where they are required to provide services to customers at less than full cost. The treatment of CSOs is also required to be reported transparently.

7.6.1 Review of CSO policy

The Government, as part of its review of ownership structure for PNFCs, has reviewed and approved a new CSO policy. The new CSO policy has adopted the following principles:

- a CSO arises when a government specifically requires a public enterprise to carry out activities relating to outputs or inputs which it would not elect to do on a commercial basis, and which the government does not require other businesses in the public or private sectors to generally undertake or which it would only do commercially at higher prices (Industry Commission, 1994, p xi)[8]
- CSOs are to provide incentives for the business to provide CSOs efficiently
- CSOs are to have a minimum impact on incentives on other parts of the business
- CSOs are to fund only best practice costs
- CSO payments are to be transparent and clearly reported
- performance management of the delivery of CSOs will be undertaken
- CSOs will be subject to an annual review
- CSOs will be valued on a 'cost per unit of output' approach.

The categories of CSOs currently funded to SA Water by the Government for water and wastewater activities, are:

- water conservation measures
- administration of the Save the River Murray Levy
- service charge exemptions/concession
- administration of the pensioner concession scheme
- statewide pricing
- trade waste
- other subsidies.

As part of the new CSO policy, the Government is in the process of reviewing SA Water's CSOs, particularly the method of determining the statewide pricing CSO. Although all of SA Water's CSOs will be reviewed in time for inclusion in the

[8] As proposed by the Steering Committee on National Performance Monitoring of Government Trading Enterprises.

2005-06 Budget, any significant changes to the value of the CSOs are likely to occur in 2006-07.

Further information on each category of CSO is addressed below. Some subsidies are also paid to SA Water. The CSO and subsidy payments for water and wastewater activities are reported in Chapter 8, Table 19.

7.6.2 Water conservation measures

Level 2 water restrictions were imposed in July 2003 following advice from the Murray Darling Basin Commission that South Australia faced a real risk of not receiving its normal entitlement flow over the following year. Following good rains the measures were lifted in October 2003 but replaced with permanent water conservation measures involving a baseline set of restrictions to support Government policy on water conservation.

The measures were supported in 2003-04 and 2004-05 by a $1.0 million and $0.8 million CSO to SA Water to fund a public education campaign to promote water conservation and in 2003-04 a $0.08 million CSO for SA Water to administer a rebate to water consumers for the installation of household water saving devices.

7.6.3 Administration of the Save the River Murray Levy

SA Water administers the Save the River Murray Levy. This is a new CSO payment, which covers SA Water's staffing and associated administration expenditure. The value of the CSO will be $340,000 in 2003-04 and $60,000 per annum from 2004-05.

7.6.4 Service charge exemptions/concessions

SA Water receives a CSO payment for providing service charge exemptions to certain customers, such as places of worship, charitable organisations and sporting clubs. The figure is an estimate of forgone payments, carried forward over time. Service charge exemptions and concessions in 2005-06 total $8.5 million for water and wastewater.

7.6.5 Administration of the pensioner concession scheme

SA Water administers pensioner entitlement applications and the distribution of concessions to local government. The actual pensioner concession payments are funded through a subsidy from the Department for Families and Communities based on the amount of the concessions paid. The CSO payment of $500,000 per annum covers staffing and associated administration costs.

7.6.6 Statewide pricing and associated CSOs

The Government's statewide pricing policy means that water and wastewater services are provided to some country locations at less than full cost.

It is the Government's view that statewide pricing delivers significant economic benefit to regional locations. It is an important element of the Government's regional policy, with further implications for equity and social justice policy.

To-date, Country grants have been effectively a subsidy paid to SA Water for its non-metropolitan infrastructure assets. The CSOs are intended to equalise the rate of return on non-metropolitan assets to that of metropolitan assets and are funded where

regional customers are paying less than the full cost of services.

The CSO payments relating to country operations comprise two elements:

- country assets in existence before 30 June 1999 have a CSO payment calculated in aggregate using a return on assets approach. The CSO payment raises the return on country assets to that achieved on metropolitan assets
- CSO payments for country assets purchased after 30 June 1999 are calculated using a return on investment approach.

As part of the new CSO policy, the Government is in the process of reviewing SA Water's CSOs, particularly the method of determining the statewide pricing CSO. Although SA Water's CSOs will be reviewed in time for inclusion in the 2005-06 Budget, any significant changes to the value of the CSOs are likely to occur in 2006-07.

7.6.7 Trade waste

A CSO is paid to SA Water to ensure that the effective subsidies to trade waste dischargers through phasing in of the trade waste charge are transparent.

Those CSO payments were negotiated prior to 2002-03 based on the trade waste charge and discharge levels at that time. The CSO includes provision for companies who have (or had) agreements with the Government that will exempt them from full charges.

As part of the new CSO policy, the Government is in the process of reviewing SA Water's trade waste CSO. The value of the trade waste CSO over time is outlined in Table 15.

Table 15: Trade waste discharger CSO payments

	2002-03 Actual $m	2003-04 Actual $m	2004-05 Estimated $m	2005-06 Estimated $m	2006-07 Estimated $m
Total	2.71	2.61	2.37	2.15	1.84

7.6.8 Other subsidies

SA Water also receives a number of subsidies and payments from various state agencies. These payments are for services provided for emergency services, free water to the Adelaide City Council and the Port Adelaide and Enfield Council, and involvement in a whole of government contract with EDS.

7.6.9 Total CSO payments to SA Water

SA Water's CSO obligations are funded separately and directly from the South Australian Government Budget. They are reported transparently in SA Water's Charter and the CSO payment to SA Water is disclosed in SA Water's Annual Report.

Parliament is therefore advised of SA Water's CSO funding.

The relevant assets are incorporated into SA Water's asset base, which is adjusted as appropriate. CSO payments are included in the forecast target revenue for the 2005-06 water and wastewater pricing decisions.

The total CSO payments to SA Water for water and wastewater services for 2003-04, 2004-05 and 2005-06 are provided in Chapter 8, Table 19.

Conclusion 21

The Government considers that it complies with CoAG guidelines on CSOs in that they are transparently reported and funded from consolidated revenue. Any potential cross-subsidies arising from its wastewater pricing decision are addressed through trade waste agreements and associated CSOs are transparently reported and funded from consolidated revenue.

8 Financial details relevant to the 2005-06 pricing decisions

8.1 Introduction

This chapter outlines some of the financial details that the Government reviewed in making its 2005-06 water and wastewater pricing decisions and includes some up to date financial information. The chapter includes:

- Table 16: Adjusted infrastructure asset base (nominal)
- Table 17: Asset base (real)
- Table 18: Comparison of revenue outcomes for SA Water (real)
- Table 19: Estimated CSO payments and subsidies to SA Water (nominal)
- Table 20: Summary of estimated SA Water capital expenditure (nominal)
- Table 21: Profits and distributions to the Government for SA Water (nominal)
- Table 22: Profits and distributions to the Government for water and wastewater business segments (nominal)
- Table 23: Summary of financial ratios for SA Water (nominal).

Table 16, Table 17 and Table 18 include forecasts provided for the 2005-06 water and wastewater pricing decisions.

Table 19, Table 21, Table 22 and Table 23 are based on the mid year budget review, which takes into account Government decisions up to December 2004. This information was not available for the 2005-06 water and wastewater pricing decisions. Table 20 is taken from the 2004-05 Budget.

8.2 Maximum and minimum revenue outcomes

The Government's methodology and the CoAG principles for setting water and wastewater prices require the calculation of a forecast target revenue below the estimated maximum revenue outcomes and above the estimated minimum revenue outcome (see Sections 4.3 and 4.4).

8.2.1 Asset base

As outlined in Section 4.3, the CoAG Strategic Framework requires water businesses to earn a real risk-adjusted return on the written down replacement cost of assets using a WACC. The 2004-05 pricing decisions used an opening balance of 1 July 2003 to roll forward SA Water's asset base. However, due to the significant changes in the treatment of contributed assets, WACC and annuity, the Government considered that for the 2005-06 pricing decision an opening balance as at 1 July 2004 would be adopted in determining SA Water's asset base. It is intended that this asset base would be adopted in future price setting considerations.

Further, during 2003-04, SA Water purchased a series of tradeable water allocations. It was considered that this intangible asset should be included within the infrastructure

asset base (SA Water, 2004, p 85). Therefore, the 1 July 2004 asset value of $6,463 million is comprised of infrastructure assets of $6,671 million (SA Water, 2004, p 102) and water allocations of $14 million (SA Water, 2004, p 99) less the estimated value for contributed assets, as at 1 July 2004 of $222 million (Section 4.3.3).

Table 16 illustrates the approach adopted to calculate the estimated asset base for total infrastructure assets.

Although the opening asset value considered by the Government in its 2005-06 pricing decision was an 'estimated' value of $6,455 million as at 1 June 2004, the asset base figures herein are based on final 'actual' infrastructure assets, as reported in SA Water's 2003-04 Annual Report, with relevant adjustments. The 'estimated' asset base considered by the Government was only marginally lower ($7 million) than the final 'actual' values reported in Table 16.

The information provided in Table 16 is based on nominal figures.

Table 16: Adjusted infrastructure asset base (in nominal terms)

Year	Opening balance ($'000)	Additions ($'000)	Inflation# adjustment ($'000)	Depreciation ($'000)	Closing balance ($'000)
			Total assets		
2004-05	6,462,749	145,534	77,553	-115,739	6,570,097
2005-06	6,570,097	134,578	78,841	-119,216	6,664,300
			Water assets		
2004-05	4,149,187	81,709	49,790	-76,992	4,203,695
2005-06	4,203,695	86,748	50,444	-79,364	4,261,522
			Wastewater assets		
2004-05	2,313,563	63,825	27,763	-38,748	2,366,403
2005-06	2,366,403	47,830	28,397	-39,852	2,402,778

The opening asset values were indexed by an asset cost index of 1.2%. The index allows for optimisation efficiencies and is calculated by SA Water from the material and labour indices for the construction industry in South Australia as maintained by the Australian Bureau of Statistics

The average asset base in real terms is presented in Table 17. The average real asset figure (ie the asset base) is used to estimate the maximum revenue outcome.

Table 17: Asset base (in real 2004-05 dollars)

Year	Opening balance ($'000)	Closing balance ($'000)	Average real assets ($'000)
		Total assets	
2004-05	6,540,302	6,570,097	6,555,200
2005-06	6,570,097	6,585,277	6,577,687
		Water assets	
2004-05	4,198,977	4,203,695	4,201,336
2005-06	4,203,695	4,210,990	4,207,342
		Wastewater assets	
2004-05	2,341,325	2,366,403	2,353,864
2005-06	2,366,403	2,374,287	2,370,342

An asset cost index was used to convert the nominal figures in Table 16 to real figures in Table 17.

