# SYDNEY CATCHMENT AUTHORITY

## PRICES OF WATER SUPPLY SERVICES

**Mid term review of price path from 1 October 2000 to 30 June 2005**

INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

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### Mid Term review of price path from 1 October 2000 to 30 June 2005

**Review Report No Rev03-1**

**May 2003**

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**The Tribunal members for this review are:**

**Dr Thomas G Parry, Chairman**
**Mr James Cox, Full Time Member**
**Ms Cristina Cifuentes, Part Time Member**

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INDEPENDENT PRICING AND REGULATORY TRIBUNAL

OF NEW SOUTH WALES

# REPORT TO THE PREMIER ON THE MID TERM REVIEW OF MAXIMUM PRICES UNDER SECTION 11 (1) OF THE INDEPENDENT PRICING AND REGULATORY TRIBUNAL ACT, 1992

**Reference No:** 02/42

**Report:** Rev03-1

**Agency:** Sydney Catchment Authority

**Declaration of government monopoly services under Section 4 of the Act.**

The Government monopoly services were declared by the Independent Pricing and Regulatory Tribunal (Water Supply Services) Order 2000, made on 8February 2000 and published in Gazette No. 22 dated 11 February 2000 at page 816.

## SUMMARY

The Independent Pricing and Regulatory Tribunal of New South Wales (the Tribunal) has concluded its Mid Term Review of Sydney Catchment Authority's price path from 1 October 2000 to 30 June 2005. The purpose of the review was to determine whether the 2000 Determination remained appropriate in light of developments over the past three years. The possible alternatives arising from this process were either the introduction of a fresh Determination or the continuation of the existing price path.

Following careful consideration, the Tribunal has opted for the continuation of the existing price path to 30 June 2005.

In arriving at this decision the Tribunal has considered:

- The Authority's financial performance in terms of both revenue and likely outlays in operating and capital expenditure.
- The broader operating environment of the Sydney Catchment Authority.
- The need for, and potential effects of, restructuring the Authority's prices.
- The views of the Sydney Catchment Authority and other stakeholders.

The Tribunal has concluded that the Authority will generate adequate income to fund its statutory objectives, namely the supply of bulk water and the protection of water quality and the catchment lands and infrastructure.

The Tribunal is aware of the views of a number of stakeholders who have questioned the adequacy of funding to protect the catchment areas and who support greater incentives for water conservation and demand management via the introduction of a step price mechanism.[1]

In terms of catchment protection, insufficient justification was presented to the Tribunal to warrant significant increases in funding at this stage. The Tribunal believes that further work is required so that expenditure on catchment protection may be evaluated against 'on the ground' catchment outcomes in terms of ecological health and water quality. A significant factor in this finding was the Sydney Catchment Authority's own view that all catchment management activities for the next two years could be funded within existing revenue.

[1] The concept of step pricing is explained further at Section 5.4.

Given the potential financial impacts of a step price between the Sydney Catchment Authority and Sydney Water, it is vital that likely changes to both demand and supply parameters arising from the Water Chief Executive Officer's (CEOs) Taskforce[2] and the Hawkesbury-Nepean River Management Forum[3] be fully considered prior to any decision to significantly restructure either wholesale or retail water prices.

The Tribunal looks forward to exploring these issues further with stakeholders over the next two years to identify the best ways forward.

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2 The Water CEOs Taskforce is a working group made up of the CEOs and other representatives from a number of Government agencies with responsibility for urban water management. These include the Sydney Catchment Authority, Sydney Water Corporation, the Environment Protection Authority and the Department of Sustainable Natural Resources. The Water CEOs Taskforce is currently developing an integrated demand management strategy for the Sydney region.

3 The Hawkesbury-Nepean River Management Forum includes representatives from the community, relevant Government agencies and environmental and scientific experts. The role of the Forum is to recommend sustainable environmental flow regimes for the Hawkesbury-Nepean River system.

# 1 INTRODUCTION

The Tribunal established the existing price path in 2000, by setting the maximum prices the Authority could charge each year between 1 October 2000 to 30 June 2005. As the Authority only began operating in July 1999, there was some uncertainty at this time about how much funding the Authority would need to fulfil its role. The Tribunal therefore committed to conducting a mid-term review, to ensure that the existing price path was delivering sufficient revenue for the Authority to meet its statutory objectives.

## 1.1 Overview of findings

The Tribunal has found that Sydney Catchment Authority's existing price path to June 2005 remains appropriate. The Authority's revenues for 2000/01 and 2001/02 were significantly higher than expected, principally as a result of higher than forecast water sales. Its capital expenditure for these years was some 50 per cent below the level assumed in the 2000 Determination. The Authority believes that it is able to fund, with a reasonable degree of comfort,[4] all existing expenditure commitments and programs to 2005. In these circumstances, the Tribunal believes the Authority does not require additional funding at this stage.

The Tribunal carefully considered the view expressed by some stakeholders, that there is an urgent need to introduce 'step pricing' to strengthen Sydney Water's incentives to reduce demand, and to increase Sydney Catchment Authority's expenditure on catchment protection. However, it found that there was insufficient information available to take these steps at this stage. The Tribunal will reconsider additional funding for catchment protection, when a clearer picture emerges of the optimal level of expenditure required. It will also reconsider step pricing once the Sydney region's water supply and demand parameters are clearly established via the Water CEOs and Hawkesbury-Nepean River Management Forum review processes, as these parameters are essential inputs for determining step prices.

## 1.2 Structure of report

This report explains the Tribunal's determination in detail, including why it reached its decisions and what those decisions mean for the Catchment Authority, its customers and the environment. It is structured as follows:

- Chapter 2 outlines the review and decision-making process the Tribunal used to reach its decisions
- Chapter 3 provides an overview of the regulatory approach it has adopted to regulate the Authority's revenue and prices
- Chapter 4 looks at the implications of its determination for the Catchment Authority, including the expected impacts on its revenue, operating and capital expenditure, return on assets and overall financial viability
- Chapter 5 discusses the implications of the determination for the environment

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4 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 14.

- Chapters 6 focuses on the implications for the Authority's customers, including those for raw and unfiltered water services
- Chapter 7 outlines the issues arising from the review that the Tribunal believes will need to be addressed in the lead up to the 2005 price review.

# 2 TRIBUNAL'S REVIEW AND DECISION-MAKING PROCESS

The Tribunal has undertaken its Mid Term Review of the Sydney Catchment Authority's prices for 1 October 2000 to 30 June 2005 in accordance with section 11(1) of the *Independent Pricing and Regulatory Tribunal Act, 1992* (the IPART Act). It reached its decisions after a thorough review and decision-making process.

The Tribunal's review included an extensive investigation and public consultation. As part of this review, the Tribunal:

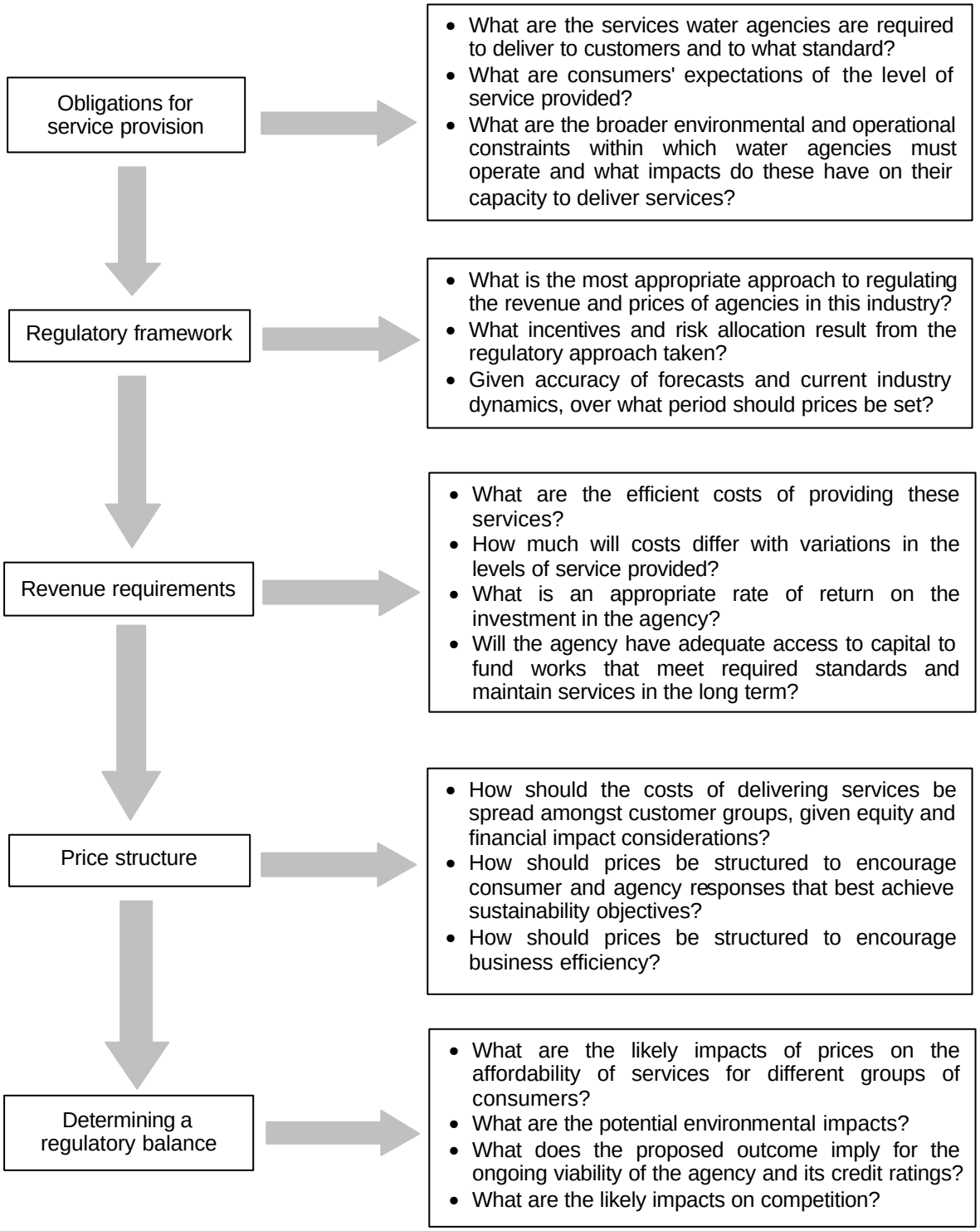
- released an issues paper in June 2002
- invited the Catchment Authority to provide a submission detailing its pricing proposals, and required it to provide extensive financial and performance data on the future capital and operating expenditure it believes will be necessary to respond to regulatory and customer demands
- invited other interested parties to respond to the Authority's and other water agencies' submissions, and received 30 written responses (see Appendix 1 of a list of respondents)
- held a public hearing on 28 November and invited some of the parties who submitted written responses to present their submissions at this hearing (see Appendix 2 for a list of presenters)
- engaged Halcrow Pacific Pty Ltd (Halcrow) to conduct a review of Sydney Catchment Authority's capital expenditure, asset management and operating expenditure
- gave the Catchment Authority the opportunity to respond to the Halcrow review, both formally in writing and through direct meetings between representatives of the Authority and the Tribunal/ Secretariat.

In addition, the Tribunal explicitly considered all the matters outlined in Section 15 of the IPART Act. These matters can be grouped as follows:

- **consumer protection**—protecting consumers from abuses of monopoly power; standards of quality, reliability and safety of the services concerned; social impact of decisions; effect on inflation
- **economic efficiency**—greater efficiency in the supply of services; the need to promote competition; effect of functions being carried out by another body
- **financial viability**—rate of return on public sector assets including dividend requirements; impact on pricing of borrowing, capital and dividend requirements of agencies
- **environmental protection**—promotion of ecologically sustainable development via appropriate pricing policies; considerations of demand management and least-cost planning

The Tribunal took all these matters, together with the information and analysis obtained through its investigation and public consultation, into careful consideration as it worked through a decision-making process.

**Figure 2.1 The Tribunal's decision-making process**



In reaching its decisions, the Tribunal has had to weigh the diverse needs and interests of the Authority's stakeholders. For example, the Authority's customers (which indirectly include around 4 million people living in the Greater Sydney region) need an affordable water supply that meets relevant water quality standards. The community needs water services to be supplied in a way that is sustainable in the long term, does not compromise the environment, and is economically efficient. The Authority needs prices that are high enough to ensure its financial viability, allow prudent investment in the catchments and related infrastructure and enable it to earn an appropriate rate of return on its assets.