8.2.2 Revenue outcomes

Table 18 displays the components of the estimated maximum revenue outcome and the minimum revenue outcome and compares them with forecast target revenue. The forecast target revenue reflects the Government's 2005-06 water and wastewater pricing decisions.

Table 18: Comparison of revenue outcomes for SA Water (in real 2004-05 dollars)

Outcome	Water		Wastewater		SA Water	
	2004-05 ($'000)	2005-06 ($'000)	2004-05 ($'000)	2005-06 ($'000)	2004-05 ($'000)	2005-06 ($'000)
			Minimum revenue outcome			
Operating expenditure	152,047	150,133	78,785	81,064	230,832	231,197
Annuity	30,000	30,000	10,000	10,000	40,000	40,000
Interest	63,120	64,659	26,925	29,212	90,045	93,871
Income tax allocation	34,636	34,211	44,692	42,699	79,328	76,910
Dividend allocation	70,799	72,963	91,355	91,067	162,154	164,030
Minimum revenue outcome	**350,602**	**351,966**	**251,757**	**254,042**	**602,359**	**606,008**
			Maximum revenue outcome			
Operating expenditure	152,047	150,133	78,785	81,064	230,832	231,197
Depreciation	76,992	77,429	38,748	38,880	115,739	116,309
Return on assets	252,080	252,441	141,232	142,221	393,312	394,661
Maximum revenue (6% WACC)	**481,119**	**480,002**	**258,765**	**262,165**	**739,884**	**742,167**
Operating expenditure	152,047	150,133	78,785	81,064	230,832	231,197
Depreciation	76,992	77,429	38,748	38,880	115,739	116,309
Return on assets	294,094	294,514	164,770	165,924	458,864	460,438
Maximum revenue (7% WACC)	**523,133**	**522,075**	**282,303**	**285,868**	**805,436**	**807,944**
			Forecast target revenue outcome			
Forecast target revenue: ie Government decision	**386,872**	**393,803**	**275,030**	**275,491**	**661,902**	**669,294**

The estimated nominal forecast target revenue for 2005-06 includes the Government's 3% increases in water and wastewater rates plus expected growth in the water and wastewater customer base. Further growth between 2004-05 and 2005-06 water forecast target revenues arises largely from:

- a low base of 2004-05 forecast target revenue due to meter reading timeframes
- revenue growth from water supply contracts, outside of standard water rates.

The nominal forecast target revenue was converted to the real forecast target revenue using a 2.5% deflator.

8.3 Community service obligations

SA Water's estimated CSOs and subsidies for 2003-04 to 2005-06, as at mid year budget review, are provided in Table 19. The values in Table 19 are in nominal terms. An explanation of the CSOs is provided in Section 7.5.

Table 19: Estimated CSO payments and subsidies to SA Water

CSO payments (in nominal terms)	Relevant agency	2003-04 ($m)	2004-05 ($m)	2005-06 ($m)
Community Education Program	PIRSA	1.0	0.8	0.0
Administration of the Save the River Murray Levy	PIRSA	0.3	0.06	0.06
Service charge exemptions/concessions	DFC	8.5	8.5	8.5
Administration of the pensioner concession scheme	DFC	0.5	0.5	0.5
Statewide pricing (pre 1999)	PIRSA	74.3	74.3	74.3
Statewide pricing (post 1999)	PIRSA	14.1	16.9	17.4
Trade waste	DTED	2.6	2.4	2.2
Subsidies				
Free water (Councils)	DTF for MGE	0.9	1.3	1.3
Emergency services	POLICE	0.1	0.1	0.1
EDS	DTF	0.9	0.2	0.0
Total CSO payments		**103.3**	**105.1**	**104.3**

8.4 Capital expenditure

SA Water's estimated capital expenditure for 2004-05, as per the 2004-05 Budget is presented in Table 20. The values in Table 20 are in nominal terms.

Table 20: Summary of SA Water's estimated capital expenditure (in nominal terms)

SA Water	2004-05 $'000	Total $'000
New works		
CSIS	300	19,300
Completion due 2007-08. Major upgrade of SA Water's computerised customer information and billing system		
Hindmarsh Valley dam safety	3,189	3,836
Rehabilitation work on the Hindmarsh Valley Reservoir to meet Australian National Committee Standards on Large Dams		
Torrens system upgrade	2,191	7,213
Replace open channel aqueduct with a pipe system to transport water from the Torrens Gorge weir to Hope Valley reservoir		
Works in progress		
Ancillary works Victor Harbor WWTP EIP	320	8,600
Completion due April 2005. Replacement of existing plant on a site remote from Victor Harbor with improved levels of treatment to reduce the level of nutrients discharged to the environment. The total project ($32.6 million) includes ancillary works by SA Water of $8.6 million and is partly delivered through a private sector provision arrangement.		
Whyalla EIP	11,084	14,360
New WWTP to be built in Whyalla to satisfy EPA requirements for nitrogen discharge into Spencer Gulf, through partial reuse of treated wastewater		
Clare Valley water supply scheme	2,713	34,800
Provision of bulk water to the Clare Valley for agricultural use and a new reticulated supply to five townships		
Meter replacement Stage 2	4,688	11,624
Second stage of the purchase and installation of 125,000 new meters and 14,000 additional meters to accommodate new services.		
Bolivar high salinity	9,962	97,144
Transfer of wastewater to new treatment facilities at Bolivar WWTP to reduce discharge of nutrients to the marine environment		
Eyre Peninsula water supply upgrade	5,212	25,200
Construction of a water desalination plant at Tod Reservoir to augment the Eyre Region water supply		
Other projects/programs for 2004-05 (approximately 350 individual projects, not separately reported)	90,521	
Total SA Water	**130,180**	

Source: SA 2004-05 Budget – Capital Investment Statement, page 43

8.5 Profit and its distribution

The estimated profits and their distribution for SA Water as a whole for the years 2003-04 to 2005-06, as at the mid year budget review, are provided in Table 21. The values in Table 21 are in nominal terms.

Table 21: Profits and distributions to the Government for SA Water (in nominal terms)

Item	SA Water 2003-04 ($'000)	SA Water 2004-05 ($'000)	SA Water 2005-06 ($'000)
EBITDA #	463,174	481,638	486,074
Profit after tax	179,765	192,721	187,258
Retained earnings	124,325	152,467	171,671
Dividend	174,110	164,579	168,054
Income tax expense	87,544	80,818	79,208

\# *Earnings before interest, tax, depreciation and amortisation*

Table 22 provides information about the earnings of the water and wastewater segments of SA Water and the contribution of those segments to profits, dividends and income tax payments, as at mid year budget reviews. The values in Table 22 are in nominal terms.

Table 22: Water and wastewater business segments contribution to profits and distribution (in nominal terms)

Item	Water*		Wastewater*	
	2003-04 ($'000)	2004-05 ($'000)	2003-04 ($'000)	2004-05 ($'000)
Contribution to:				
EBITDA	251,485	261,990	214,045	221,558
Profit after tax	80,535	58,465	101,604	109,167
Dividend	76,984	72,338	97,126	92,400
Income tax expense	38,708	35,487	48,836	45,329

* *Based on SA Water allocation of revenue and expenditure by business segments. Excludes "other" business segments.*

The estimated income tax expense is consistent with the Government's Policy on Competitive Neutrality.

8.6 Profitability and ongoing financial viability

Financial indicators of SA Water's ongoing financial viability, such as indicators of profitability and financial management, as at the mid year budget review, are provided

in Table 23. They are consistent with the Productivity Commission's definitions of financial performance indicators although reported statistics may differ as the Productivity Commission uses Government finance statistics.

Table 23: Summary of financial ratios for SA Water

Financial ratios	2003-04 (actual)	2004-05 (estimate)	2005-06 (estimate)
Profitability			
Return on assets	5.3%	5.4%	5.2%
Return on equity	3.4%	3.6%	3.4%
Financial management			
Interest cover (times)	4.2	4.0	3.7
Debt to equity	24%	22%	22%
Dividend payout ratio	97%	85%	90%

These financial indicators demonstrate strong profitability and interest cover. Additionally, the dividend payout ratio is declining and there is a low debt to equity ratio.

Bibliography

AASB Urgent Issues Group. 1996. 12/96. Abstract 11: Accounting for contributions of, or contributions for the acquisition of, non-current assets. Australian Accounting Standards Board.

Australian Water Association. 2002. Performance Monitoring Report 2000-2001, Australian Non Major Urban Water Utilities.

Fraser Colegrave. 2002. CV-Based Rates 'Benefit the Rich at the Expense of the Poor'.

Commonwealth of Australia. July 2004. Taxation Statistics 2001-02: A summary of taxation, superannuation and industry benchmark statistics 2001–02 and 2002–03 – Table 3 Part D.

Essential Services Commission (Vic). 2004. Guidance to Urban Water Businesses on assessment of Water Plans.

Expert Group. 1998. Report of the Expert Group on asset valuation methods and cost-recovery definitions for the Australian water industry.

ESCOSA. 2003. Electricity distribution price review: Return on assets: Discussion Paper. Government of South Australia

ESCOSA. 2004a. Transparency Statement — Part B: Urban water prices in South Australia 2004-05. Government of South Australia.

ESCOSA. 2004b. Transparency Statement — Part B: Wastewater prices in South Australia 2004-05. Government of South Australia.

ESCOSA. 2004c. Inquiry into the 2004-05 Wastewater Pricing Process – Issues Paper. Government of South Australia.

IPART. 2003. Determination No 3, 2003, May 2003, Hunter Water Corporation: Prices of Water Supply, Wastewater and Stormwater Services: From 1 July 2003 to 30 June 2005.

NCC. 1998. Compendium of National Competition Policy Agreements, 2nd ed.

NCC. 1999. NCP second tranche assessment of governments' progress with implementing National Competition Policy and related reforms, Volume Two: Water Reform.

NCC. 2001. Assessment of governments' progress in implementing the National Competition Policy and related reforms — South Australia Water Reform, June 2001. NCC

NCC. 2002. Assessment of Governments' progress in implementing the NCP and related reforms 2002. NCC.

NCC. 2003a. NCP Water reform assessment framework 2003. NCC.

NCC. 2003b. NCP Water reform assessment framework 2004. NCC.

NCC. 2003c. Assessment of Governments' progress in implementing the NCP and related reforms 2003. NCC.

NCC. 2004a. Assessment of governments' progress in implementing the National Competition Policy and related reforms: Volume two: Water. NCC.

NCC. 1 October 2004b. Letter to Director, National Competition Policy, Department of the Premier and Cabinet. NCC.

New South Wales Government. 2003. 2001/02 NSW Water Supply and Sewerage Performance Monitoring Report, Ministry of Energy and Utilities.

Network Economics Consulting Group. 2002. Dividend policy issues for government business enterprises engaged in providing water services. NEC

Productivity Commission. 2003. Financial performance of Government Trading Enterprises, 1997-98 to 2001-02.

Productivity Commission. July 2004. Financial Performance of Government Trading Enterprises, 1998-99 to 2002-03.

SA Water. 2000. Sewerage pricing in South Australia: A discussion paper.

SA Water. 2002. Review of WACC.

SA Water. 2003. SA Water Annual Report 2003. South Australia Government.

SA Water. 2004. SA Water Annual Report 2003-04. South Australia Government.

SA Water. no date. Customer Service Charter.
www.sawater.com.au/customer_centre/Charters/Customer_Service.pdf

Industry Commission. 1994. SCNPMGTE Community Service Obligations: Some definitional, costing and funding issues.

South Australia Government. July 2001. Accounting Policy Statement, APS 3.

South Australia Government. July 2002a. Competitive Neutrality Policy Statement.

South Australia Government. July 2002b. Accounting Policy Statement, APS 7.

South Australia Government. January 2004a. Transparency Statement – (Part A) Urban Water Prices in South Australia, 2004-05.

South Australia Government. May 2004b. Transparency Statement – Part C Government Response to ESCOSA's Final Report on Inquiry into 2004-05 Urban Water Pricing Process in South Australia.

South Australia Government. June 2004c Transparency Statement – Part A Wastewater Prices in South Australia, 2004-05.

South Australian Local Government Grants Commission. March 2004. Summary of Outcomes for the 2002-03-04 Review of Methodology – "Review of the use of property values as the sole indicator of capacity to raise revenue".

Water Services Association of Australia. 2003. The Australian Urban Water Industry – WSAA*facts* 2003.

Victorian Water Industry Association Inc.. 2003. 2002/03 Victorian Water Review.

Appendices

Appendix 1: Processes for setting 2005-06 water and wastewater prices and finalising the transparency statement

Date	Actions / Milestone (Ministerial Responsibility)
27 September 2004	Cabinet considers Methodology Cabinet Submission for setting water and wastewater prices for 2005-06. (Minister for Administrative Services)
	Cabinet considers Process Cabinet Submission for preparing a Transparency Statement. (Treasurer)
30 September 2004	ESCOSA's Draft Report on 2004-05 wastewater is available
By 22 October 2004	Agreement and best estimates of WACC, Contributed Assets, Annuity, Dividends and CSOs.
27 October 2004	Minister and Treasurer, respectively, receive Cabinet Submission on 2005-06 water and wastewater pricing and draft Transparency Statement.
15 - 29 November 2004	Cabinet considers a 2005-06 water and wastewater pricing Cabinet Submission. (Minister)
	Cabinet considers a draft water and wastewater pricing Transparency Statement and ESCOSA referral Cabinet Submission (Part A). (Treasurer)
By 7 December 2004	Gazettal of 2005-06 water prices. (Minister)
24 December 2004	Settled Transparency Statement (Part A) referred to ESCOSA. (Treasurer)
mid March 2005	ESCOSA provides final report to Treasurer (Part B).
mid April 2005	Cabinet considers the Response to ESCOSA's report (Part C). (Treasurer)
Within 12 Parliamentary sitting days	Transparency Statement (Part A, B, C) tabled. (Treasurer)
Late June 2005	Gazettal of sewerage rates consistent with Cabinet pricing decision. (Minister)

Appendix 2: Water and Wastewater price setting methodology for 2005-06

The methodology for setting 2005-06 water and sewerage prices is aimed at demonstrating appropriate rigor in addressing CoAG principles. In this context, the 2005-06 pricing decision must consider the Target Revenue and the Price Structure.

Target Revenue

The 2005-06 water and sewerage prices will be set to generate a revenue stream which allows SA Water to be commercially viable whilst not taking advantage of its monopoly position (ie. not charging monopoly rents for it services). These aspects are assessed against the principles of Minimum Revenue, Maximum Revenue and Target Revenue.

Commercial viability will be assessed by determining the amount of revenue (***Minimum Revenue***) which would be required to cover SA Water's 2005-06:

- operational, maintenance and administrative costs
- externalities
- taxes or tax equivalents
- dividends
- interest payments on debt
- a provision for asset refurbishment/replacement (return of assets/annuity estimate).

Maximum Revenue indicates the upper bound of revenue which could be generated but would still avoid a monopoly profit. The maximum revenue is that level of revenue required to cover SA Water's 2005-06:

- operational, maintenance and administrative costs
- externalities
- taxes or tax equivalents[9]
- a provision for asset consumption (return of assets/depreciation)
- a provision for the cost of capital based on weighted average cost of capital (return on assets).

To meet CoAG pricing principles, the ***Target Revenue*** options are to be determined within the Minimum and Maximum revenue limits. The approved Target Revenue will be the base for setting 2005-06 prices and should recognise as objectives:

- continuing to achieve lower bound pricing for non-metropolitan systems
- moving towards upper bound pricing for metropolitan systems by 2008.

[9] Maximum Revenue will account for taxes and tax equivalents through use of pre-tax weighted average cost of capital

In assessing the factors above:

- the value of assets for price determination purposes will be assessed using a fair value methodology[10]
- based upon an agreed method of treatment, a provision will be made to estimate the value of contributed assets[11]
- provision will be made for agreed Community Service Obligation (CSO) revenues
- the revenue estimates will represent efficient resource pricing and business costs having regard to appropriate benchmarks, financial ratios and other factors, as relevant.

Price Structure

The structure of pricing options must have regard to the extent to which prices can provide economic signals to promote efficient resource allocation.

Water and sewerage pricing options for 2005-06 will:

- achieve the preferred Target Revenue option
- minimise the scope for cross-subsidy and obviate any cross-subsidies that cannot be avoided through fully-funded CSO payments (that will be transparently reported) to ensure that they are not passed on to customers
- manage the impact of price changes for customers.

Specifically, in regard to water, pricing options will:

- comprise separate components to reflect access to water supply and water use
- involve a usage component that is ideally based on long-run marginal costs including provision for environmental externalities where feasible and practical
- be applied State-wide.

In respect of sewerage pricing options, consideration should be given to:

- any need for separate components for "consumption" of sewerage services and access to the service
- an objective of encouraging the most cost effective methods of treating industrial wastes, whether at source or at SA Water plants by 2006

[10] The CPA guidelines, based on the original "Expert Group" 1998 guidelines, stipulate that the deprival value method should be adopted for asset valuation "unless specific circumstances justify another method". The South Australia Government Accounting Policy Statement, APS 3, now requires the fair value basis to be applied to the measurement of non-current assets and considers that, in the majority of cases, there will be no practical difference between the asset valuations using the Optimised Deprival Value approach and the fair value method.

[11] Provision for contributed assets in the asset base, dividends, tax equivalents and weighted average cost of capital etc to be adopted in these analyses are to be subject to the outcome of further discussions between SA Water and the Department of Treasury and Finance and will have regard to the outcome of the reviews of the Public Non-Financial Corporations Ownership Policies currently being finalised by the Department of Treasury and Finance.

- mechanisms to achieve the intent of the Government's State-wide pricing policies.

Pricing Decision

Cabinet to determine the preferred Target Revenue and an appropriate pricing option for both water and sewerage, taking into account the trade-offs between economic efficiency, social equity and environmental outcomes within the context of the CoAG water reform framework.

Appendix 3: CoAG Strategic Framework

Relevant clauses of the CoAG Strategic Framework 1994

In relation to water resource policy, CoAG agreed:

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

3 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 customer 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 —

iii. 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;

iv. 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

v. 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, page 103–104

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 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 approaches, 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, page 112–113

Appendix 4: Relevant Clauses of the National Water Initiative

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;
    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.

Actions

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 separated 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 metropolitan 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 on 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.

Appendix 5: Terms of reference for referral to ESCOSA

- DRAFT – to be updated with signed version when available.

NOTICE OF REFERRAL FOR AN INQUIRY INTO WATER AND WASTEWATER PRICING IN METROPOLITAN AND REGIONAL SOUTH AUSTRALIA FOR 2005-06 PURSUANT TO PART 7 OF THE ESSENTIAL SERVICES COMMISSION ACT 2002

FROM: **The Hon Kevin Foley, Treasurer**

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

RE: **Water and Wastewater Prices in Metropolitan and Regional South Australia from 1 July 2005**

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. 3393).

3. The South Australian Government proposes to publish a Transparency Statement each year on SA Water's water and wastewater prices. The Government has prepared the attached Transparency Statement.

4. The Transparency Statement links Cabinet's decision on water and wastewater prices to CoAG pricing principles, provides information on SA Water's financial performance in the context of pricing decisions and past and future expenditures, and addresses details of estimates of revenues, community service obligations, capital expenditure program, profit and its distribution.

5. SA Water is to meet the reasonable costs of the Commission in undertaking the inquiry.

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) and (c) 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 processes undertaken in the preparation of advice to Cabinet, resulting in Cabinet making its decision on the level and structure of SA Water's water and wastewater prices in metropolitan and regional in South Australia for 2005-06, with respect to the adequacy of the application of CoAG pricing principles;

(b) In undertaking this inquiry, the Commission is to consider the *Transparency Statement Metropolitan and Regional Water and Wastewater Prices in South Australia 2005-06* (Part A) dated December 2004;

(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 CoAG principles was made available to Cabinet.

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 both myself and the Minister for Administrative Services by no later than 11 March 2005;

(b) I require that the Commission submit a Final Report on the inquiry to both myself and the Minister for Administrative Services by no later than 8 April 2005;

(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 14 days from the date of publication of the Notice of Inquiry as required pursuant to section 36 of the Act;

(d) If the Commission wishes to seek further information or guidance in relation to the conduct of this inquiry, it may contact the Director Infrastructure,

Microeconomic Reform and Infrastructure Branch, Department of Treasury and Finance.

DIRECTIONS:

The following direction is made pursuant to section 35(5)(f) of the Act:

I direct that in undertaking its enquiry the Commission must preserve the confidentiality of any information, material or documentation provided by Government to enable the Commission to undertake its enquiry and stamped "Strictly Confidential".

Kevin Foley MP
TREASURER

Appendix 6: Benchmarking of metropolitan service standards

Introduction

This appendix presents information regarding the benchmarking of metropolitan service standards for SA Water.

SA Water participates in WSAA*facts*, a national benchmarking publication of the Water Services Association of Australia (WSAA), which has been accepted by the NCC as a recognized source of benchmarking information for metropolitan service providers.