The price review took place during one of the worst droughts in New South Wales' history[5] and at a time of heightened concern about water supply and demand imbalances, and appropriate investment in the Authority's vast catchment area.

The diversity of these interests and concerns often required the Tribunal to trade off customer affordability issues with environmental impacts and the maintenance of service standards. It took active steps to ensure that these trade-off decisions were well informed during the course of its review.

Further information relating to the Tribunal's review, including copies of all submissions, can be found at the Tribunal website: www.ipart.nsw.gov.au.

The Tribunal members who considered this determination were Dr Thomas Parry (Chairman), Mr James Cox (Full-time member), and Ms Cristina Cifuentes (Member).

5 Dr Couglan, Head of the National Climate Centre, as reported in Weekend Australian, 29 March 2003, p 12.

# 3 REGULATORY APPROACH TAKEN

At the 2000 price review, the Tribunal used a form of incentive regulation known as CPI±X to set the maximum prices Sydney Catchment Authority can charge for its services between 1 October 2000 and 30 June 2005.[6] With the CPI±X approach, the Tribunal estimated the amount of revenue the Authority would require in each year of the determination period using the building block revenue methodology.[7] It then set prices to generate this amount of revenue. At the same time, the Tribunal calculated the amount by which these prices can rise or fall in each subsequent year of the period, to account for movements in general inflation,[8] efficiency improvements, and significant changes in the operating environment such as new environmental or customer service standards.

The building block methodology involves the addition of cost blocks that represent the regulated agency's efficient operating expenditure, depreciation and a return on assets, to determine its overall efficient revenue requirements. This methodology is outlined briefly below, and is described in more detail in Appendix 4:

- **Operating expenditure.** This cost block is determined by reviewing the agency's proposals to determine what an efficiently operating business could be expected to spend so that it could operate effectively without compromising the quality of its services.
- **Depreciation (or capital maintenance):** This cost block was determined by calculating a straight line depreciation allowance based on the regulatory asset base, using an assumed average asset life of 70 years. This, combined with a return on assets, ensures that sufficient revenue is allowed for essential renewals and maintenance capital expenditure (see Appendix 5 for a detailed explanation).
- **Return on assets.** The return on assets is determined by multiplying the agency's regulatory asset base (RAB) by an appropriate rate of return. The RAB represents the agency's financial investment in the business, and bears no direct relationship to the value attributed to the physical assets of the business. To calculate this cost block, the Tribunal used the RAB it established in its 2000 review of the Catchment Authority's prices, and rolled this forward into the 2003 to 2005 regulatory period by adding an allowance for prudent capital expenditure,[9] and accounting for inflation and depreciation. It then determined an appropriate rate of return for the Catchment Authority within the weighted average cost of capital range, and multiplied the rolled forward RAB by this rate. The Tribunal proposes to maintain this approach for calculating the return on assets in subsequent price reviews.
- The Tribunal calculated Sydney Catchment Authority's initial RAB of $669 million at the 2000 price review, based on an asset value determined in July 1999 by

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6 This is the most common form of incentive regulation. A detailed explanation of CPI±X is provided in Appendix 4.

7 The building block methodology is the main method used by economic regulators in Australia and abroad for determining prices for monopoly services. Alternative approaches include the use of index based approaches such as total factor productivity or data envelope analysis to determine X factors. These techniques are under ongoing consideration by the Tribunal but are not at this stage intended to replace the building block approach. The building block methodology was used at each of the previous metropolitan water reviews conducted by the Tribunal.

8 Measured as the consumer price index, average of all cities on a March on March basis.

9 Capital is determined to be prudent on the basis of both an engineering examination of individual capital projects, and a review of asset management planning processes within the agency.

PricewaterhouseCoopers (PwC).[10] It proposes to maintain this approach for determining return on assets for future reviews.

A crucial element in the price regulation approach is to create incentives for the achievement of efficiency targets without detriment to the quality and reliability of services delivered to customers. As part of the current price review process, the Tribunal in determining future operating and capital expenditure established efficiency targets for both Sydney and Hunter Water Corporations. The Catchment Authority is just at the end of its establishment phase and faces some uncertainty over the level of funding needed to fulfil its role for the future. As such the Tribunal believes it is not appropriate to impose explicit efficiency targets at this time[11], although such targets will be considered at the 2005 price review. In the interim the Tribunal proposes to outline and develop its approach further and engage in dialogue with the agencies and stakeholders.

The purpose of incorporating efficiency targets in price regulation is to provide a guide for the agency about the potential for it to improve the efficiency of its operating and capital expenditure without reducing the quality of the services it delivers to customers, and to provide a basis for the Tribunal's revenue allowance decision. If the agency does not achieve these targets, then it bears the additional costs and generates a lower rate of return to its financial assets than forecast by the Tribunal. If it more than achieves the targets, then it keeps the additional gains for the period of the determination.

In deciding on an appropriate allowance for capital expenditure, all justified renewals and maintenance capital expenditure which has been based on sound asset management practices and where it has been appropriately justified by the agency, has been incorporated in full in revenue building blocks for price setting. Where the agency seeks cost savings by delaying renewals and maintenance expenditure, then this is at their own risk, and not a result of the regulatory pricing approach.

In relation to efficiency targets for capital expenditure, the Tribunal is concerned that the incentives in the current regulatory approach do not encourage water agencies to minimise capital costs through innovation and efficiency. Further, it is not satisfied that the current approach has resulted in water businesses sufficiently linking capital expenditure programs to demonstrated regulatory and customer expectations. The Tribunal therefore proposes to review the approaches it has used to date to better assess and allow for capital expenditure programs in its pricing determinations. It will assess options for creating stronger incentives for businesses to pursue capital efficiencies and improve asset management practices.

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[10] The asset values considered by PwC ranged from a low of $480m (historical net book value or depreciated actual cost), through $647m (derived from the underlying economic values indicated by Sydney Water's last price determination in 1996) to a high of $1,653m (revaluation net book value – MEERA/DORC). In coming up with its recommended value the selection criteria used by PwC were to:

- minimise the accounting and taxation adjustments which may be required on transfer and in the future
- implications for the treatment of the remaining assets within Sydney Water
- achieving an acceptable commercial rate of return on the assets
- recovery of costs through revenue
- supporting a level of debt which is reflective of an appropriate capital structure for the Catchment Authority's business, and one which satisfies a credit rating of around 'A'.

[11] The Tribunal is however, requiring the Catchment Authority to keep within its operating expenditure budgets for 2003/04 and 2004/05. With upward pressure on some cost items likely, the Authority may have to implement its own efficiencies to achieve this goal.

**Box 1 Overview of Sydney Catchment Authority**

The Sydney Catchment Authority was established to manage the water supply and protect catchments, supply bulk water and regulate activities within Sydney's catchment areas to improve water quality, protect public health and the environment. In essence, the Catchment Authority is required to supply bulk water to Sydney Water Corporation for treatment and delivery to around 4 million retail customers.

The Catchment Authority, therefore has primary responsibility for Sydney's bulk water supply, which is drawn from the catchments of four major river systems – the Warragamba, Upper Nepean, Woronora and Shoalhaven. These catchments extend over 16,000 square kilometres and surround the Sydney Greater Metropolitan Region.

The Authority endeavours to sustainably manage these catchment areas in order to supply Sydney Water and its other bulk water customers with high quality bulk water. The Authority was created as a result of the Sydney Water Inquiry, headed by Peter McClellan QC (the McClellan Inquiry). This Inquiry investigated the water quality incidents experienced in Sydney between July and September 1998. The Inquiry found that the catchments were seriously compromised by many possible sources of contamination and that in relation to catchment management, there were:

> *…a large number of government and non-government agencies operating with fragmented responsibilities potential overlaps and gaps. No one body is responsible for ensuring the catchment is managed to minimise contamination of the available waters.*

In order to correct these deficiencies, the McClellan Inquiry recommended the establishment of an independent agency:

> *…tasked to protect the water quality in the Inner and Outer Catchments and given management responsibilities for the Inner Catchment and powers to oversight a new strong and strategic Regional Environmental Plan for the whole catchment.*

In response to the McClellan Inquiry, the State Government enacted the *Sydney Water Catchment Management Act 1998* which created the SCA. The Authority became operational on 2 July 1999.

In common with both Sydney Water and Hunter Water, the Catchment Authority is required to comply with, and be audited against, an Operating Licence issued by the NSW Government. The licence sets standards and obligations on aspects of the Authority's operations, such as, bulk water quality, catchment management, customer service and management of catchment infrastructure.

The Sydney Catchment Authority faces major challenges in fulfilling its statutory objectives. These include maintaining a safe and reliable water supply to support a growing metropolitan population, despite finite water supplies and the need to divert environmental flows to sustain the health of the Hawkesbury – Nepean River and other river systems.

The Authority is also tasked to protect an Outer Catchment already compromised by a wide variety of land uses inconsistent with the supply of safe drinking water and faces additional pressure from future development.

# 4 FINANCIAL ANALYSIS AND IMPLICATIONS FOR THE SYDNEY CATCHMENT AUTHORITY

The Tribunal has found that the Sydney Catchment Authority's existing price path to 30 June 2005 will generate revenue of $128.6 million in 2003/04 and $130.4 million in 2004/05 in nominal terms. The Tribunal believes this will be adequate to meet its forecast capital and operating expenses to 2004/05. In reaching this view, the Tribunal considered the Catchment Authority's pricing submission and forward capital and operating budgets, the implications of the water quality, environmental and other requirements placed on the Catchment Authority for its costs and financial viability, and the findings and recommendations of Halcrow's review of its capital expenditure and operating expenditure.

The key implications of maintaining the existing price path for the Catchment Authority are as follows:

- Revenue is expected to be relatively stable, although the Tribunal believes that higher than expected water sales may boost revenue at least until 2003/04. This revenue will be sufficient to enable the Authority to perform its tasks effectively.
- The Tribunal expects the Catchment Authority to implement efficiencies to ensure that operating expenditure for 2003/04 and 2004/05 does not exceed its forecast expenditure.
- The existing price path is expected to maintain the Catchment Authority's financial viability, and generate a real pre tax rate of return to its regulatory asset base of 5.2 per cent in 2003/04 and 4.9 per cent in 2004/05.

In addition, the Tribunal intends to consider how it can strengthen the incentives for operating and capital efficiencies at the next price review.

This chapter discusses each of these implications and issues going forward in more detail, and explains the financial analysis that underpins the Tribunal's decisions.

## 4.1 Overall revenue

*Finding 1: The Tribunal found that a revenue requirement of $128.6 million in 2003/04 and $130.4 million in 2004/05 in dollars of the day remains appropriate for the setting of maximum prices for the bulk water supplied by the Authority.*

In October 2000, the Tribunal determined the Catchment Authority's revenue requirements for the current price path. The Tribunal considered the amount of operating and capital expenditure required for the functioning of an efficient business and to generate a reasonable rate of return.

Because the Catchment Authority was newly formed, the Tribunal set prices which erred on the generous side in terms of revenue. This reflected the significant catchment management issues identified by the Sydney Water Inquiry and the uncertainties over funding requirements during the 'start up' phase for the Catchment Authority. Prices were therefore set to generate rates of return that are relatively high compared to those allowed for the other metropolitan water agencies.