SA Water also has its own internal performance standards, which are set out in its Customer Service Charter. A Performance Statement, as agreed with the Minister for Administrative Services and the Treasurer, sets financial and service performance standards.

SA Water's service levels are also influenced by minimum environmental standards as set by the EPA.

Comparability of service levels

WSAA*facts* focuses on reviewing the performance of 27 major urban water utilities. SA Water participates in the WSAA benchmarking in respect of the metropolitan portion of its business.

The scope of services provided by utilities participating in WSAA*facts* differs markedly. Some provide only retail services; others only bulk water services; while others provide the full range of wastewater services. Some serve a single city while others have a statewide focus. Some key differences between SA Water's operating environment and that of other water services providers are:

- access to water resources
- water quality
- topography
- environmental and customer service standards
- climatic conditions
- soil conditions.

Some key differences between SA Water's operating environment and that of other wastewater services providers are:

- topography
- system size (economies of scale)
- soil conditions and groundwater levels
- age and condition of the system
- effluent disposal opportunities
- environmental standards

The benefits of benchmarking of service performance and costs compared with water utilities interstate and intrastate are limited due to different markets, different regional conditions and different operating environments and, thus, conclusions based on this data should be interpreted with caution.

In view of the wide differences, the comparative analysis herein is restricted to six major urban water and wastewater service providers. The following providers were chosen because they have sufficiently similar characteristics to be reasonably useful comparators:

- Sydney Water – the largest public water corporation in Australia providing water and wastewater services for Sydney, Illawarra and the Blue Mountains
- ActewAGL – a public corporation providing water, wastewater and electricity services for Canberra
- Brisbane Water – a public corporation providing water and wastewater services for Brisbane and bulk water for five neighbouring regional councils
- Water Corporation – a public corporation providing water and wastewater services for the whole of Western Australia. Only its metropolitan Perth operations are reported in WSAA*facts*
- Melbourne Consolidated – a 'composite' made up of the wholesale business of Melbourne Water and the three retail businesses, City West Water, South East Water and Yarra Valley Water collectively providing water and wastewater services for Melbourne
- Power and Water – a public corporation providing water, wastewater and electricity for the greater Darwin region and in centres throughout the Northern Territory including Katherine, Tennant Creek, Alice Springs and Yulara.

These comparators are all public corporations serving urban water customers in metropolitan or State/Territory cities or major regional centres in rural areas.

Metropolitan water — service standards

The performance indicators chosen from WSAA*facts* for assessment of performance in the metropolitan area are:

- Number of Water Main Breaks per 100 km of Main
- Average Duration of an Unplanned Water Supply Interruption (hr)
- Number of Water Quality Complaints per 1,000 Properties
- Average Connect Time to a Telephone Operator
- Infrastructure Leakage Index

System Performance

Water main breaks

Table 24 outlines the number of water main breaks as a proportion of the total length of water main serviced by the provider.

Table 24: Water Main Breaks per 100 km of Main

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Water Corporation	10.1	11.2	12.3	12.6	12.9	13.2
Power & Water	6.8	8.4	9.1	20.3	24.5	20.7
SA Water	27.3	30.9	24.6	24.5	22.1	24.2
ActewAGL	19.9	11.2	11.7	18.4	18.8	26.3
South East Water	25.1	24.1	26.4	26.0	21.1	29.0
Brisbane Water	34.0	32.2	35.9	37.5	38.3	38.5
Sydney Water	49.1	43.7	42.3	37.7	37.5	50.7
Yarra Valley Water	47.2	42.0	42.1	55.9	40.7	56.2
City West Water	109.5	77.0	70.1	58.3	56.0	102.9
Average all WSAA companies	**33.7**	**29.0**	**28.1**	**25.9**	**25.1**	**31.9**

SA Water's results have remained similar throughout the reporting period. In most years performance was better than the average number of breaks per 100 km of water main for all WSAA companies. SA Water's results for 2003-04 were 23.4 water main breaks per 100 km of main, a marginal improvement on last year's results.

Water Corporation has the lowest rate for main breaks. Water main failure rates are influenced by many factors. Soil type, pipe material type and quality of manufacture, how well the pipe was laid, the depth of cover, traffic loading, pH of water supplied, pipe diameter and pipe age are all factors that can affect pipe performance. Perth's sandy soils are the prime reason for the low failure rate as external corrosion is much less significant, and seasonal soil movement is not an issue. By contrast, most of Adelaide's water mains have been laid in clay soils most of which exhibit seasonal movement to varying degrees and are more aggressive to ferrous pipes than sandy soils.

Duration of an unplanned water supply interruption

Table 25 outlines the average length of time (hours) a customer is without potable water supply each year.

Table 25: Average Duration of an Unplanned Water Supply Interruption (hr)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Power & Water	2.0	n.a.	1.5	1.0	1.0	1.0
Yarra Valley Water	1.6	1.6	1.5	1.4	1.3	1.5
ActewAGL	n.a.	2.0	1.9	1.9	1.7	1.6
City West Water	2.1	1.8	2.0	2.0	1.8	1.8
South East Water	2.0	2.0	2.2	2.0	2.0	1.8
Sydney Water	2.2	2.0	2.1	2.2	2.4	2.3
Water Corporation	n.a.	n.a.	2.1	2.0	2.0	2.3
Brisbane Water	2.7	2.9	2.7	2.6	2.7	2.6
SA Water	n.a.	2.3	2.2	2.8	4.3	3.8
Average all WSAA companies	**2.1**	**2.1**	**2.2**	**2.2**	**2.2**	**2.1**

SA Water's performance was near the average of all WSAA companies until 2001-02 when the average duration increased sharply. However, results for 2003-04 were 3.2 hours which represents a significant improvement on last year's results.

Customer Service

Water quality complaints

Table 26 provides information on the number of complaints regarding discolouration, taste, odour, stained washing, illness etc. Complaints relating to service interruption, adequacy of service, restrictions, pressure etc are not included.

Table 26: Number of Water Quality Complaints per 1,000 properties

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
City West Water	2.0	2.5	2.0	1.9	1.8	1.1
SA Water	2.4	2.2	2.3	2.4	1.7	1.6
Power & Water	0.5	4.7	3.5	5.4	4.6	1.7
ActewAGL	n.a.	3.1	2.0	2.3	2.8	1.8
Sydney Water	n.a.	n.a.	4.8	3.2	2.4	2.0
South East Water	4.0	3.8	3.8	3.4	3.4	2.8
Brisbane Water	n.a.	9.7	12.1	8.1	4.4	3.3
Yarra Valley Water	n.a.	4.5	4.1	5.4	5.5	5.1
Water Corporation	n.a.	n.a.	n.a.	18.4	16.5	18.6
Average all WSAA companies	**4.8**	**14.5**	**6.5**	**7.9**	**5.9**	**4.7**

SA Water's results show a gradual improvement in the number of complaints over the reporting period and, with the exception of 1997-98, SA Water has consistently been the best or next best performer in this category.

SA Water's results have consistently been better than average of all WSAA companies, despite the long-standing views about Adelaide's poor water quality.

SA Water's result for 2003-04 was 1.1 complaints per 1,000 properties, a further improvement from the previous year.

Connect time to a telephone operator

Table 27 reports the mean time (in seconds) a customer on the telephone has to wait to be connected to an operator.

Table 27: Average Connect Time to a Telephone Operator (seconds)

	1999-00	2000-01	2001-02	2002-03
Water Corporation	15.0	13.8	15.6	18.6
Brisbane Water	n.a.	n.a.	n.a.	21.0
SA Water	19.8	19.2	18.0	27.0
Yarra Valley Water	n.a.	n.a.	30.6	28.8
South East Water	n.a.	n.a.	30.0	35.8
Hunter Water	n.a.	n.a.	43.0	49.0
City West Water	n.a.	183	76.2	49.8
Average all WSAA companies	**17.4**	**72.0**	**29.2**	**32.3**

Limited data is available from many companies for this indicator and WSAA*facts* presents data for only the last four years. ActewAGL and Power & Water have not recorded this performance measure, so data from Hunter Water has been included for comparison purposes. SA Water and Water Corporation are the only companies to report for all four years.

SA Water's results, which show a gradual improvement until 2002-03, are in the median range of the selected companies. Until that year the results were very close to the best and were marginally better than the average for all WSAA companies.

The increase in average connect time last year reflects the significantly greater number of calls arising from the introduction of Government policy initiatives related to the drought, such as water restrictions and the River Murray levy.

The result for 2003-04 was 26.0, an improvement on the previous year.

Infrastructure Leakage Index (ILI)

Another factor in assessing performance is to examine the efficiency of the distribution network. Losses in the water distribution network through leakage and other means represent a financial loss to the business and can result in unnecessary

operating costs. Ultimately most losses result in water being extracted and harvested from the environment and not being consumed.

Table 28 outlines a new system performance indicator, ILI, that creates an index for water losses by dividing current annual real water losses by unavoidable annual real water losses. The lower the index the more efficient water system management. An ILI of less than 2.0 is considered to be good practice.

Table 28: Infrastructure Leakage Index

	2001-02	2002-03
SA Water	1.2	1.2
Yarra Valley Water	1.3	1.3
South East Water	1.5	1.5
Water Corporation	0.4	1.7
City West Water	1.6	1.9
Brisbane Water	2.2	2.0
Sydney Water	2.6	2.7
Power and Water	4.5	5.9
Average all WSAA companies	**1.8**	**1.9**

SA Water's result for 2003-04 remained at 1.2. The ILI of 1.2 relates to approximately 7% water losses for the Adelaide system. The ILI is determined having regard to the length of pipe, number of connections, water pressure and accounts for meter errors. The ILI allows different systems to be benchmarked. An ILI of 1.2 is in the range benchmarked as "Excellent" and one of the best figures for Australian water authorities.

Until about 5 years ago, estimates for "unaccounted for" water were in the vicinity of 14-16%, which comprised inaccuracies from customer meters (8-9%) and the 6-7% system losses. Since then SA Water has undertaken a major customer meter replacement program that is almost complete. The replaced meters are of a far greater accuracy and therefore have reduced overall "unaccounted for" water.

SA Water's performance has been consistent over the two years and has been consistently better than the average of all the compared companies and well below the benchmark of 2.0 representing efficient operations.

Metropolitan wastewater — service standards

The performance indicators chosen from WSAA*facts* for assessment of performance in the metropolitan area are:

- Average Wastewater Break/Choke Repair Time (hr)
- Percent of Wastewater Treated to a Tertiary Level
- Percent of Water Recycled

- Percent of Bio-solids Reused
- Number of Wastewater Reticulation Main Breaks and Chokes per 1,000 Properties
- Number of Property Connection Sewer Breaks & Chokes per 1,000 Properties
- Number of Wastewater Overflows per 100 km
- Odour Complaints per 1,000 Properties

System performance

Wastewater break or choke repair time

Table 29 presents the average time taken (in hours) to repair a reticulation main, from the time of arrival on site to restoration of full normal wastewater service. This does not include repair times relating to chokes, bursts and leaks in the property connection sewer.

Table 29: Average Wastewater Break/Choke Repair Time (hr)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
ActewAGL	n.a.	n.a.	n.a.	n.a.	0.6	0.5
SA Water	n.a.	n.a.	1.0	1.2	0.9	1.0
Sydney Water	n.a.	2.0	1.5	1.6	1.2	1.2
Power & Water	n.a.	n.a.	1.6	1.9	2.0	1.5
Yarra Valley Water	n.a.	n.a.	n.a.	n.a.	1.3	1.7
South East Water	2.5	2.8	2.4	2.1	2.1	2.2
Brisbane Water	n.a.	2.5	2.6	2.6	2.8	2.7
City West Water	n.a.	4.2	4.0	4.2	2.0	3.0
Water Corporation	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average all WSAA companies	**2.3**	**2.0**	**1.8**	**2.2**	**1.8**	**1.8**

SA Water's Customer Service Charter includes a target of responding to sewerage blockages within 2 hours and generally within 1 hour.

As with the number of property connection main breaks many companies have not reported data for this indicator and SA Water only commenced reporting in 1999-00. From the limited data available, SA Water's results have been consistently best or next best of the selected companies and better than the average of all WSAA companies.

The result for 2003-04 continued this trend with an average of 0.85 hrs for the repair of breaks and chokes.

Service delivery – treatment level

Table 30 provides data of the percentage of wastewater that is treated to the tertiary level. This is derived by dividing the total volume of collected wastewater, which is treated to the tertiary level, by the total volume of wastewater collected.

Table 30: Percent of Wastewater Treated to a Tertiary Level

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Yarra Valley Water	100	100	100	100	100	100
ActewAGL	100	100	100	100	100	100
SA Water	0	0	0	17	54	81
Brisbane Water	0	37	36	53	67	76
Water Corporation	0	0	0	0	14	40
Sydney Water	14	11	19	12	17	22
South East Water	2	7	13	12	6	8
Power & Water	0	0	1	1	2	1

The degree to which wastewater is required to be treated is an important cost driver. There are significant cost differences in meeting primary, secondary and tertiary levels of treatment with respect to both operating and capital expenditure.

Typically tertiary treatment, which includes biological nutrient removal plants, chemical dosing, enhanced pond treatment, reverse osmosis and filtration systems, is the most complex and sophisticated treatment level and, therefore, the most expensive to operate.

It can be assumed that where tertiary treatment is undertaken the balance of treatment will be done at either the primary or secondary level. For example, in 2002-03, 81% of SA Water wastewater was treated to tertiary level. It can therefore be assumed that the remaining 19% of all wastewater collected was treated at primary or secondary level. Data is available to compare each level of treatment but for this review only the tertiary level is compared to provide a view of the extent of treatment costs faced by SA Water.

Of the selected companies only Yarra Valley Water and ActewAGL treat more wastewater at the tertiary level than SA Water. Until and including 1999-00, SA Water treated all (100%) of its wastewater in the metropolitan area at the secondary level. Since then and following requirements of the Environment Protection Authority, SA Water has gradually increased the proportion of treatment at tertiary level. This has increased treatment costs.

The results for 2003-04 showed a further increase (to 91%) in the percentage of wastewater treated to the tertiary level.

Water recycled

Table 31 provides the percentage of all wastewater collected that is treated and actually used (eg recycled) by either the water business itself or a business supplied by the water business. This is an indicator of efficiency in the provision of wastewater services and environmental performance.

Table 31: Percent of Water Recycled

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Water Corporation	4.9	4.4	11.4	15.9	15.1	19.2
Brisbane Water	n.a.	1.5	2.0	2.0	5.7	10.9
SA Water	4.0	5.0	4.6	4.6	5.5	7.3
City West Water	0.8	3.2	3.2	2.9	3.8	4.1
South East Water	0.4	0.4	0.7	2.6	5.0	3.5
Yarra Valley Water	4.0	2.4	2.2	4.5	3.9	3.5
Hunter Water	2.4	2.4	2.0	1.9	2.2	2.6
Average all WSAA companies	**1.2**	**1.1**	**1.4**	**1.9**	**1.9**	**2.4**

SA Water's results show a significant increase in the percentage of water recycled over the six years.

For the four years to 2002-03 SA Water has been the best performer of the selected companies and was well ahead of the average for all WSAA companies. The result for 2003-04 was 21.4%, which shows a continuing significant achievement in environmental performance.

Bio-solids Reused

Table 32 reports on the reuse of bio-solids, a major by-product of wastewater treatment. Bio-solids are the stabilised organic solids derived from wastewater treatment processes. Reuse involves managing bio-solids safely and sustainably to utilise their nutrient, energy, or other values. The dry weight of bio-solids reused may be greater than the dry weight of bio-solids produced if the business is also reusing existing stockpiles. This is both a significant efficiency and environmental performance measure.

Table 32: Percent of Bio-solids Reused

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
SA Water	48	67	168	154	158	144
ActewAGL Corporation	100	100	100	100	100	100
Sydney Water	99	99	97	99	99	100
Brisbane Water	7	40	40	72	100	100
Water Corporation	100	91	71	70	86	98
Melbourne Water	18	14	25	8	6	75
Power & Water	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

As the table shows, SA Water markedly increased the level of bio-solids reused from 1999-00 when it began to reuse from its stockpile. Of all WSAA companies SA Water is the only company that reuses product from its stockpile. This shows an efficient and sustainable approach to wastewater management. In addition to SA Water, three of the selected companies reuse all (100%) of their bio-solids.

The result for 2003-04 showed a continued use of the stockpile with 168% of bio-solids being re-used.

Wastewater Reticulation main breaks and chokes

Table 33 provides the number of wastewater reticulation main breaks and chokes as a proportion of the total number of properties serviced by the company. Reticulation mains are a network of pipes designed to collect sewage from individual households.

Table 33: Number of Wastewater Reticulation Main Breaks and Chokes per 1,000 Properties

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Power & Water	6.8	n.a.	n.a.	3.0	1.6	2.0
Water Corporation	4.0	3.7	4.1	3.8	3.5	3.8
Brisbane Water	5.0	5.1	3.8	6.2	5.8	5.3
SA Water	9.6	8.1	6.5	5.9	5.8	7.1
Sydney Water	n.a.	12.0	9.2	10.2	9.8	11.9
ActewAGL Corporation	39.9	24.2	24.2	25.1	22.8	26.5
Melbourne Consolid'd	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average all WSAA companies	**10.3**	**9.1**	**8.4**	**8.1**	**7.8**	**9.2**

SA Water's performance is around the median of the selected companies and has consistently been better than the average when compared with all the WSAA companies.

The increase in breaks and chokes in 2002-03 may be related to the drought, particularly in areas where tree roots are a major cause of these problems. It may be due to the sandy nature of its soils that Water Corporation does not appear to have been affected.

SA Water's performance has shown a consistent improvement over the reporting period until 2002-03 when performance of most companies deteriorated slightly. SA Water's result for 2003-04 was 7.0 wastewater reticulation main breaks and chokes per 1,000 properties.

Sewer breaks and chokes

Table 34 provides the number of breaks and chokes in the short sewer, which connects the reticulation main sewer to the customer sanitary drain.

Table 34: Number of Property Connection Sewer Breaks & Chokes per 1,000 Properties

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Brisbane Water	2.6	3.1	2.2	2.9	2.9	3.7
South East Water	5.0	7.1	6.3	5.5	4.7	6.4
ActewAGL Corporation	n.a.	113.2	110.8	96.5	10.0	11.7
City West Water	17.1	16.5	9.8	9.5	8.6	12.6
Yarra Valley Water	12.5	13.6	11.9	11.9	11	14.8
SA Water	43.7	39.6	35.1	32.1	31.5	35.1
Sydney Water	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Water Corporation	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average all WSAA companies	**16.2**	**22.2**	**18.5**	**15.0**	**9.4**	**10.0**

Not all companies report this data. SA Water's results for the period are variable and have been the poorest of all the selected companies for the two years to 2002-03 and have been consistently below the average of all WSAA companies for the reporting period. This matter is being pursued to understand the cause of this apparent under-performance. SA Water's result for 2003-04 was 36.0.

While SA Water has reported a greater number of sewer breaks and chokes than many other urban water bodies it is not clear whether this reflects poor performance. The level of reported chokes may be a result of completely different operating circumstances. For example, in some systems, the connection to the main is the responsibility of the householder and therefore is not reported in WSAA*facts*, eg Sydney Water and the Water Corporation.

Potential differences in operating circumstances currently being investigated with other water bodies are:

- Age of system

  Adelaide's wastewater system on average is older than those of most other cities as the decision to sewer the city and suburbs was made quite early in its development.

- The type of material used in construction

  A higher proportion of earthenware pipes are believed to have been used in Adelaide because manufacturers of these pipes were South Australian based and their products were used in order to support local industry. This occurred for many years after PVC was first introduced. Earthenware pipes, being shorter in length than PVC pipes, have more joints and therefore offer more opportunity for tree-root incursion. Earthenware pipes also have a greater propensity to crack in the highly reactive clay soils that exist in much of the Adelaide metropolitan area and in some country towns.

- Siting and location of system

  The majority (87%) of chokes are caused by tree roots. Rainfall, tree type and soil condition are all major factors in determining the extent and speed of root growth. Geographical analysis in metropolitan Adelaide has shown choke rates in the foothills may be three times those on the plains west of the city. The siting and location of the wastewater system is therefore relevant in the analysis of the number of chokes and breaks in the system.

- Preventative maintenance of mains only

  SA Water does not undertake preventative maintenance for property connections (preventative maintenance is undertaken for reticulation mains). While it is to be confirmed by the current investigation with other water bodies, SA Water understands most other authorities in Australia take a similar approach. It is therefore reasonable to conclude that the differences in the reported number of breaks and chokes may be more related to physical factors than operational practices.

- Pipe replacement

  The extent to which complaints are received from customers, along with financial considerations, drive the pipe replacement policy. The level of breaks and chokes per 1,000 properties is relatively stable, with the likelihood of breaks and chokes at less than 4%. Unless there is substantial customer dissatisfaction with the inconvenience associated with the interruptions in supply, it seems unnecessary to incur additional costs that would impact on charges.