In the course of its mid-term review, the Tribunal was not presented with any compelling evidence to suggest that the price path and revenue requirements it determined in 2000 provide inadequate funding for the Catchment Authority to undertake its functions. In particular, the Catchment Authority itself expressed the view that all existing and likely forward expenditure requirements over 2003/04 and 2004/05 can be funded through existing prices.[12]

**Table 4.1 Actual and forecast revenue for the Sydney Catchment Authority ($ of the day, millions)**

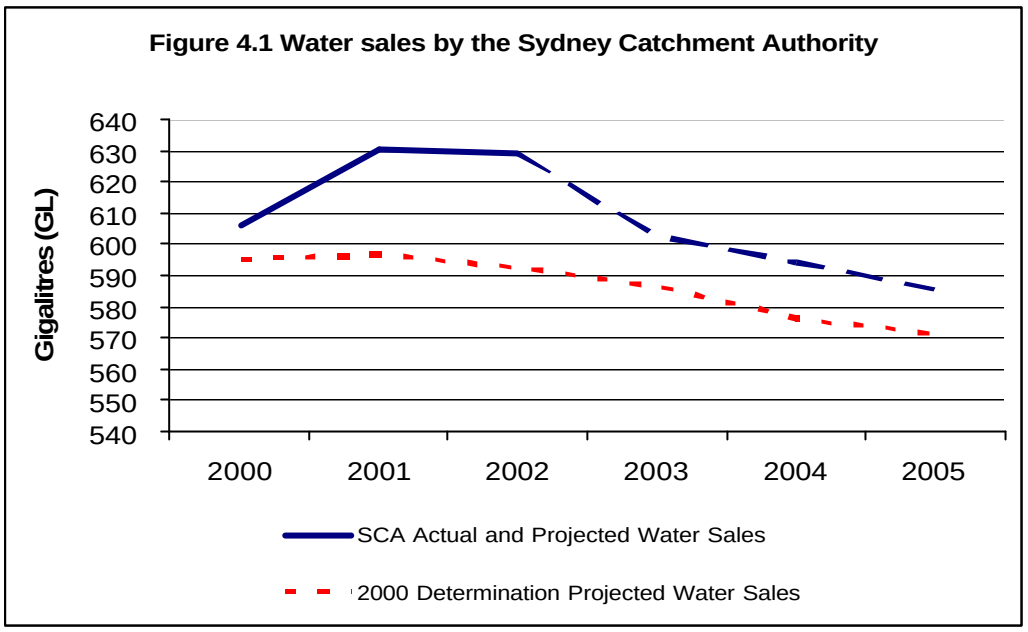
| | 2000/01 | 2001/02 | 2002/03 (forecast) | 2003/04 (forecast) | 2004/05 (forecast) |
|---|---|---|---|---|---|
| Actual/forecast revenue | 120.4 | 123.1 | 126.6 | 128.6 | 130.4 |
| IPART 2000 Determination forecast | 116.7 | 119.9 | 122.9 | 125.5 | 128.9 |
| Difference | 3.7 | 3.2 | 3.7 | 3.1 | 1.5 |

The differences in revenue for 2000/01 and 2001/02, as compared to the 2000 Determination forcast, are largely the result of higher than expected water sales to Sydney Water Corporation (Figure 4.1). The Catchment Authority forecasts that it is likely to receive an additional $6.3 million[13] over the course of the price path, but the Tribunal believes that this is, if anything, a conservative estimate given the forecast shown in Table 4.1. At 30 April 2003, the Catchment Authority had already supplied around 535 gigalitres (GL) of bulk water over the 2002/03 financial year. Thus it would require significant—and therefore unlikely—reductions in its customers' water usage not to exceed Sydney Water's 612GL water consumption target by the end of the financial year.

The Tribunal recognises that the outcomes of current Government processes—such as the reviews into environmental flow regimes for the Hawkesbury-Nepean River, the Catchment Regional Environmental Plan (REP) and the physical security of key Government assets—could potentially change the Catchment Authority's forward expenditure requirements significantly. The Catchment Authority also acknowledges that these reviews could have a significant impact on its capital and operating expenditure.[14]

In these circumstances, the Tribunal is reluctant to provide additional funding, above what the existing price path will generate, until the Catchment Authority's revenue requirements are firmly established, and it has prepared strong business cases for new projects that clearly link expenditure to water quality, environmental or business outcomes.

12 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 14.
13 Based on the Authority's 2002 to 2005 revenue forecasts.
14 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 4.




In forecasting forward water sales by the Authority, the Tribunal has adopted Sydney Water Corporation's forecast for 2002/03, 2003/04 and 2004/05, rather than that used by the Authority in its pricing submission. The Authority based its projection on an earlier consumption forecast produced by Sydney Water. Sydney Water has since revised its forecast upwards reflecting the higher than expected water sales over the last few years. Given this trend and likely water sales for 2002/03, the Tribunal believes that Sydney Water's forecast is likely to be more accurate and has adopted it to calculate expected revenue over the remainder of the price path.

## 4.2 Operating Expenditure

*Finding 2: The Tribunal found that Sydney Catchment Authority's projected operating expenditure of $78.0 million in 2003/04 and $79.4 million in 2004/05 is reasonable, but expects the Catchment Authority to achieve efficiency gains to ensure its actual spending does not exceed these projections.*

The Catchment Authority's operating expenditure includes salaries and overheads (such as costs for office space, building services and IT services), long-term contracts (such as mechanical and electrical maintenance and water quality monitoring), energy, chemicals, bulk water purchases, licence fees and insurance.

Table 4.2 shows its actual and forecast expenditure on these and other operating expenditure items over the course of the current price path.

**Table 4.2 Actual and forecast operating expenditure for the Sydney Catchment Authority ($ of the day, $, millions)**

| | 2000/01 | 2001/02 | 2002/03 (forecast) | 2003/04 (forecast) | 2004/05 (forecast) |
|---|---|---|---|---|---|
| Actual/forecast operating expenditure | 57.8 | 73.5 | 75.6 | 78.0 | 79.4 |
| IPART 2000 Determination forecast | 60.0 | 63.5 | 67.3 | 71.2 | 75.1 |
| Difference | -2.2 | 10 | 8.3 | 6.8 | 4.3 |

In 2000/01 and 2001/02 the Catchment Authority exceeded the Tribunal's 2000 Determination forecast by 6.2 per cent ($7.8 million). This was due to increased expenditure on labour, administration, bulk water purchases, energy, superannuation and insurance.[15]

Halcrow found that this variation was reasonable, and reflected the uncertainties of the Catchment Authority's establishment phase. However, it noted that the Catchment Authority is likely to experience continued upward pressure on many of its operating cost items over the remainder of the price path. It recommended that the Tribunal require the Authority to seek operating cost efficiencies to ensure that its actual expenditure does not exceed its latest forecasts.[16]

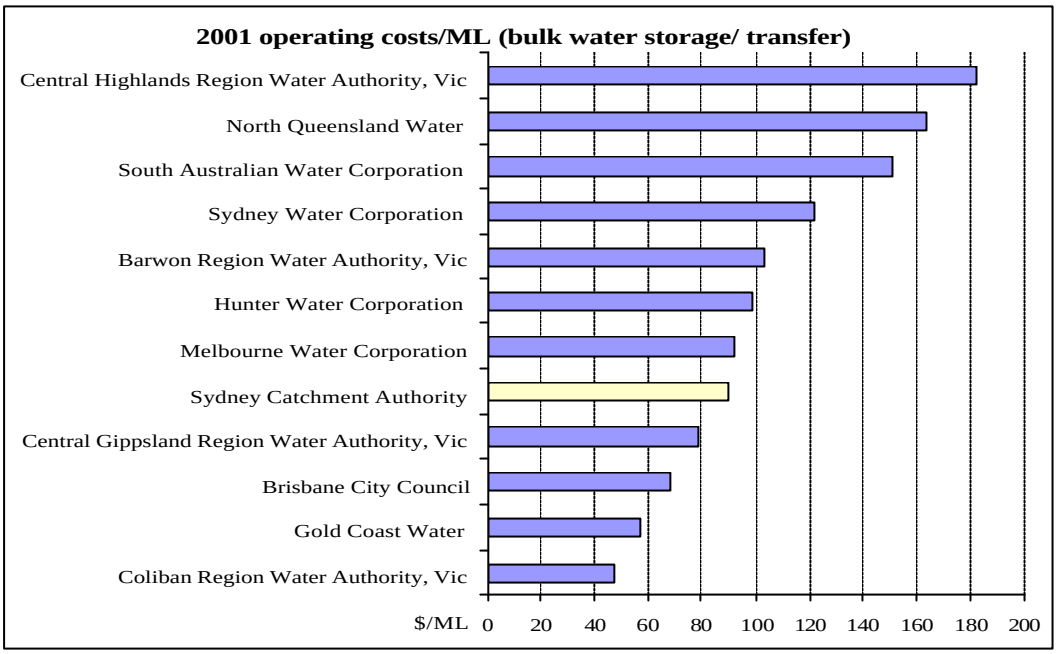
In addition, Halcrow's noted that the Catchment Authority's budgeting process for operating expenses is not geared towards identifying and implementing efficiencies.[17] Given that the agency has now been in operation for around three and a half years, the Tribunal considers that it is appropriate to place a ceiling on future increases in its operating expenditure.

The Tribunal believes that, as a result of this ceiling, the Catchment Authority will need to revise its budgeting process and make a more deliberate effort to achieve efficiencies throughout the business. However, it also notes that the agency appears to be in a comparatively sound position, despite the rapid growth in its activities during its establishment phase.

Halcrow found that benchmarking of the Catchment Authority's bulk water transfer and storage function indicates that its performance is comparable and in some cases more efficient than its Australian peers (see Figure 4.2).

15 Sydney Catchment Authority, Annual Information Return 2002.
16 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 52.
17 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 51.

**Figure 4.2 Sydney Catchment Authority Comparative Performance**[18]




Halcrow also analysed the Catchment Authority's corporate expenditure. It found that this expenditure represents some 28 per cent of total expenditure, and that this is reasonable compared with the other NSW metropolitan water agencies. Table 4.3 provides a breakdown of the Catchment Authority's operating expenditure by function.

**Table 4.3 Sydney Catchment Authority operating expenditure by business activity ($ of the day, $, millions)**

| Operational Activity | 1999/2000 | % | 2000/01 | % | 2001/02 | % |
|---|---|---|---|---|---|---|
| Bulk water supply | 8.5 | 19 | 22.9 | 40 | 24.7 | 34 |
| Catchment management | 7.8 | 17 | 17.6 | 30 | 24.4 | 33 |
| Dam safety | 2.0 | 4 | 2.7 | 5 | 2.0 | 3 |
| Corporate level activities | 26.8 | 59 | 14.6 | 25 | 22.4 | 30 |
| **Total** | **45.1** | **99** | **57.8** | **100** | **73.5** | **100** |

Note: entries may not sum to 100 per cent due to rounding.

[18] Information provided by the Sydney Catchment Authority based on information in WSAA*facts 2001*.

## 4.3 Capital Expenditure

*Finding 3: The Tribunal found that $35.3 million in 2003/04 and $37.0 million in 2004/05 is an appropriate level of funding for the Sydney Catchment Authority's most likely near-term capital expenditure program.*

In setting the price path from 2000 to 2005, the Tribunal noted that the Sydney Catchment Authority's capital expenditure requirements were "still somewhat uncertain."[19] As a result of these uncertainties, it allowed the agency's own capital expenditure forecasts when establishing its revenue requirement for price setting purposes.

In the first 2 years of this price path, the Catchment Authority underspent on forecast capital expenditure by approximately 50 per cent or $48.8 million (Table 4.4). The Tribunal understands that year-to-date figures suggest that the agency is also likely to underspend in 2002/03.

**Table 4.4 Actual and forecast capital expenditure for the Sydney Catchment Authority ($ of the day, millions)**

| | 2000/01 | 2001/02 | 2002/03 (forecast) | 2003/04 (forecast) | 2004/05 (forecast) |
|---|---|---|---|---|---|
| Actual/forecast capital expenditure | 33.3 | 16.3 | 23.6 | 35.3 | 37.0 |
| IPART 2000 Determination forecast | 45.8 | 52.6 | 35.9 | 14.8 | 14.7 |
| Difference | -12.5 | -36.3 | -12.3 | 20.5 | 22.3 |

The Catchment Authority attributed much of this underspending to the fact that the $150 million Warragamba Spillway project has been substantially completed some $27 million under budget. It also noted that a number of other projects, in preliminary planning stages at the time of the 2000 Determination, have been discontinued or deferred.[20]

Halcrow found that actual capital expenditure was only 52 per cent of that projected in 2000/01 and 2001/02, yet 93 per cent of this expenditure was on projects that were planned.[21] This suggests that some of the underspending was due to delays to the projects.

Although the Catchment Authority has revised its capital program to include sizable capital projects commencing in 2003/04 and 2004/05 (see Table 4.4), the Tribunal remains unconvinced about its ability to deliver the program, particularly given the uncertainties surrounding its forward capital program. These uncertainties include:

- The outcomes of the Hawkesbury-Nepean River Management Forum, which is due to recommend environmental flow regimes for the Hawkesbury-Nepean river system in September 2003. The Catchment Authority believes that the outcomes of this process could necessitate modifications to the outlets of its storages to facilitate increased environmental flows. Initial estimates put the costs of this work as high as $100 million.[22]

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19 Sydney Catchment Authority, Pricing Submission, 1999, p 29.

20 Sydney Catchment Authority, Submission to IPART's Mid-term Review of the SCA's Price Path, September 2002, p 18.

21 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 56.

22 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 11.

- The outcomes of the NSW Government's security upgrades to key community assets. The Catchment Authority has indicated that the need for greater protection of its assets could result in up to $5 million in additional expenditure next financial year alone.[23]
- The Catchment Authority's examination of refurbishment or replacement options for the 110 year old Upper Canal which delivers water from the Nepean and Avon storages to Prospect Water Filtration Plant. Ultimately, this could result in additional capital expenditure estimated to range anywhere from $40 to $400 million.[24]

Although Halcrow identified some potential efficiencies which could be applied to the Catchment Authority's 2003/04 and 2004/05 capital programs, given these uncertainties, the Tribunal believes that it would be inappropriate to apply efficiencies to 2003/04 and 2004/05 programs at this stage. Given the agency's performance to date, it is also possible that any such efficiency targets would simply be achieved by continued underspending.

The Tribunal will review the Catchment Authority's total capital expenditure and potential for efficiency gains in the 2005 price review. It hopes that a clearer picture of the agency's future capital requirements will have emerged by this time.

Halcrow also examined the breakdown of the Catchment Authority's projected capital expenditure program by driver (Table 4.5). Its findings and the Tribunal's responses are discussed below.

**Table 4.5 Sydney Catchment Authority's projected capital expenditure by driver**

| Forecast $, millions ($ of the day) | 2003/04 | % | 2004/05 | % |
|---|---|---|---|---|
| Maintenance and renewal | 4.1 | 12 | 5.0 | 14 |
| Mandatory standard | 19.6 | 56 | 13.5 | 36 |
| Discretionary standards | 11.3 | 32 | 18.3 | 49 |
| Efficiency | 0.3 | 1 | 0.2 | 0.5 |
| **Total** | **35.3** | **101** | **37.0** | **100** |

Note: entries may not sum to 100 per cent due to rounding.

### 4.3.1 Asset maintenance and renewal

Halcrow found that the expenditure on asset maintenance and renewal proposed by the Catchment Authority was appropriate, but suggested that the rate of maintenance and renewals may have to increase over the longer term. The Catchment Authority reported an inherited backlog of maintenance with respect to its catchment infrastructure assets. It has introduced a new asset maintenance strategy to address the backlog, which will be used to justify increased maintenance and renewals expenditure in the future.[25]

23 Information provided by the Sydney Catchment Authority.
24 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 18.
25 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 54.

The Tribunal expects the Catchment Authority to take all necessary measures to ensure the serviceability and reliability of its assets in the long term, and will closely scrutinise its performance as part of the 2005 price review.

### 4.3.2 Compliance with mandatory standards

The Catchment Authority's projected capital expenditure relating to compliance with mandatory standards is dominated by dam safety (55 per cent), occupational health and safety (32 per cent) and environmental flow and fishery requirements (11 per cent). Halcrow found that this planned expenditure is appropriate, although it questioned the grouping of two small projects related to office accommodation under the mandatory standards heading.

The Catchment Authority argued that this expenditure was required to achieve compliance with occupational health and safety (OH&S) standards, and the Tribunal accepted that this expenditure was appropriate.[26]

### 4.3.3 Expenditure on discretionary standards

*Finding 4: The Tribunal found that expenditure on hydro-electric generation facilities should not be treated as a regulated activity and should therefore not be included within the regulatory asset base.*

The Catchment Authority proposes to spend around $13 million (or 46 per cent of all discretionary capital expenditure) constructing several mini hydro-electric generation plants, to generate green power for commercial sale. While this activity is only indirectly linked with its statutory functions as set out in the *Sydney Water Catchment Management Act 1998*, it remains consistent with Government policies to promote the use of renewable energy sources.[27]

Despite this, the Tribunal believes that the Catchment Authority's customers (which indirectly includes Sydney Water's 4 million consumers) should not have to fund or bear any risks associated with this project. Instead, the Authority must ensure that the project is financially viable as a stand-alone activity. The Tribunal has decided any expenditure on this activity will be excluded from the agency's Regulatory Asset Base (RAB), and therefore will not be recovered through water prices.

The Catchment Authority also proposes to spend a further $3.8 million[28] to acquire land within the catchment areas. Halcrow raised concerns that at present the Catchment Authority does not have clear criteria linking land acquisition to catchment protection outcomes. The Tribunal understands that the Catchment Authority is currently finalising a policy that will establish explicit criteria for land acquisition, and that it does not intend to go ahead with this expenditure until the policy is adopted.[29]

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26 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 57.

27 See NSW Government, *Energy Management Policy – Reducing Greenhouse Emissions from Government Operations.*

28 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 57. Expenditure quoted is for 2003/04 and 2004/05 (see Appendix 3 for further details).

29 Correspondence with the Sydney Catchment Authority, 6 March 2003.

### 4.3.4 Expenditure on improvements in business efficiency

*Finding 5: The Tribunal found that the Sydney Catchment Authority's proposed expenditure on accommodation facilities should not be treated as a regulated activity or included within the RAB.*

Halcrow identified that the Catchment Authority proposes to spend around $1.1 million to upgrade a number of accommodation facilities, that it rents out to provide it with a source of non-regulated income. Consistent with its decision on the proposed mini-hydro generation plants, the Tribunal believes that this expenditure should not be treated as a regulatory activity, and has therefore decided not to include it in the agency's RAB.

## 4.4 Implications for financial viability and return to assets

*Finding 6: The Tribunal found that the Sydney Catchment Authority should earn an estimated pre tax rate of return on 5.2 per cent in 2003/04 and 4.9 per cent in 2004/05, and that sufficient revenue will be available to allow estimated dividends and total tax equivalents of $59.0 million to be paid over these years.*

The Tribunal believes that its decision to maintain the Catchment Authority's existing price path will not have a negative impact on its generally sound financial position, and will allow it to earn a reasonable rate of return and pay reasonable dividends.

The Tribunal's analysis indicates that the agency should retain its current investment category ratings, and continue to be able to service and repay debt (Table 4.6). (Further details of the financial viability indicators are attached in Appendix 9.)

**Table 4.6 Financial indicators and credit ratings for Sydney Catchment Authority**

| FINANCIAL INDICATORS | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| **Ability to service debt** | | | | | |
| 1. EBITDA interest cover | 6.74 | 4.63 | 4.92 | 4.40 | 3.83 |
| NSW Treasury ratings (2002) | **AAA** | **AAA** | **AAA** | **AAA** | **AA** |
| 2. Funds from operations interest coverage | 7.63 | 4.54 | 5.19 | 4.29 | 3.91 |
| Standard and Poors US ratings (1995) | **AA** | **AA** | **AA** | **AA** | **AA** |
| 3. Pre-tax interest coverage | 5.91 | 3.34 | 4.07 | 3.62 | 3.13 |
| Standard and Poors US ratings (1995) | **AA** | **AA** | **AA** | **AA** | **AA** |
| | | | | | |
| **Ability to repay debt** | | | | | |
| 4. Funds flow net debt payback | 7.03 | 5.26 | 4.57 | 6.38 | 7.45 |
| NSW Treasury ratings (2002) | **BB** | **BBB+** | **A** | **BB+** | **BB** |
| 5. Funds from operations/total debt (%) | 30% | 19% | 20% | 15% | 14% |
| Standard and Poors US ratings (1995) | **AA** | **A** | **AA** | **A** | **BBB** |
| 6. Debt gearing (regulatory value) | 18% | 20% | 22% | 23% | 25% |
| NSW Treasury ratings (2002) | **AA+** | **AA+** | **AA+** | **AA+** | **AA+** |
| Standard and Poors US ratings (1995) | AA | AA | AA | AA | AA |
| | | | | | |
| 7. Internal financing ratio | 64% | 1% | 48% | 28% | 28% |
| NSW Treasury ratings (2002) | **BBB+** | **B** | **BB+** | **B** | **B** |
| 8. Net cash flow/capital expenditure (%) | 111% | 0% | 4% | 25% | 30% |
| Standard and Poors US ratings (1995) | **AA** | **<BB** | **<BB** | **BB** | **BB** |
| | | | | | |
| NSW Treasury overall score and rating | | | | | |
| NSW Treasury total score (0 –10) | 6.50 | 6.00 | 7.00 | 5.50 | 4.75 |
| 1. Funds from operations interest coverage | **A** | **A** | **A+** | **BBB+** | **BBB** |
| 9. Net debt ($m) | | | 169 | 196 | 222 |

The Tribunal notes the Catchment Authority's B rating for its internal financing ratio, which reflects its ability to service its borrowing using its cash reserves. The relatively low rating for this indicator is due to the agency's large forecast capital expenditure in 2003/04 and 2004/05, and the dividends payable to NSW Treasury. The Tribunal believes that this issue will not be a significant concern over the short-term, but it may need to look at it more closely as part of the 2005 price review.

Provided that the assumptions used in the Tribunal's modelling of the financial impacts of the existing price path are correct, the rate of return to the regulatory asset base is expected to be around 5.2 per cent in 2003/04 and 4.9 per cent in 2004/05 (Table 4.7).[30] Although this rate of return is relatively low compared with some competitive industries, the Tribunal believes it is reasonable given that the Catchment Authority operates in a low risk environment.

[30] The weighted average cost of capital (WACC) range for the metropolitan water agencies was estimated to be between 5.2 per cent and 6.7 per cent. The detailed assumptions used to generate this range are given in Appendix 7.

**Table 4.7 Actual and forecast rates of return (% real pre-tax)**

| 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 |
|---|---|---|---|---|
| 7.9% | 5.7% | 5.6% (forecast) | 5.2% (forecast) | 4.9% (forecast) |

The Tribunal estimates that the Catchment will be able to pay $59.0 million in dividends and tax equivalents during the final two years of the price period.

## 4.5 Issues Tribunal will consider going forward

As part of the 2000 Metropolitan Water Pricing Determination, the Tribunal established efficiency targets for capital and operating expenditure for each of the water agencies, with the exception of the Sydney Catchment Authority. It did not establish targets for the Catchment Authority, as it had only begun operations in July 1999 and there were considerable uncertainties surrounding its capital and operating expenditure requirements.

However, at this mid-term review, the Tribunal decided to place a ceiling on the Catchment Authority's operating expenditure, which means the agency will have to set its own operating efficiency targets to ensure it does not exceed its forecast expenditure (see section 4.2). It decided not to impose a capital efficiency target at this time, but may do so in subsequent price reviews.

The Tribunal is considering changes to its approach to the regulation of both capital and operating expenditure for the 2005 price path. It wants to foreshadow this approach, to allow consideration and discussion prior to possible introduction in 2005.

### 4.5.1 Incentives for operating efficiencies

The Tribunal will expect to see evidence at the 2005 price review that the Catchment Authority has made its best endeavours to stay within its operating expenditure budget as outlined in this report, within the constraints of its operating environment. It will take any failure to achieve the expected efficiencies into consideration when formulating the Catchment Authority's base year operating expenditure for the purposes of estimating its efficient operating expenditure in the 2005 determination period.

### 4.5.2 Incentives for capital efficiencies

The Tribunal is concerned about the adequacy of incentives created by the current regulatory approach for improving capital efficiencies. These incentives appear to be small, given that water agencies have responded to the efficiency targets implied in the Tribunal's capital expenditure allocations principally by switching capital between projects[31], or delaying projects. It is not clear whether these actions result in genuine efficiency gains, or how they affect the agencies' overall service provision given the long lives of these assets.

To improve the incentives, Halcrow recommended establishing a series of output targets, such as length of water main renewed. The Tribunal is concerned that this approach may create perverse incentives, and has therefore decided to not adopt this recommendation.

[31] Switching capital expenditure away from proposed programs to new programs may reflect poor asset management planning, or changed priorities as new operating issues arise.

However, it will seek further information from the agencies and relevant stakeholders on the approach as part of the 2005 price review.