SA Water has maintained a high level of customer satisfaction by adopting tight response times for choke and overflow attendance. Given very few customer complaints, it seems reasonable to assume the current policy achieves an acceptable trade-off between service level and costs.

Wastewater overflows

Table 35 reports on the incidence of untreated wastewater spills or discharges and escapes from the wastewater system (ie pumping stations, pipes, maintenance holes or designed overflow structures) to the external environment. It does not include overflows caused by a blockage in the property connection sewer or spills, discharges or overflows that escape to designed storages.

Table 35: Number of Wastewater Overflows per 100 km

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Melbourne Consolidt'd	n.a.	14.2	12.5	10.6	5.8	5.5
Water Corporation	n.a.	n.a.	9.3	9.1	9.7	10.4
SA Water	15.1	16.7	12.3	11.5	12.2	14.2
Brisbane Water	n.a.	23.8	11.7	29.0	16.0	19.5
Sydney Water	114	83.3	63.4	72.3	69.1	85.7
ActewAGL	n.a.	n.a.	n.a.	46	93.5	102.8
Average of all WSAA companies	**26.7**	**24.6**	**18.8**	**32.5**	**32.8**	**34.7**

SA Water's Customer Service Charter includes a target of responding as a matter of priority to advice of a sewerage overflow.

SA Water's results show a marginal improvement over the reporting period to 2002-03. They have consistently been in the low to mid range of the selected companies and well below the average for all WSAA companies.

Results for 2003-04 were 13.7, which is an improvement on the previous year.

Odour complaints

Table 36 outlines the number of odour complaints per 1,000 properties.

Table 36: Odour Complaints per 1,000 Properties

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
ActewAGL	n.a.	n.a.	n.a.	n.a.	0.0	0.1
South East Water	n.a.	n.a.	n.a.	n.a.	n.a.	0.2
Yarra Valley Water	0.4	0.4	0.3	0.2	0.2	0.2
City West Water	0.3	0.3	0.3	0.3	0.3	0.3
SA Water	0.7	0.8	0.3	0.8	0.7	0.8
Sydney Water	n.a.	0.6	0.5	0.7	0.9	1.1
Brisbane Water	0.8	1.0	1.0	0.4	1.2	1.1
Water Corporation	n.a.	n.a.	n.a.	1.4	1.6	1.6
Average all WSAA companies	**1.0**	**0.9**	**1.0**	**1.0**	**1.1**	**1.0**

This is an indicator of the degree of dissatisfaction in respect of odours from the wastewater system. SA Water's Customer Service Charter includes a target of investigating odour complaints and advising the customer within 24 hours or the following business day.

SA Water's results show little change over the reporting period except for a drop in 1999-00. SA Water's performance is in the mid range of the selected companies and has consistently been better than the average for all WSAA companies.

The result for 2003-04 was 0.7 odour complaints per 1,000 properties showing a marginal improvement on the previous year.

Appendix 7: Benchmarking of regional service standards

Introduction

While WSAA*facts* provides performance data for urban water bodies the Australian Water Association, for three years until 2001 and WSAA for one year prior, produced a similar report covering non-major urban water utilities (NMU) having between 10,000 and 50,000 assessments (or connected properties). The report, the *Performance Monitoring Report – Australian Non Major Urban Water Utilities*, covered 71 mid-sized water utilities in each State and Territory except the ACT.

Like WSAA*facts* this report promotes use of data for trends over time for a specific utility but cautions against the use of inter-utility comparisons due to "substantially different operating environments and underlying cost drivers" (AWA, 2002, p 4). Moreover, the differences in operating environments for country operations are more pronounced than in metropolitan areas.

Due to a withdrawal of funds from the Federal Government for the publication of this report, the 2000-01 report was the last edition. However, recognising the importance of this reporting, efforts are being made to reinstitute publication of the performance data in future.

As the last report contained data for only four years, and the most recent report is 3 years old, there is little scope to obtain credible trends from this specific data. Comparisons of performance, especially state-wide average results, are also made with data from the:

- *NSW Water Supply and Sewerage Performance Monitoring Report* produced by the NSW Ministry of Energy & Utilities (New South Wales Government, 2003). This report covers 126 local water utilities in NSW
- *Victorian Water Review,* a performance monitoring report published by the Victorian Water Industry Association covering metropolitan Melbourne's retail water businesses and the bulk water supplier (Melbourne Water) and 15 regional urban water authorities (VWIA, 2003).

The NMU country analysis reports on three regional areas of SA Water, namely, Outer Adelaide, Whyalla, and Mt Gambier. Outer Adelaide covers the Barossa and Fleurieu regional areas including the western side of the Mt Lofty Ranges and Kangaroo Island. The analysis provides data for four years for these regions. Comparisons with four other water bodies, Ipswich (Qld), Shoalhaven and Orange (NSW) and Western Water (Vic) are made. These utilities were selected because they have a similar number of connections and data is generally available for most indicators.

To obtain a benchmark with a broader selection of wastewater bodies, either the weighted average of all participants in the NMU report, the statewide average from the NSW report or a similar average in the Victorian report is used.

It is likely that the bases for each of these averages are not consistent.

Overall conclusions based on benchmarking of service performance for regional areas are tentative, pending more recent data.

Regional water — service standards

The performance indicators chosen for assessment in the country area are:

- Average Duration of an Unplanned Water Supply Interruption (hr)
- Number of Water Main Breaks per 100 km of Main
- Average Customer Outage Time (Unplanned) per Property*
- Customer Interruption (Unplanned) per 1,000 Properties.

Duration of unplanned interruption

Table 37 indicates the length of time (in hours) a customer is without potable water supply.

Table 37: Average Duration of Unplanned Interruption (hr)

	1997-98	1998-99	1999-2000	2000-01
Mt Gambier	3.8	4.2	1.5	1.1
Outer Adelaide	1.7	4.2	4.2	3.2
Whyalla	1.6	3.7	3.8	2.7
Ipswich	5.0	4.2	2.0	1.7
Shoalhaven	n.a.	3.0	3.0	3.0
Orange	4.0	4.0	3.5	3.4
Western Water	1.1	1.2	1.2	1.1
Vic Regional Average*	**n.a.**	**1.8**	**2.2**	**2.2**

**For regional bodies with less than 35,000 customer connections*

Results for Mt Gambier show a significant improvement for the two years since 1998-99. Results for Outer Adelaide and Whyalla have been variable.

The length of time of an unplanned interruption for water supply services in the Outer Adelaide region is typically greater than for Mt Gambier, and to a lesser extent Whyalla. This is due to its:

- geographical spread (Barossa, Fleurieu, Adelaide Hills and Kangaroo Island)
- vastly greater length of mains (eg more than 20 times Mt Gambier's and 4 times Whyalla's)
- significantly smaller number of properties served per 100 km of main (eg 12 compared to 49 for Mt Gambier and 44 for Whyalla).

No averages are available from the NMU report so the Victorian statewide average has been included. In 2000-01 Mt Gambier would appear to be well below the average, with Whyalla marginally above and Outer Adelaide higher. This possibly reflects the greater distances involved.

Number of water main breaks per 100 km of main

Table 38 outlines the number of water main breaks as a proportion of the total length of water main serviced by the company.

Table 38: Number of Water Main Breaks per 100 km of Main

	1997-98	1998-99	1999-2000	2000-01
Mt Gambier	2	2	3	14
Outer Adelaide	7	10	10	13
Whyalla	8	10	13	20
Ipswich	2	21	23	18
Shoalhaven	11	14	17	11
Orange	25	15	12	14
Western Water	n.a.	18	21	17
Vic Regional Average*	**n.a.**	**28**	**23**	**22**

**For regional bodies with greater than 35,000 customer connections*

Results for Mt Gambier were very low for the initial recordings, but increased markedly in 2000-01. Results for Outer Adelaide and Whyalla have been variable.

The NMU report recorded an average of 16.2 breaks per 100 km for 2000-01. For that year, both Mt Gambier and Outer Adelaide would appear to be better than the average while Whyalla was marginally above. In 2000-01 each SA Water region would appear to be better than the Victorian statewide average.

Customer outage time (unplanned) per property (minutes)

Table 39 reports on the amount of time (minutes) a property is without water supply services.

Table 39: Average Customer Outage Time (Unplanned) per Property (mins)

	1997-98	1998-99	1999-2000	2000-01
Mt Gambier	n.a.	n.a.	n.a.	n.a.
Outer Adelaide	n.a.	5.5	3.0	2.5
Whyalla	1.0	13.0	13.5	7.5
Ipswich	n.a.	19.0	19.5	9.0
Shoalhaven	n.a.	n.a.	n.a.	n.a.
Western Water	8.0	7.0	11.0	9.5
Vic Regional Average*	**n.a.**	**n.a.**	**n.a.**	**15.0**

**For regional bodies with greater than 35,000 customer connections*

The results for Outer Adelaide show general improvement over the three years of the reporting period. Whyalla's results are variable.

The results for both SA Water's regions reported would appear to be either better than, or within the scope of, the two compared water bodies.

Both regions results for 2000-01 would appear to be better than the Victorian statewide average.

Unplanned customer interruptions per 1,000 properties

Table 40 reports the number of customer interruptions as a proportion of the number of properties.

Table 40: Customer Interruptions (Unplanned) per 1,000 Properties

	1997-98	1998-99	1999-2000	2000-01
Mt Gambier	<10	<10	<10	<10
Outer Adelaide	< 10	<10	<10	<10
Whyalla	10	60	58	40
Ipswich	60	n.a.	160	85
Shoalhaven	<10	<10	<10	<10
Western Water	125	110	150	135
Vic Regional Average*	**n.a.**	**116**	**129**	**121**

**For regional bodies with greater than 35,000 customer connections*

Results for Mt Gambier and Outer Adelaide continued at a very low level throughout the reporting period. Whyalla's results showed gradual improvement from the second year.

Results for two of SA Water's regions would appear to be equal to one or better than two of the comparable water providers.

All SA Water regions results would appear to be significantly and consistently better than the Victorian average.

Regional wastewater – service standards

The following performance indicators have been selected for comparison:

- Average duration of interruption (hr)[12]
- Number of sewer chokes per 100 km of main
- Number of sewage overflows per 1,000 properties
- Number of sewage overflows per 100 km of main
- Average customer outage time (unplanned) per property (hours)*
- Odour complaints.

Data is predominately from the NMU report, but where useful data is available from the other reports it is included.

Duration of unplanned interruption

Table 41 indicates the length of time (in hours) a customer is without wastewater services.