In addition, the Tribunal will investigate other changes to its approach to regulating capital expenditure as part of the 2005 price review. Its objectives are to create an incentive for water agencies to pursue capital efficiencies, encourage better long-term asset management planning and enhance the connection between drivers of expenditure and capital expenditure programs. These drivers include changes to environmental standards or demonstrated customer preferences.

As part of this investigation, the Tribunal will consider the use of a four year efficiency carryover mechanism. Under this mechanism, the difference between the capital expenditure forecast and amount approved at the time of a determination and the actual capital expenditure will be borne by the business for four years rather than until the next determination is made. In practice, this would mean that expected capital expenditure would be initially rolled into the RAB and actual capital expenditure would replace the expected capital expenditure after four years has passed. Prior to the actual capital expenditure being rolled into the RAB, it would be subjected to a prudency review.

The effect of the four year efficiency carryover mechanism would be to allow the Catchment Authority to keep better than expected efficiency savings for the entire four year period. However, if it was unable to meet the efficiency savings targets, it would bear the cost for the entire four year period.

This kind of incentive mechanism could operate in several different ways:

- It may be based on an agreed program basis, whereby gains in one program could not be offset against over expenditure in another. This would limit expenditure flexibility, but would also create a strong incentive for Catchment Authority to more effectively plan and manage its capital expenditure programs as the businesses would bear the heightened risks for inaccurate forward capital expenditure planning.
- Alternatively, it may be applied to the capital expenditure of the business in aggregate, allowing reallocation of capital expenditure during the course of a determination period without additional gain or penalty provided total expenditure matched forecasts.

The Tribunal will consult with Catchment Authority and other key stakeholders about this approach in the lead up to the next determination. The Tribunal is likely to require the water agencies to provide a higher level of specification and justification for their forward capital expenditure programs to enable such a mechanism to be implemented. It will also require this information to improve the link with agreed expenditure drivers, such as growth and requirements to meet mandatory standards. Where water businesses want to propose capital expenditure to meet performance standards in excess of those required by regulators such as the EPA they will need to clearly demonstrate that their customers are willing to pay for the enhancement of standards.

The Catchment Authority therefore has two years to develop adequate asset management planning processes to provide this information to a reasonable level of confidence.

# 5 IMPLICATIONS FOR THE ENVIRONMENT

Environmental performance is fundamental to the Catchment Authority's operations: to supply high quality bulk water, it must protect the environment from which it sources this water. For this reason, the Tribunal places the utmost importance on the implications for the environment when considering its pricing decisions.

For this mid-term review, the Tribunal received submissions specifically related to the environment from the Colong Foundation, Total Environment Centre and Nature Conservation Council of NSW. Each of these organisations argued that the Catchment Authority requires additional funding to better manage its catchment areas.

In addition, these stakeholders argued that there is an urgent need to introduce a 'step pricing' to strengthen Sydney Water's incentives to reduce demand, and to increase Sydney Catchment Authority's funding for expenditure on catchment protection.

The Tribunal carefully considered these submissions, along with the broad range of information on environmental issues, in deciding to maintain the current price path. The key implications of this decision for the environment are as follows:

- The Tribunal has not been able to resolve how best to measure the effectiveness of expenditure on catchment protection, and therefore found it difficult to justify setting prices to fund additional catchment management expenditure.
- The Tribunal considers it unlikely that the Catchment Authority will need additional expenditure in this pricing period to meet its obligations under the Regional Environmental Plan.
- The Tribunal recognises and is concerned about the potential water supply and demand imbalance in the Sydney region, and the impact of this imbalance on the Catchment Authority. However, it intends to consider this issue as part of its end-of-term review of the Catchment Authority's and Sydney Water's operating licences, when the outcomes of the Hawkesbury-Nepean River Management Forum and the Water CEOs taskforce are expected to be known.
- The Tribunal will reconsider step pricing once the Sydney region's water supply and demand parameters are clearly established via the Water CEOs and Hawkesbury-Nepean River Management Forum review processes, as these parameters are essential inputs for determining step prices.

## 5.1 The need for additional Catchment Management funding not clear at this time

The catchment for Sydney's water storages extends over 16,000 square kilometres, from north of Lithgow to the source of the Shoalhaven River near Cooma in the south, and from the Woronora River in the east to the source of the Wollondilly River west of Goulburn. The Catchment Authority's Act[32] further defines the total catchment into two categories, the Inner Catchment (or Special Areas) and the Outer Catchment.

32 *Sydney Water Catchment Management Act 1998.*

One of the key issues the Tribunal raised in its issues paper for this review was how it should measure the effectiveness of expenditure on catchment protection. Halcrow also noted this problem in its review, and found that although the Catchment Authority teams responsible for catchment activities were professionally managed and appeared efficient, it was difficult to quantify the 'on the ground' outcomes delivered.[33]

One key indicator of catchment health is bulk water quality. The most recent Operational Audit of the Catchment Authority found that the agency had achieved 100 per cent compliance with the Australian Drinking Water health guidelines values set out in its Operating Licence.[34] The Catchment Authority reported that it attained 96 per cent compliance with water quality standards set out in the Bulk Water Supply Agreement with Sydney Water Corporation.[35]

In addition, the 1999 CSIRO Catchment Audit proposed a range of indicators to reflect catchment health. Most of these indicators have been gazetted and now form part of the environmental and Ecological Sustainability Development (ESD) indicators required under its Operating Licence.

However, while these indicators are comprehensive, most of them are not readily suitable to measure the effectiveness and efficiency of catchment expenditure. Many may be substantially affected by factors beyond the Catchment Authority's control, and many cannot be directly influenced by expenditure by the agency (eg areas burnt by fire, areas affected by salinity, level of stream flows and volume of water releases).

The Tribunal has not been able to satisfactorily resolve how best to measure the effectiveness of expenditure on catchment protection. It believes its end-of-term review of the Catchment Authority's operating licence (due to begin in late 2003) may provide it with an opportunity to consider the issue further.

For this review, however, it has investigated the funding available for catchment management in the outer and inner catchment areas, and the Catchment Authority's management activities in these areas. It found that there is insufficient evidence to justify an increase in expenditure on catchment management at this stage. The Catchment Authority indicated that it believes necessary expenditure on catchment management can be funded through the existing price path.[36] The key environmental initiatives it intends to undertake are summarised in Box 2 below.

The environmental activities of the Authority are also discussed in more detail overleaf.

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33 Halcrow Pacific Pty Ltd, *NSW Water Agencies Review, Overview Report*, December 2002, p 52.

34 IPART, *Sydney Catchment Authority Operational Audit 2001/2002*, p 6-4.

35 Sydney Catchment Authority, Submission to IPART's Mid-term Review of the SCA's Price Path, September 2002, p 6.

36 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 15.

**Box 2 Catchment Authority's key environment-related initiatives**

The Catchment Authority directs considerable expenditure to manage its catchments sustainably to protect water quality and achieve other environmental outcomes. Significant environmental initiatives include:

- Maintenance of a comprehensive bulk water quality monitoring and research program.
- Review and concurrence role in development applications under State Environmental Planning Policy (SEPP) 58 to prevent adverse impacts on catchment health and water quality.
- Implementation of Sustaining the Catchments Regional Environmental Plan (REP) and preparation of individual catchment area rectification plans.
- Provision of $20 million over 5 years to accelerate the provision of modern sewerage services to the remaining unsewered areas within the catchments.
- Commitment of approximately $3 million per annum to fund catchment protection activities pursuant to the Special Areas Strategic Plan of Management between the Catchment Authority and National Parks and Wildlife Service.
- Maintenance and development of catchment protection and enforcement activities via the *Sydney Water Catchment Management (General) Regulation 2000* and *Sydney Water Catchment Management (Environment Protection) Regulation 2001.*
- Funding of approximately $2.2 million per annum to facilitate cooperative and community based projects to improve water quality and the ecological health of the Outer Catchment.

### 5.1.1 Outer Catchment initiatives

The Outer Catchments make up more than 75 per cent of the total catchment. They support a wide variety of land uses including farming and grazing, urban townships and communities, mining and industrial activity such as meat and wool processing.

The Catchment Authority's main formal power in the Outer Catchment involves planning concurrence[37] under State Environmental Planning Policy (SEPP 58) – Protecting Sydney's Water Supply. These powers will shortly be incorporated into a new Regional Environmental Plan (REP) covering the entire catchment. It is envisaged that once in operation the REP may necessitate additional catchment management expenditure.

The Catchment Authority has been granted additional formal powers under the *Sydney Water Catchment (Environment Protection) Regulation 2001.* The Regulation allows the Authority to enforce aspects of the *Protection of the Environment Operations Act 1997*, to prevent and eliminate unlicensed polluting activities throughout the catchment.

[37] The Catchment Authority's planning concurrence powers under SEPP 58 allow it prevent certain types of development within the Outer Catchment, if that development cannot be shown to have a neutral or beneficial effect on water quality.

Section 42 (4) of the *Sydney Water Catchment Management Act 1998* requires audits to be conducted into the health of the catchment areas every two years. The first of these audits in 1999 found that the Special Areas were generally in good condition. The audit also concluded that the Outer Catchments outside these Special Areas, making up more than 70 per cent of the total catchments, were only *"in poor to fair condition over large areas"*.[38]

The audit noted that the major threats to water quality stemmed from existing and future development within the Outer Catchments rather than the integrity of the Inner Catchment.[39] In fact, it argued that the distinction between the Special Areas and Outer Catchment had weakened the overall catchment management regime:

> In our view, historical dependence on the Special Area mechanism to protect water quality has distorted catchment management and the allocation of resources to monitor and manage hazard over the whole of the Sydney Water catchments and in particular, the headwaters.[40]

The Catchment Authority has established a catchment improvement funding program to encourage cooperative environmental improvement programs within the Outer Catchment. The funding allows community groups, farmers and local government to apply for grants to assist in funding initiatives within the catchment areas which will have a beneficial effect on catchment health and water quality. This program has assisted funding of works such as river bank erosion and stock access control, detention and beneficial reuse of on-farm effluent and sewage treatment improvements in towns within the catchments. Total expenditure on this program over 2000/01 was approximately $2.2 million, with a further $2.3 million budgeted for 2002/03.[41]

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38 CSIRO, *Audit of the Hydrological Catchments managed by Sydney Catchment Authority: Final Report to The Minister for the Environment*, NSW State Government, December 1999, p 71.

39 CSIRO, *Audit of the Hydrological Catchments managed by Sydney Catchment Authority: Final Report to The Minister for the Environment*, NSW State Government, November 2002, p 71.

40 CSIRO, *Audit of the Hydrological Catchments managed by Sydney Catchment Authority: Final Report to The Minister for the Environment*, NSW State Government, November 2002, p 24.

41 Information provided by the Sydney Catchment Authority.

**For Map see Attachment**

### 5.1.2 Inner Catchment initiatives

The Inner Catchment – known as the Special Areas - includes Sydney's water storages, representing 370,000 hectares out of the total catchment. Human activity and development is largely excluded from these areas, allowing them to act as a filter, helping to prevent pollutants entering the stored waters.

Until 2002, the majority of the Special Areas were owned and managed by the Catchment Authority. In 2002, the Catchment Authority transferred ownership of the bulk of these lands to the National Parks and Wildlife Service (NPWS). The Special Areas are now jointly managed by the Catchment Authority and NPWS, with funding provided by the Authority. Joint management arrangements for the Special Areas are set out in the Special Area Plans of Management. Funding for these management activities is provided by the Authority through a funding agreement with NPWS. The total quantum of funding provided under the agreement amounts to approximately $3 million per annum.

The Colong Foundation submission focused particularly on major water supply storages within the Special Areas of the Blue Mountains, Warragamba, Upper Nepean and Woronora catchments. The Foundation argued that the current funding for the management of these lands is inadequate and called on the Tribunal to allow the Authority greater revenue to facilitate a significant boost in funding for management of the Special Areas.

While appreciating the importance of the Inner Catchment as a barrier to pollution, the Tribunal believes that any need for significant additional funding[42] for the Inner Catchment remains unclear. Furthermore, additional funds for Inner Catchment management do not appear to be an overriding priority relative to expenditure to improve the Outer Catchment lands.

The Tribunal is well aware that the Special Areas provide a valuable barrier in safeguarding water quality, and recognises the importance of maintaining its ecological integrity is maintained. The Catchment Authority has indicated that the likely forward expenditure requirements on catchment management have been factored in to its budget and can be fully funded within the existing price path.[43] At this time, the Tribunal has found that that there does not appear to be sufficient evidence to justify large increases in funding for management of the Special Areas.