Table 41: Average Duration of Unplanned Interruption (hr)

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	1.1	1.6	2.1	1.5
Outer Adelaide	2.4	2.1	2.6	2.1
Whyalla	1.1	1.2	2.1	1.3
Ipswich	3.0	3.0	2.0	n.a.
Shoalhaven	n.a.	3.0	2.0	n.a.
Orange	n.a.	0.7	2.0	n.a.
Western Water	1.6	1.1	1.1	1.5
NSW Statewide Average	**n.a.**	**n.a.**	**n.a.**	**2.0**

The average duration of an unplanned wastewater interruption for each of the three SA Water regions remained relatively constant over the reporting period.

Because of a lack of data for the comparable wastewater providers in the last year, no comparisons are made.

Number of sewer chokes per 100 km of main

Table 42 reports the number of wastewater chokes as a proportion of the total length of main serviced by the company.

Table 42: Number of Sewer Chokes per 100 km of Main

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	4	1	7	12
Outer Adelaide	17	8	9	7
Whyalla	11	18	19	19
Ipswich	18	15	13	115
Shoalhaven	33	25	28	27
Orange	n.a.	189	n.a.	76
Western Water	8	10	35	35
Weighted Average for all NMUs	**47**	**46**	**36**	**38**
NSW Statewide Average	**n.a.**	**n.a.**	**n.a.**	**36**

The results from the SA Water regions would appear to be better than each of the selected wastewater providers as well as the weighted average for all NMU's and the NSW statewide average.

Number of sewage overflows per 1,000 properties

Table 43 reports the number of wastewater overflows as a proportion of properties serviced by the company.

Table 43: Number of Sewage Overflows per 1,000 Properties

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	1.2	1.5	2.2	2.7
Outer Adelaide	5.4	3.4	1.8	3.6
Whyalla	1.6	1.6	0.9	1.4
Ipswich	0.5	0.4	0.3	0.2
Shoalhaven	1.3	1.3	1.0	1.2
Orange	n.a.	n.a.	11.0	n.a.
Western Water	1.0	n.a.	0.6	1.0
Weighted Average for all NMUs	**1.5**	**1.7**	**2.7**	**2.3**

Mt Gambier and Whyalla would appear to have reported better results than the weighted average of all NMU's for most years. Outer Adelaide would appear to be below average. No data is available for Victoria.

Number of sewage overflows per 100 km of main

Table 44 provides the number of sewer overflows from utility assets, including burst rising mains. It excludes overflows from malfunction of internal drains.

Table 44: Number of Sewage Overflows per 100 km of Main

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	4.6	5.9	8.8	10.8
Outer Adelaide	20.3	11.9	6.2	12.2
Whyalla	9.8	9.8	5.5	6.5
Ipswich	1.8	1.3	1.0	0.6
Shoalhaven	4.7	4.8	3.9	4.5
Orange	n.a.	n.a.	43.0	n.a.
Western Water	4.9	n.a.	2.6	4.9
Weighted Average for all NMUs	**6.3**	**7.1**	**10.8**	**9.2**
Victorian Water Review *	**n.a.**	**n.a.**	**n.a.**	**8.6**
NSW state-wide average	**n.a.**	**n.a.**	**n.a.**	**4.0**

* *for all regional bodies with less than 35,000 customer connections*

In 2000-01 only Whyalla's results would appear to be better than the weighted average of NMU's and the statewide result from NSW.

Customer outage time

Table 45 reports the amount of time (in minutes) a property is without service.

Table 45: Average Customer Outage Time (Unplanned) per Property (mins)

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	2.2	1.9	2.3	2.7
Outer Adelaide	3.3	1.6	3.3	7.1
Whyalla	3.2	2.9	5.3	4.8
Western Water	1.4	1.0	0.5	1.0
Weighted Average for all NMUs	**n.a.**	**n.a.**	**n.a.**	**n.a.**
NSW Report	**n.a.**	**n.a.**	**n.a.**	**3**

Results for Mt Gambier over the period remained relatively static. The Outer Adelaide results were also static for the first three years however increased significantly in the final year. Results for Whyalla were variable throughout the reporting period.

Of the comparable wastewater providers, only Western Water provided data for this measure, which would appear to be better than each of SA Water's regions. Only Mt Gambier would appear to have achieved better than the NSW statewide average in 2000-01.

Odour complaints per 1,000 properties

Table 46 reports the number of customer complaints regarding odour per 1,000 properties. Usually complaints concern odours from trunk mains and pumping stations.

Table 46: Number of Odour Complaints per 1,000 Properties

	1997-98	1998-99	1999-00	2000-01
Mt Gambier	n.a.	n.a.	n.a.	n.a.
Outer Adelaide	n.a.	0.2	n.a.	n.a.
Whyalla	n.a.	0.2	n.a.	n.a.
Ipswich	0.2	0.2	0.5	0.1
Shoalhaven	0.1	0.3	0.7	1.5
Orange	0.9	0.3	0.1	0.6
Western Water	n.a.	n.a.	0.5	n.a.
Weighted Average for all NMUs	**0.9**	**0.8**	**0.8**	**1.0**
NSW state-wide average	**n.a.**	**n.a.**	**n.a.**	**1.1**

Almost no data has been recorded for the SA Water regions for this performance measure. The indicator is an important customer satisfaction measure and is being developed for future reporting.

Appendix 8: Benchmarking of metropolitan business costs

Metropolitan water — business costs

This appendix presents information regarding the benchmarking of metropolitan business costs and cost drivers for SA Water, using WSAA*facts* and internal SA Water data.

The benefits of cost comparisons of water utilities interstate and intrastate are limited due to different markets, different regional conditions and different operating environments and, thus, can only provide broad indications of performance (refer to Appendix 6 for discussion).

Total cost per property

Table 47 outlines the real total cost per property for water service providers, based on WSAA*facts* 2003, for the period 1997-98 to 2002-03.

Table 47: Total Cost per Property for Water Supply Services (in 2002-03 dollars)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Melbourne Consol	380.21	376.17	359.2	350.19	351.33	360.36
SA Water	450.40	447.80	438.59	417.29	403.84	418.84
Brisbane Water	550.79	462.15	494.99	477.02	460.08	437.01
Water Corporation	464.55	457.99	455.61	447.35	447.69	443.80
Sydney Water	n.a.	427.1	501.42	479.88	457.17	452.43
ActewAGL	528.98	488.49	448.76	450.23	474.86	469.56
Power & Water	1,072.05	1,019.11	1,031.59	990.48	743.24	844.13
Average all WSAA companies	**478.50**	**453.23**	**448.32**	**432.52**	**422.70**	**440.98**

SA Water's total costs per property for water supply services are consistently either 2nd or 3rd lowest and below the average of all WSAA companies. SA Water's results show a marginal improvement (ie reduced cost) in performance over the reporting period.

Although WSAA*facts* 2004 will not be published until December 2004, SA Water's results for 2003-04 were $416.62 (in nominal terms).

Operating cost per property[1.]

Table 48 outlines the real operating cost per property for water service providers, based on WSAA*facts* 2003, for the period 1997-98 to 2002-03.

Table 48: Operating Cost per Property for Water Supply Services (in 2002-03 dollars)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Melbourne Consol.	114.39	111.20	102.06	100.22	102.56	114.66
Water Corporation	172.27	164.29	153.28	148.89	149.63	144.94
SA Water	168.86	179.65	173.06	172.30	158.92	173.74
Brisbane Water	183.20	195.60	194.46	197.52	209.72	187.57
Sydney Water	-	223.40	282.23	265.02	229.11	239.44
ActewAGL	264.46	230.83	198.19	219.54	254.33	257.68
Power and Water	572.45	372.80	528.42	385.07	279.69	357.54
Average all WSAA companies	**208.17**	**187.52**	**193.41**	**181.46**	**189.86**	**211.23**

The operating cost per property of SA Water is 3rd lowest of the seven selected companies for the six-year reporting period and is below the average (typically less than 40%) of all 27 WSAA companies reported. The least cost water companies are in Melbourne, which have substantially better quality source water supplies that require no filtration.

In the case of SA Water, the largest variable for this indicator is the cost of electricity associated with pumping water from relatively low lying reservoirs as well as to and from treatment plants. Although WSAA*facts* 2004 will not be published until December 2004, data for 2003-04 shows that operating costs per property for water supply services decreased to $165.93 in nominal terms. This is primarily due to reduced electricity costs associated with reduced pumping.

Whilst SA Water's real operating cost increased from $169 to $174 per property in real terms over the 6 years to 2002-03, it should be recognised that climatic variations and other factors impose significantly differing costs from year to year.

[1.] WSAA*facts* Indicator Guidelines require that operating cost should, where possible or material, include the following:

- charges for bulk treatment/transfer of wastewater;
- salaries and wages and associated overheads;
- materials/chemicals/energy;
- contracts;
- accommodation; and
- all other operating costs that would normally be reported.

Operating costs should exclude all non-core business operating costs.
Total costs also include provision for depreciation and a 4% return on the written down replacement costs of assets.

Metropolitan wastewater — business costs

Total cost per property

Table 49 outlines the total costs per property for providing wastewater services in real terms.

Table 49: Total Cost per Property for Wastewater Supply Services (in 2002-03 dollars)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Melbourne Consol.	510.03	495.64	455.73	428.85	421.28	395.05
SA Water	366.07	354.85	376.84		364.84	355.53
Water Corporation	565.74	425.29	435.5	408.72	443.14	429.47
Brisbane Water	619.4	530.46	472.33	458.97	450.83	449.37
ActewAGL		527.43	525.5	491.21	561.12	579.78
Sydney Water	636.94	705.64	773.15	631.32	486.62	545.21
Power and Water	629.54	617.92	615.91	579.36	590.67	589.75
Average all WSAA companies	**554.62**	**522.46**	**522.14**	**478.62**	**474.07**	**477.74**

SA Water's total costs of providing wastewater services are consistently the lowest of all the selected companies and consequently well (66-77%) below the average of all WSAA companies.

Operating cost per property

Table 50 outlines the operating cost per property for the provision of wastewater services in real terms.

Table 50: Operating Cost per Property for Wastewater Services (in 2002-03 dollars)

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03
Melbourne Consol.	143.14	135.96	117.62	110.28	106.93	100.07
SA Water	108.81	106.32	126.44		118.44	120.02
Water Corporation	160.85	150.02	153.20	141.25	139.95	143.33
Brisbane Water	125.82	140.64	148.94	132.55	176.84	186.31
ActewAGL	353.94	284.01	232.68	236.18	249.70	254.91
Sydney Water		271.81	263.23	233.21	270.92	260.69
Power and Water	383.72	340.85	542.03	311.36	270.86	335.16
Average all WSAA companies	**208.17**	**187.52**	**193.41**	**181.46**	**189.86**	**211.23**

Table 50 indicates that the operating costs of SA Water have been either lowest or 2nd lowest of the seven selected companies and substantially (52-65%) below the average of all 27 WSAA companies reported. SA Water's costs increased from $109 to $120 per property in real terms over the 6 years to 2002-03. This relates to increased environmental standards and other factors.