The Tribunal intends to maintain a "watching brief" on this issue via the annual Operational Audit of the Authority, which requires it to consider the extent to which the Catchment Authority has given effect to the Special Area Plans of Management. In past Annual Audits the views and comments of the NPWS have been sought when assessing the Authority's performance with respect to the Special Areas. The Tribunal intends to continue this practice and will seek NPWS' views on whether funding is adequate to implement the Plans of Management.

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42 The Colong Foundation's submission calls an increase in funding for the Special Areas in the order of 250 per cent on current levels to $7.1 million.

43 IPART, Metropolitan Water Pricing Public Hearing, 28 November 2002, p 15.

## 5.2 No additional expenditure required at this stage to implement Regional Environmental Plan

One of the key recommendations of the McClellan Inquiry into the 1998 Sydney water contamination incidents was the establishment of a Regional Environmental Plan (REP) for Sydney's catchment areas. This plan was intended to largely prevent and/or modify future development in the Outer Catchment, which will have negative impacts on water quality. In addition, it was intended to coordinate the activities of local councils, government agencies, developers, industry and agriculture in an effort to ensure that overarching water quality outcomes are achieved.

Planning NSW has now prepared a draft REP, and undertaken extensive community consultation on this draft. The draft REP is expected to be exhibited for broader public comment around June 2003.

The draft REP sets out 4 key approaches in achieving its overall objectives:

1. The establishment of both catchment wide and specific water quality objectives. These parameters are designed to provide a focal point for other initiatives in the REP.[44]
2. Legal and planning obligations. The REP will override all local planning instruments to the extent of any inconsistency and will also set out matters which must be addressed by developers, councils, government agencies, the Sydney Catchment Authority and the Minister responsible for Infrastructure and Planning when considering any development proposals.[45]
3. Catchment Management Strategies, including the establishment of best management practices for agriculture and industry and innovative mechanisms to deliver positive catchment outcomes, such as pollution offset schemes. It is envisaged that work under this aspect of the REP will also focus on determining the level of activity and land uses which individual catchment areas can sustain without compromising water quality.[46]
4. Rectification Action Plans. The Catchment Authority is required to prepare individual sub-catchments Rectification Action Plans, that will identify existing pollution sources, risks to catchment health and set out strategies to address these deficiencies. It will also be required to undertake community consultation prior to implementing these plans.[47]

The Catchment Authority believes the implementation of the Rectification Action Plans may necessitate increased expenditure on catchment protection and management. However, if it does, the Tribunal believes this expenditure will probably be required after the 2005 price review, given that the agency is required to undertake community consultation prior to implementation.

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44 NSW Department of Urban Affairs and Planning, *Sustaining the Catchments: A draft regional plan for the drinking water catchments of Sydney and adjacent regional centres*, October 2000, p 10.

45 NSW Department of Urban Affairs and Planning, *Sustaining the Catchments: A draft regional plan for the drinking water catchments of Sydney and adjacent regional centres*, October 2000, pp 15-18.

46 NSW Department of Urban Affairs and Planning, *Sustaining the Catchments: A draft regional plan for the drinking water catchments of Sydney and adjacent regional centres*, October 2000, pp 39-41.

47 NSW Department of Urban Affairs and Planning, *Sustaining the Catchments: A draft regional plan for the drinking water catchments of Sydney and adjacent regional centres*, October 2000, pp 20-21.

## 5.3 Tribunal will further consider demand/supply imbalance at its end-of-term review of operating licences

In recognition of Sydney's finite water resources, and the need to avoid the substantial economic, social and environmental costs associated with new dams, the Catchment Authority's main customer, Sydney Water, is required by its Operating Licence to reduce per capita consumption. The current licence sets specific consumption targets for 2004/05 and 2010/11. However, Sydney Water has struggled to reduce demand to date, and the current trends in the Catchment Authority's water sales suggest it is unlikely to meet the 2004/05 target. The Tribunal notes that the current drought conditions may result in the introduction of mandatory water restrictions which would be expected to significantly curb consumption.

The short term result of this is that the Catchment Authority's water sales have increased, and its rates of return have been higher than expected. However, over the longer term, Sydney Water's inability to reduce demand could jeopardise the Catchment Authority's ability to meet its own Operating Licence commitments. The Operating Licence requires it to manage its bulk water storages in accordance with a range of performance criteria, some of which relate to security of supply and demand reduction (see Table 5.1 below).

**Table 5.1 Performance criteria under Schedule 2 of the Catchment Authority's Licence**

| Criteria | Description |
|---|---|
| **Reliability** | Catchment Authority is required to meet in full Sydney Water's Forecast Average Annual Demand requirements in not less than 97% of months, on average |
| **Robustness** | Catchment Authority is required to ensure that it will not require a reduction in Sydney Water's Forecast Average Annual Demand in not less than 90% of years, on average |
| **Security** | Catchment Authority is required to ensure that the level of its operating storage does not fall below 5%, on average, more than 0.001% of the time |
| **Drought reductions** | During drought, the System Criteria assumes that Sydney Water will reduceits demand for water from the Catchment Authority in accordance with the following restriction levels:<br>- Level I. At least a 7% demand reduction, not more than 3% of time<br>- Level II. At least a 12% demand reduction, not more than 1% of time<br>- Level III. At least a 20% demand reduction, not more than 0.5% of time<br>- Level IV. At least a 30% demand reduction, not more than 0.3% of time<br>- Level V. At least a 50% demand reduction, not more than 0.05% of time |

The Catchment Authority is also required keep its water extractions below the theoretically "safe yield" for its storages. The term "safe yield" refers to the quantity of water that can be consistently extracted from the Catchment Authority's storages without breaching the criteria set out in Table 5.1 above.

**Table 5.2 Actual and forecast water sales to Sydney Water Corporation (000 ML)**

| | 1999/2000 | 2000/01 | 2001/02 | 2002/03 | 2003/04 |
|---|---|---|---|---|---|
| **Forecast adopted by IPART for 2000 Determination** | 595 | 597 | 593 | 587 | 576 |
| **Actual/Forecast Sydney Water consumption** | 603 (Actual) | 627 (Actual) | 625 (Actual) | 612 (Forecast) | 602 (Forecast) |

The Catchment Authority currently estimates this "safe yield" to be 600,000 Megalitres (or 600 Gigalitres) per annum. The Tribunal is concerned that water usage levels have been in excess of the "safe yield" for the past three years. Given consumption to date for the current 2002/03 financial year, there is a high likelihood that the "safe yield" will again be exceeded.

The Catchment Authority believes that the extent to which it has exceeded the "safe yield" over the short-term is not particularly significant. However, the Tribunal is concerned that the need for greater environmental flows for the Hawkesbury-Nepean River are likely to result in significant reductions to the "safe yield."

In addition, the Catchment Authority's water supply is also subject to further pressures such as rapid population growth (and hence growth in demand for water) within the Sydney basin. Some forecasts estimate that Sydney's population will reach 5 million by 2020.[48]

Potentially, the Catchment Authority may also have to modify or cease completely inter basin water transfers from the Shoalhaven River to storages supplying the Sydney metropolitan area, to ensure that sufficient water is available to support a growing population in the Shoalhaven region, as well as enhanced environmental flows. This is an important drought reserve for the Catchment Authority and any restrictions on its use would effectively reduce the yield from its storages.[49]

The Hawkesbury-Nepean River Management Forum and Water CEOs Taskforce are currently considering ways to deal with these pressures. The options being considered include allowing more frequent, longer and/or more severe water restrictions. This would increase the amount of water the Catchment Authority could reliably release from its storages to meet demand, as less storage would be needed to avoid restrictions. Other possibilities include reducing demand through the demand management targets in Sydney Water's licence, improving management of irrigation downstream from the storages, and increasing the use of alternative water supplies (such as reuse and recycling).[50]

The Tribunal intends to consider these issues further, along with the outcomes from the Hawkesbury-Nepean River Management Forum and Water CEOs Taskforce, as part of its End of Term reviews of the Operating Licences for Sydney Water and the Catchment Authority. It expects to begin these reviews in late 2003.

## 5.4 Step Pricing

*Finding 7: The Tribunal found that it would be inappropriate to establish a step price at this price review, but it will reconsider this issue at the 2005 price review.*

One of the issues the Tribunal raised in its issues paper for this review was the possibility of introducing a step price for the bulk water Sydney Water purchases from the Sydney Catchment Authority, to create a stronger commercial incentive for the agency to pursue demand management. The Tribunal received submissions from stakeholders supporting this approach as well as submissions urging it not to pursue it in isolation of other pricing

48 IPART, *Mid-term Review of Sydney Catchment Authority's Operating Licence, Report to Minister for the Environment*, September 2002, p 17.

49 IPART, *Mid-term Review of Sydney Catchment Authority's Operating Licence, Report to Minister for the Environment*, September 2002, p 17.

50 IPART, *Mid-term Review of Sydney Catchment Authority's Operating Licence, Report to Minister for the Environment*, September 2002, p 17.

reforms. After carefully considering all these submissions the Tribunal was not persuaded that it would be appropriate to implement a step price at this price review. The main reasons for this decision include:

- The need to further develop a comprehensive demand management strategy prior to the introduction of a step price. The development of such a strategy needs to consider a range of incentive mechanisms and policy instruments including more comprehensive consideration of both wholesale and retail pricing structures.
- Uncertainty about the sustainable yield from the catchment that will exist until a decision is made on environmental flows in the Hawkesbury Nepean system.
- Uncertainty about the impact of a step price on the financial viability of Sydney Water and the Sydney Catchment Authority.
- The need to consider what happens to the funds the Sydney Catchment Authority would generate from a step price.

The Tribunal believes there may still be merit in introducing a step price structure. It intends to explore how such a structure would operate as part of a comprehensive policy to deal with Sydney's demand and supply imbalance.

### 5.4.1 What is a step price?

Some stakeholders have criticised Sydney Water for its inability to further curb water demand. Some have linked this inability to the pricing structures under which the agency operates. Under these structures, the more water Sydney Water sells, the higher its profits. This creates a financial incentive for it to sell more water rather than less (as is required to meet its demand management targets). This incentive is partly offset by other incentives created in its operating licence (such as those to reduce water demand) and by requirements in the Sydney Water Act for it to consider ecological sustainable development.

Under the existing arrangements, Sydney Water's demand management program costs are allowed for within its revenue requirement for price setting purposes. However, the opportunity cost of the program—that is, the cost of lost water sales revenue due to success in reducing water demand—is not. Thus, there is a financial incentive for Sydney Water to maximise water use, in contradiction to its demand management program objectives.

One way to create a financial incentive would be to introduce a step price for the bulk water the agency purchases from the Sydney Catchment Authority. With a step price, Sydney Water would pay one price for a predetermined volume of water, and a higher price (or step price) for each additional kilolitre of water it purchases over that volume (or step quantity).

A step pricing structure would allow the Tribunal to determine the opportunity cost of demand management, based on the step price that is set. It would also make Sydney Water's demand management program more cost effective, as the agency would not be allowed to pass on to customers the additional cost for bulk water it purchases over the step quantity.

In addition, the extra funds that the Sydney Catchment Authority would generate through the step price would provide it with a signal to investigate alternative approaches to increasing the supply capacity. These might include, for example, specific supply augmentation projects acknowledging the Government's policy of no new dams, or contractual arrangements with Sydney Water to fund additional demand management

programs where these are cost effective. The likely additional revenue and how it should be utilised is an issue which the Tribunal believes requires further consideration.

The Tribunal notes that a step price would provide a financial incentive for Sydney Water to invest in further demand management programs. How strong that incentive is would depend on what step price the Tribunal sets. Increasing the step price would make it appropriate for Sydney Water to increase the amount it invests in demand management—but it would not provide an incentive to implement demand management projects that cost more than the step in pricing.

Although the step pricing structure merits detailed consideration, the Tribunal notes that there are a number of outstanding issues requiring further work. Potentially, a step price structure would substantially shift revenue from Sydney Water to the Catchment Authority. This could have serious implication for the financial viability of Sydney Water given its need to both service debt and fund a large capital improvement program. In addition, there is limited value in creating a strong financial incentive to pursue demand management at a higher rate than is effectively achievable.