WSAA*facts* 2004 will not be published until December 2004. However, preliminary data for 2003-04 indicates that operating costs per property for wastewater services were $131.88 in nominal terms. The increase in costs for 2003-04 was caused by:

- implementation of the Environmental Improvement Program: This involved major upgrades of wastewater treatment plants at Glenelg and Christies Beach and upgrading sludge handling facilities at Bolivar. These necessitated increased costs of operation (including electricity costs)
- higher overall electricity charges
- higher electricity charges incurred at Bolivar Treatment Plant, where the electricity generating turbine was off-line for almost 50% of 2003-04 due to the need to undertake essential maintenance. In the previous three years, turbine availability was approximately 80%. In 1999-00 turbine availability was approximately 25%, again due to the need to undertake essential maintenance.

Appendix 9: Benchmarking of regional business costs

Introduction

Benchmarking of regional business costs is based on three reports, as follows:

- *Performance Monitoring Report – Australian Non Major Urban Water Utilities*, which covered 71 mid-sized water utilities in each State and Territory except the ACT
- *NSW Water Supply and Sewerage Performance Monitoring Report* produced by the NSW Ministry of Energy & Utilities (NSW Govt, 2003). This inaugural report covers 126 local water utilities in NSW
- *Victorian Water Review,* a performance monitoring report published by the Victorian Water Industry Association covering metropolitan Melbourne's retail water businesses and the bulk water supplier (Melbourne Water) and 15 regional urban water authorities (VWIA, 2003).

Conclusions based on benchmarking of regional business costs are tentative, pending more recent data.

Regional water — business costs

Operating cost per property

Table 51 outlines the operating cost per property of providing water services in three SA water regions, the four selected inter-state utilities, and available statewide averages.

Table 51: Operating Costs per Property

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Mt Gambier	107	117	117	83	72	68	61
Outer Adelaide	153	181	180	250	222	246	247
Whyalla	444	466	498	466	443	506	463
Ipswich	374	286	264	297	n.a.	n.a.	n.a.
Shoalhaven	170	170	165	143	n.a.	n.a.	n.a.
Orange	198	231	187	209	n.a.	n.a.	n.a.
Western Water	220	192	181	291	n.a.	n.a.	n.a.
Vic Regional Average*	**n.a.**	**245**	**254**	**241**	**233**	**261**	**n.a.**
NSW Statewide Average	**n.a.**	**n.a.**	**n.a.**	**231**	**n.a.**	**n.a.**	**n.a.**

**For regional bodies with greater than 35,000 customer connections*

Of the 71 NMU's in the 2001 *Performance Monitoring Report – Australian Non Major Urban Water Utilities*, the operating cost per property for water services in Mt Gambier would appear to be the lowest (approximately $80 per property) in 2000-01. For Outer Adelaide and Whyalla the comparable result was approximately $280 and

$475 respectively. The most expensive service provider would appear to be Kalgoorlie at $1,479 per property.

Mt Gambier's results would appear to be the best when compared with the selected water utilities and have shown a continuous improvement since 1998-99. Outer Adelaide's cost per property is competitive, although the results have increased significantly over the report period.

Whyalla's results have been variable. Whyalla's cost per property would appear to be significantly higher than each of the compared water utilities, largely because of the significant cost of pumping water from the Murray and the associated costs of maintenance of the pipelines.

The results from Mt Gambier and Outer Adelaide would appear to be consistently better than the Victorian regional average for the report period, while Whyalla's results would appear to be consistently higher.

Operating cost per megalitre

Table 52 outlines the operating cost per megalitre of providing water services in three SA Water regions, the four selected inter-state utilities, and available statewide averages.

Table 52: Water Operating Costs per ML

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Mt Gambier	326	339	340	230	214	221	211
Outer Adelaide	395	412	442	595	493	483	627
Whyalla	623	633	671	650	627	697	511
Ipswich	649	561	539	480	n.a.	n.a.	n.a.
Shoalhaven	429	462	385	451	n.a.	n.a.	n.a.
Orange	385	462	451	386	n.a.	n.a.	n.a.
Western Water	550	638	538	858	n.a.	n.a.	n.a.
Vic Regional. Average	**n.a.**	**438**	**473**	**443**	**431**	**501**	**n.a.**
NSW State-wide Average	**n.a.**	**n.a.**	**n.a.**	**660**	**n.a.**	**n.a.**	**n.a.**

Mt Gambier's operating cost per ML has improved over the reporting period, although Outer Adelaide's operating cost per ML has increased significantly. Whyalla's results had been increasing until 2002-03 when costs decreased significantly.

Mt Gambier's results would appear to be the best when compared with the selected water utilities and Outer Adelaide was competitive until 2000-01. Whyalla's costs would appear to be significantly higher than the each of the compared water utilities except Western Water in the last year of recorded data.

The results from Mt Gambier would appear to be consistently better than the Victorian regional average. Outer Adelaide's results would appear to be better than the Victorian average for the first two years, while Whyalla's results would appear to be consistently higher. However, when compared with the NSW State-wide average only Whyalla's costs would appear to be higher.

Regional wastewater – business costs

Table 53 outlines the operating cost per property for the provision of wastewater operations for the three SA Water regions, the four selected inter-state utilities, and available statewide averages.

Table 53: Operating Cost of Wastewater per Property

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Mt Gambier	108	122	115	77	77	68	66
Outer Adelaide	151	162	161	154	157	158	191
Whyalla	34	38	38	35	38	34	43
Ipswich	286	264	264	286	n.a.	n.a.	n.a.
Shoalhaven	275	302	291	286	n.a.	n.a.	n.a.
Orange	132	198	154	170	n.a.	n.a.	n.a.
Western Water	176	170	192	192	n.a.	n.a.	n.a.
Vic Regional Average*	**n.a.**	**199**	**201**	**206**	**211**	**216**	**n.a.**
NSW State-wide Average#	**n.a.**	**n.a.**	**n.a.**	**240**	**n.a.**	**n.a.**	**n.a.**

**For regional bodies with greater than 35,000 customer connections*

#This is a state-wide median

Of the 71 utilities/systems benchmarked in the NMU report, the operating cost per property for wastewater services in Whyalla and Mt Gambier would appear to rank the lowest and second lowest per property in 2000-01 while Outer Adelaide would appear to rank 21st with $154.

The results for Mt Gambier have shown a continuing improvement in operating costs since 1998-99. Outer Adelaide's results have been variable with 2003-04 showing a significant rise.

Whyalla's results have been relatively static over the report period with a significant increase in 2003-04 (from a low base in 2002-03).

The operating costs for wastewater services and water supply services in the Outer Adelaide region are typically greater than the other two SA Water regions due to its:

- geographical spread (Barossa, Fleurieu, Adelaide Hills and Kangaroo Island)
- vastly greater length of mains (more than 4 times Whyalla's and 20 times Mt Gambier's)

- significantly smaller properties served per 100 km of main (12 compared to 49 for Mt Gambier and 44 for Whyalla)
- greater number of pumping stations (89 compared to 1 in Mt Gambier and 3 in Whyalla)
- greater number of service reservoirs (119 compared to 3 in Mt Gambier and 4 in Whyalla).

Outer Adelaide has a mix of small systems with poor economies of scale, an extensive asset base with proportionately smaller population served. It has greater water management issues including greater treatment costs because much of the area is part of the Mt Lofty Ranges Catchment.

When compared with the four selected interstate wastewater providers the results of each of the SA Water regions would appear to be consistently better than three of the four providers over the report period. Their results would also appear to be better than the Victorian and NSW averages.

Operating cost per megalitre of wastewater

Table 54 outlines the operating cost per ML for the provision of wastewater operations for the three SA Water regions, the four selected inter-state utilities, and the available statewide averages.

Table 54: Operating Costs per ML of Wastewater

	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Mt Gambier	608	647	598	409	419	359	337
Outer Adelaide	902	950	883	863	784	923	1,020
Whyalla	211	266	321	246	247	235	303
Ipswich	880	880	990	990	n.a.	n.a.	n.a.
Shoalhaven	1,579	n.a.	1,541	1,596	n.a.	n.a.	n.a.
Orange	385	385	330	385	n.a.	n.a.	n.a.
Western Water	715	715	902	902	n.a.	n.a.	n.a.
Vic Regional Average*	**n.a.**	**653**	**682**	**656**	**685**	**771**	**n.a.**
NSW State-wide Average	**n.a.**	**n.a.**	**n.a.**	**264**	**n.a.**	**n.a.**	**n.a.**

** for all regional bodies with greater than 35,000 customer connections*

Mt Gambier's results show a continuous improvement over the report period. Outer Adelaide's results saw gradual improvement until 2002-03 when costs began to increase. Whyalla's results are variable over the report period, with a significant increase last year.

Generally Mt Gambier and Whyalla would appear to have performed better than three of the four selected wastewater providers. Outer Adelaide's results would appear to be consistently higher than three of the providers.

The results of Mt Gambier and Whyalla would appear to be consistently lower that the Victorian average, while Outer Adelaide's results appeared higher. Comparisons cannot be made with NSW statewide averages.

Appendix 10: 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 = proportion of debt in capital structure
E = proportion 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, the debt margin and, in some cases, debt raising costs.

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 difference between the prevailing cost of debt and the risk-free rate of interest. It is estimated as the differential between the 20-day average of predicted yields of BBB+ rated debt with a ten-year term and the nominal risk-free rate.

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.

The equity beta (based on a particular gearing level and debt beta for a particular market, or industry) is delevered using Equation 1 to estimate an asset beta. The asset beta is then relevered to obtain an equity beta on the basis of the regulatory assumptions about the gearing level and debt beta, using a transformation of Equation 1.

Equation 1

$$\beta_a = \beta_e \frac{E}{V} + \beta_d \frac{D}{V}$$

where:

βa = asset beta
βe = equity beta
βd = debt beta

Gearing ratio

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

Asset Beta

The asset beta represents the responsiveness of the net operating cash flows of the business to the market, or the systematic risk of the asset, which is unaffected by gearing.

Debt Beta

The debt beta reflects the covariance of the holding period return of the particular asset (eg 5 or 10-year government bonds) with the market. It represents the systematic risk of debt and not the systematic risk of default (ACCC, 2004, page 155).

Other inputs to the Nominal Post-tax 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.

Inflation

Inflation, or the percentage increase in prices, is estimated on the basis of the difference between the 20-day average of the nominal and inflation indexed 10-year Government Bond yields.