The Tribunal, is also concerned that a step pricing mechanism which effectively ensures Sydney Water's fixed costs are fully funded by water sales up to the step point (with only marginal costs met beyond that point) will undermine the approach to incentive regulation the Tribunal is currently pursuing. This form of regulation has been critical to securing significant efficiency gains by regulated businesses over the past decade.

In their submissions to the Tribunal's price review, Sydney Water and the Sydney Catchment Authority both argued that there was insufficient information on which to base the introduction of a step price available for this price review. The Total Environment Centre and Nature Conservation Council argued differently, claiming that a step price mechanism was urgently needed to remove the perverse financial incentives for Sydney Water to sell more water.

The Tribunal while supportive of the step pricing concept, also recognises the limitations inherent in such a framework as the current financial incentive is probably not the only impediment to Sydney Water reducing demand. Many of the factors which generate demand for water are outside the control of Sydney Water such that removing the financial incentive for Sydney Water to increase water sales may only have a limited effect. These factors include population growth, climatic conditions, urban design, planning and technological development. These different drivers for demand are likely to require integrated activity from a whole of Government perspective, as currently mooted by the Water CEO's Taskforce. Step pricing is unlikely to be a panacea to the problem of the demand supply balance, however it may well be a useful tool within an overall suite of options.

Given these difficulties, the Tribunal has decided that it needs to undertake further work to better understand the incentives that would be created for Sydney Water by implementing a step price for bulk water, and will reconsider this issue at the 2005 review.

# 6 MAXIMUM PRICES AND IMPLICATIONS FOR SYDNEY WATER CORPORATION

*Finding 8: The Tribunal found that the Sydney Catchment Authority's charges for Sydney Water Corporation as set out in Tables 6.1 and 6.2 are adequate and should remain unchanged.*

The Tribunal's decision to maintain the Catchment Authority's existing price path means that both its fixed and usage prices for Sydney Water Corporation will be in line with movements in the CPI in 2003/04 and 2004/05. The Catchment Authority's actual historical charges are shown in Table 6.1 for 2000/01 to 2002/03, these charges incorporate CPI indexation as per the Tribunal's 2000 Determination

**Table 6.1 Fixed Availability Charges to Sydney Water Corporation – 1 October 2000 to 30 June 2005**

| Charge | 1 October 2000 to 30 June 2001 | 1 July 2001 to 30 June 2002 | 1 July 2002 to 30 June 2003 | 1 July 2003 to 30 June 2004 | 1 July 2004 to 30 June 2005[51] |
|---|---|---|---|---|---|
| Fixed Availability Charge (per calendar month) | $4.8 million | $4.939 million | $5.082 million | $5.240 million | $5.240 million x (1 + ΔCPI) |

**Table 6.2 Volumetric Charges to Sydney Water Corporation – 1 October 2000 to 30 June 2005**

| Charge | 1 October 2000 to 30 June 2001 | 1 July 2001 to 30 June 2002 | 1 July 2002 to 30 June 2003 | 1 July 2003 to 30 June 2004 | 1 July 2004 to 30 June 2005[52] |
|---|---|---|---|---|---|
| Volumetric Charge (per megalitre) | $104 | $107.00 | $110.10 | $113.53 | $113.53 x (1 + ΔCPI) |

51 ΔCPI refers to the movement in CPI over the previous financial year. The price payable by Sydney Water Corporation per calendar month for 2004/05 is $5.240 million multiplied by the sum of changes in the CPI for each of the four quarters from March 2003 to March 2004.

52 ΔCPI refers to the movement in CPI over the previous financial year. The price payable by Sydney Water Corporation for 2004/05 is $113.53 per megalitre multiplied by the sum of changes in the CPI for each of the four quarters from March 2003 to March 2004.

## 6.1 Maximum prices and implications for the Catchment Authority's other customers

The Catchment Authority supplies water to a number of customers other than Sydney Water. These customers consume less than 0.5 per cent of the annual total water demand placed on the Catchment Authority, and include:

- the Wingecarribee and Shoalhaven Councils, who acquire bulk raw water for retailing to their own customers
- firms engaged in primary production and industrial activities located in close proximity to water transport conduits or water storages or streams
- smaller final users of water, who use the water for domestic, stock and irrigation purposes.

### 6.1.1 Water supply services to Wingecarribee Shire Council

*Finding 9: The Tribunal found that the Sydney Catchment Authority's charges to Wingecarribee Shire Council as set out in Table 6.3 are adequate and should remain unchanged.*

Wingecarribee Shire Council (Wingecarribee) currently draws an average of around 3500ML of water per year from the Wingecarribee Reservoir for treatment and resale to its own customers.

As part of its 2000 Determination, the Tribunal established a volumetric charge (per megalitre) that may be levied by the Authority. In each year of the price path to 2004/05 the volumetric charge payable by Wingecarribee increases both by movements in the CPI and in nominal terms from 2001/2002. These nominal adjustments are intended to gradually bring the volumetric charge payable by Wingecarribee in line with that charged to Sydney Water Corporation for the use, essentially of the same bulk water. The charges determined by the Tribunal are set out in Table 6.3 below:

**Table 6.3 Volumetric Charges to Wingecarribee Shire Council – 1 October 2000 to 30 June 2005**

| Charge | 1 October 2000 to 30 June 2001 | 1 July 2001 to 30 June 2002 | 1 July 2002 to 30 June 2003 | 1 July 2003 to 30 June 2004 | 1 July 2004 to 30 June 2005[53] |
|---|---|---|---|---|---|
| Volumetric Charge (per megalitre) | $60 | $70 | $81.50 | $93.90 | $102.62 x (1 + ΔCPI) |

[53] ΔCPI refers to the movement in CPI over the previous financial year. The price payable by Wingecarribee Shire Council for 2004/05 is $102.62 per megalitre multiplied by the sum of changes in the CPI for each of the four quarters from March 2003 to March 2004.

As part of the current Mid Term Review, Wingecarribee Council argued that there was no justification for the annual indexation of the volumetric charge in line with movements in the CPI. Council cited the fact that while the Catchment Authority incurred only negligible operating costs in supplying bulk water to the Council, the Authority imposed substantial costs on Council, with respect to compliance with SEPP 58 and the Authority's catchment protection requirements.[54]

Whilst noting the Council's submission, the Tribunal is unable to depart from the clear National Competition Policy requirement for full cost recovery with respect to urban and rural water charges. The Tribunal also notes that no fixed availability charges are payable by the Council to the Catchment Authority and that the existing volumetric charges remain almost 25 per cent below that charged to Sydney Water for the same bulk water.

On balance, the Tribunal believes that the current price path for Wingecarribee Council is appropriate and should remain unchanged.

### 6.1.2 Water supply services to Shoalhaven City Council

*Finding 10: The Tribunal found that the Sydney Catchment Authority's charges to Shoalhaven City Council as set out in Table 6.4 are adequate and should remain unchanged.*

Shoalhaven City Council (Shoalhaven) currently has an arrangement to purchase a relatively small amount of bulk water from the Catchment Authority's Bendeela Pondage, for regular supply to the Kangaroo Valley township. This involves some 100 properties and about 80ML per annum.

In addition, during extreme drought periods Shoalhaven may need to purchase water from the Catchment Authority as a bulk supply from Tallowa Dam to supplement its own water supply. To date, it has not needed to do so, however at the public hearing, the Catchment Authority foreshadowed that this may be required should current drought conditions persist.

In the 2000 Determination, the Tribunal established one volumetric charge (per megalitre) for bulk water supplied from Bendeela Pondage and Tallowa Dam. The charges determined are identical to those charged to Wingecarribee Council. The existing path for Shoalhaven Council is set out at Table 6.4.

**Table 6.4 Volumetric Charges to Shoalhaven City Council – 1 October 2000 to 30 June 2005**

| Charge | 1 October 2000 to 30 June 2001 | 1 July 2001 to 30 June 2002 | 1 July 2002 to 30 June 2003 | 1 July 2003 to 30 June 2004 | 1 July 2004 to 30 June 2005[55] |
|---|---|---|---|---|---|
| Volumetric Charge (per megalitre) | $60 | $70 | $81.50 | $93.90 | $102.62 x (1 + ΔCPI) |

54 Wingecarribee Shire Council submission, 27 September 2002, p 1.

55 ΔCPI refers to the movement in CPI over the previous financial year. The price payable by Shoalhaven City Council for 2004/05 is $102.62 per megalitre multiplied by the sum of changes in the CPI for each of the four quarters from March 2003 to March 2004.

The Tribunal believes that the existing price path for Shoalhaven Council is appropriate and should continue.

### 6.1.3 Charges to Other Raw Water and Unfiltered Water Customers

*Finding 11: The Tribunal found that the Sydney Catchment Authority's charges to raw and unfiltered water customers as set out in Tables 6.5, 6.6 and 6.7 are appropriate and should remain unchanged.*

The Sydney Catchment Authority supplies raw water and unfiltered water to a range of other 'retail' customers. These include:

- collieries
- government departments and agencies such as the National Parks and Wildlife Service, Landcom, the Royal Botanic Gardens and Department of Urban Affairs and Planning
- religious orders, schools and scouting bodies
- industrial users
- agricultural producers
- domestic users.

Raw and unfiltered water customers represent around 60 separate customers.

In the 2000 Determination, the Tribunal determined that for 5 year price path the Catchment Authority's unfiltered water customers should align with the prices paid by Sydney Water 's customers for unfiltered water. In addition, it was determined that prices to raw water customers should remain frozen at the current total price of 44c/kL (usage only) over the 5 years.

The current Sydney Catchment Authority charges for unfiltered and raw water are shown in Tables 6.5 to 6.7 below.

**Table 6.5 Annual unfiltered water service charges in 2000/01 to 2004/05 ($ of the year)**

| Service connection (nominal diameter) | Service Charge $ |
|---|---|
| 20mm | 75.00 |
| 25mm | 117.20 |
| 30mm | 168.75 |
| 32mm | 192.00 |
| 40mm | 300.00 |
| 50mm | 468.75 |
| 80mm | 1200.00 |
| 100mm | 1875.00 |
| 150mm | 4218.75 |
| 200mm | 7500.00 |
| >200mm | (nominal diameter)$^2$ x 75/400 |

**Table 6.6 Unfiltered water usage charge in 2000/01 to 2004/05 ($ of the year)**

| Charge | 1 October 2000 to 30 June 2001 | 1 July 2001 to 30 June 2002 | 1 July 2002 to 30 June 2003 | 1 July 2003 to 30 June 2004 | 1 July 2004 to 30 June 2005[56] |
|---|---|---|---|---|---|
| Unfiltered Water Volumetric Charge (per kilolitre) | $0.73 | $0.737 | $0.743 | $0.751 | $0.751 x (0.98 + ΔCPI) |

**Table 6.7 Raw water charges in 2000/01 to 2004/05 ($ of the year)**

| Charge | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 |
|---|---|---|---|---|---|
| Volumetric Charge (per kilolitre) | $0.44 | $0.44 | $0.44 | $0.44 | $0.44 |

The Tribunal believes that charges listed above are appropriate and should be continued for the remainder of the price path.

[56] ΔCPI refers to the movement in CPI over the previous financial year. The price payable per kilolitre for unfiltered water for 2004/05 is $0.751 plus 0.98 multiplied by the sum of changes in the CPI for each of the four quarters from March 2003 to March 2004.

### 6.1.4 Pensioners

The Catchment Authority has advised that two of its unfiltered water customers are pensioners. When Sydney Water supplied these customers they received a pensioner rebate equal to the water service charge. The Catchment Authority has continued this practice and provides these customers with a rebate equivalent to 100 per cent of the water service charge. These customers continue to pay the standard usage charge for water consumed. The Tribunal believes this arrangement is appropriate and should continue.

### 6.1.5 Exempt properties

Currently, there are four schools and one charity with unfiltered water that are also exempt from the water service charge. Prior to the formation of the Catchment Authority they were considered exempt properties by Sydney Water under the terms of the *Sydney Water Act, 1994*.[57] The Catchment Authority has continued this practice.

[57] Section 67 of that Act prohibits Sydney Water from imposing Service Charges on lands that are described in Part 1 of Schedule 2 of its Act.

# 7 ISSUES ARISING FROM THIS REVIEW FOR SYDNEY CATCHMENT AUTHORITY TO CONSIDER PRIOR TO THE 2005 REVIEW

The 2003 Mid-term review of prices for the Authority's water services has raised a number of broader regulatory policy issues that the Tribunal wishes to consider in more detail during the next two years, prior to the 2005 price review. The most significant issues include:

- consideration of the Authority's budgeting process and how operating expenditure efficiencies are identified and implemented.
- developing an approach to regulating and rewarding capital expenditure efficiencies.
- developing a robust and auditable suite of catchment indicators or performance measures for both the Outer Catchment and Special Areas.
- examining long run asset management and renewals funding.
- further consideration of a step-pricing mechanism.
- The Tribunal intends to establish a reference group that comprises representatives of each agency and other interested stakeholders, to allow the formal discussion of proposals as they are developed. Where needed, it will also release issues papers or undertake further consultation.

The Tribunal recognises that it may not be able to resolve all of these issues by the next price review, and will try to prioritise the list and tackle the most important issues first. Many of the recommendations that result from this process may, if implemented, require the water agencies to improve their information reporting capabilities. Where this is the case, the Tribunal will specifically discuss the requirements with each agency to identify how feasible meeting the information reporting needs will be. In some instances, namely catchment management issues, the Tribunal may endeavour to progress these issues via the upcoming End of Term Review of the Catchment Authority's Operating Licence.

In addition, this report has raised a number of items that the Tribunal requires the Catchment Authority to consider and report back on prior to the 2005 price review. These include:

- the development of robust asset management planning processes to justify capital expenditure projects and demonstrate that sufficient expenditure is being made on essential infrastructure renewals and maintenance
- detailed consideration of implementation issues and overall viability of a 'step pricing' mechanism including the price level at which the 'step' would take effect and options for the effective use of any additional funds raised by the Authority
- analysis to determine the optimal level of debt gearing for the Authority to allow sustainable expenditure and long term financial viability
- evidence of the use of the Authority's best endeavours to reach an agreed position with the National Parks Service on appropriate levels of funding to facilitate the sustainable management of the Catchment Special Areas and the development of performance measures to determine the effectiveness of the funding.

# GLOSSARY

| | |
|---|---|
| AAV | Assessed annual value |
| Authority | Sydney Catchment Authority |
| Catchment Authority | Sydney Catchment Authority |
| CEOs | Chief Executive Officers |
| CPI | Consumer price index |
| GL | Gigalitre. One gigalitre equals one billion litres or one thousand Megalitres. |
| Halcrow | Halcrow Pacific Pty Ltd |
| IPART | Independent Pricing and Regulatory Tribunal of New South Wales |
| IPART Act | *Independent Pricing and Regulatory Tribunal Act, 1992* |
| ML | Megalitre. One million litres. |
| kL | Kilolitre (1000 litres) |
| RAB | Regulatory Asset Base |
| REP | Regional Environmental Plan |
| SEPP 58 | State Environmental Planning Policy 58 – Protecting Sydney's Water Supply |
| Sydney Water | Sydney Water Corporation |
| Tribunal | Independent Pricing and Regulatory Tribunal |
| WACC | Weighted average cost of capital |

# APPENDIX 1 LIST OF SUBMISSIONS

### Submissions in relation to the Issues Paper of June 2002

Australian Water Association
Central Coast Community Environment Network
Colong Foundation for Wilderness
Economic Planning Advocacy
Environment Protection Agency of New South Wales
Energy and Water Ombudsman
Gosford City Council
Gosford Wyong Joint Water Authority
Hornsby Shire Council
Department of Housing
Hunter Water Corporation
Incitec Pty Ltd
National Standards Commission
Nature Conservation Council of New South Wales
National Parks and Wildlife Service of New South Wales
Public Interest Advocacy Centre
Stormwater Industry Association
Sydney Catchment Authority
Sydney Water Corporation
Total Environment Centre
Urban Development Institute of Australia
Warringah Council
Wingecarribee Shire Council
Wyong Shire Council

Mr R Banyard
Mr F Keep
Mr Walter Wood

# APPENDIX 2 PRESENTERS AT THE PUBLIC HEARING

**The list of presenters at the public hearing on 28 November 2002 were:**

Mr Graeme Head, Sydney Catchment Authority
Mr Richard Warner, Sydney Catchment Authority

Mr John Kitney, Sydney Water Corporation
Mr Ron Quill, Sydney Water Corporation
Mr Paul Freeman, Sydney Water Corporation

Mr Simon Smith, Environment Protection Authority

Mr Leigh Martin, Total Environment Centre
Mr Peter Prineas, Nature Conservation Council of NSW

Mr Jim Wellsmore, Public Interest Advocacy Centre

Mr John Wood, Stormwater Industry Association of NSW

Mr Peter Price, Urban Development Institute of Australia
Mr Laurie Rose, Urban Development Institute of Australia

Ms Beryl Jamieson, Department of Housing
Mr Tony Deane, Department of Housing

# APPENDIX 3 SYDNEY CATCHMENT AUTHORITY PROPOSED CAPITAL PROGRAM (FORECAST $,000, 2002/03$)

| Category | Project | 2002/03 | 2003/04 | 2004/05 | Totals |
|---|---|---|---|---|---|
| **Asset maintenance and renewal** | (C11304) Upgrade roads | 500 | | | 500 |
| | (C17302) Warragamba Dam stopboards and screens | | | 238 | 238 |
| | (C17303) Warragamba Dam stopboard storage racks | | 146 | | 146 |
| | (C17306) Upper Canal refurbish aqueduct stage 2 | 1530 | 312 | | 1842 |
| | (C17313) Upgrade hydro/WQ monitoring | 100 | 98 | 95 | 293 |
| | (C23102) Warragamba ancillary values | | 195 | 95 | 290 |
| | (C23102) Greaves creek cascade upgrade | | | 48 | 48 |
| | (C25104) Warragamba refurbish stoplog rail | | 98 | 352 | 450 |
| | (C25105) Warragamba electrical upgrade | 200 | 585 | 2855 | 3640 |
| | (C25106) Warragamba upgrade lifts | 100 | 439 | | 539 |
| | (C25107) Warragamba upgrade crest crane | 100 | 244 | | 344 |
| | (C25110) Warragamba pipeline fencing | 2025 | | | 2025 |
| | (C25116) Bulk water access road upgrade | 1000 | 1659 | 761 | 3420 |
| | (C73399) Working plant and equipment | 250 | 244 | 238 | 732 |
| | | | | | |
| **Mandatory standards** | (C17307) Upper Canal bridge upgrades | 300 | 829 | 761 | 1890 |
| | (C22201) Warragamba environmental flow modifications | | | 571 | 571 |
| | (C22202) Metropolitan Dams environmental flow modifications | | 195 | 952 | 1147 |
| | (C22203) Woronora environmental flow modifications | 1500 | 293 | | 1793 |
| | (C25108) Warragamba upgrade spillway gate control | 200 | 293 | | 493 |
| | (C2221B) Tallowa Dam fishway/offtake | | 1951 | 3998 | 5949 |
| | (C25103) Warragamba Dam modify drum gate struts | 100 | 242 | | 342 |
| | (C25112) Prospect Reservoir upgrade scours | 200 | 1951 | 1570 | 3722 |
| | (C25115) Warragamba dam safety | 100 | 1463 | | 1563 |
| | (C2511A) Warragamba spillway | 7000 | 10732 | 2380 | 20111 |
| | (C41403) Groundwater monitoring equipment | 170 | 98 | | 268 |
| | (C61101) Warragamba pipeline access platforms | 600 | 878 | | 1478 |
| | (C73201) Site office fitouts | 300 | 49 | 48 | 396 |
| | (C73202) Office accommodation Penrith | 200 | 49 | 2380 | 2629 |
| | | | | | |

| Category | Project | 2002/03 | 2003/04 | 2004/05 | Totals |
|---|---|---|---|---|---|
| **Discretionary standards** | (C11301) Land acquisition | 2000 | 1951 | 1904 | 5855 |
| | (C17304) Blue Mountains SCADA upgrade | | | 286 | 286 |
| | (C17308) Upper canal drainage upgrade | 100 | 293 | 571 | 964 |
| | (C17310) Shoalhaven SCADA upgrade | 500 | 1518 | | 2018 |
| | (C23101) Warragamba pipeline flow control upgrade | | | 190 | 190 |
| | (C23104) Upper canal strategic upgrade options study | 250 | | | 250 |
| | (C25102) Warragamba outlet valves | 300 | 2878 | 1428 | 4606 |
| | (C25111) Warragamba pipeline spares and fittings | 200 | 537 | | 737 |
| | (C25113) Prospect Reservoir upgrade channel | 369 | | | 369 |
| | (C25114) Prospect Reservoir raw water pumping station | 250 | 2439 | 6901 | 9590 |
| | (C71301) Tallowa Dam hydro | 50 | 1122 | 5235 | 6407 |
| | (C71302) Bulk water mini hydro | 100 | 195 | 761 | 1056 |
| | (C73204) Upgrade Braidwood heritage buildings | 500 | 49 | 48 | 597 |
| | | | | | |
| **Efficiency** | (C73203) Upgrade dam cottages | 300 | 20 | 19 | 339 |
| | (C73204) Upgrade Braidwood cottages | 750 | 20 | 19 | 789 |
| | (C73208) Upgrade conference facilities | 50 | 49 | 48 | 147 |
| | (C73206) IT system upgrades | 98 | 95 | 93 | 286 |
| | | | | | |

# APPENDIX 4 BUILDING BLOCK METHODOLOGY AND INCENTIVE REGULATION USING CPI ± X

*Building Block Methodology*
The Tribunal has adopted a building block approach to calculate the revenue requirement of the metropolitan water agencies. The revenue requirement for a particular year in the price path can then be expressed as:

Revenue Requirement = Operating Expenditure + Depreciation + Return on Assets

The return on assets can be further broken down into:

Return on Assets = Rate of Return x Regulatory Asset Base

Each element of the building block revenue requirement is considered in detail below.

*Operating expenditure*
Operating expenditure is determined by reviewing the proposals of the water agency to determine what an efficiently operating business could be expected to need to operate the business effectively, without compromising service quality.

For this review, Halcrow was engaged to review operating expenditure for efficiency, which was a key input to the Tribunal's operating expenditure allowance decision. Halcrow's approach to reviewing operating expenditure involved starting with a base year (1999/2000) for actual operating expenditure. Efficient operating expenditure in subsequent years was calculated by increasing base year operating expenditure for reasonable uncontrollable cost rises, such as real wage increases, electricity cost rise, growth allowances, while assuming a degree of efficiency attainment by the business during the same period. The subsequent operating expenditure was Halcrow's view as to what an efficiently run water business in the Catchment Authority's position could be expected to operate the business for.

On the basis of Halcrow's review and comments by the agency, the Tribunal decided that the Authority's operating expenditure forecasts for 2003/04 and 2004/05 were reasonable in the circumstances. This issue is discussed further at 4.2.

*Capital Maintenance*
An allowance is made for capital maintenance, also referred to as depreciation, recognising that during the provision of services to customers, the water agencies capital infrastructure will wear out. An efficiently operating water business will therefore allow for the cost of maintaining the financial capital base within current revenue requirements.

Capital maintenance is calculated on a straight line basis, over the average life of the assets. This means that the total value of the regulatory asset base is recovered within that period, which is assumed to be 70 years for water assets.

It is the combination of an allowance for capital maintenance, and a return of assets which ensures that the existing investment in the water business is maintained in perpetuity.

*Return on assets*

The return on assets is an allowance for a return to the capital investor in the water business. It ensures that efficient investment in capital continues into the future for the maintenance and growth of the infrastructure system.

It is calculated as a percentage of the regulated asset base, reflecting a commercial return to the financial assets of the business. All new investment is rolled into the regulatory asset base resulting in it earning a commercial rate of return, set by the Tribunal. The rate of return is determined with reference to the weighted average cost of capital – a measure of the cost to the business for investing in capital.

The building block methodology is an important part of the Tribunal's considerations when determining prices for the regulated agencies. However, it is not used in isolation from the exercise of the Tribunal's regulatory judgement, and may be modified reflecting the Tribunal's considerations of the social or environmental impacts of its pricing decisions.

*Incentive regulation using CPI±X*

The determination of the revenue requirement using the building block methodology gives the Tribunal an indication of the amount of revenue which an efficiently operated water business requires. An important part of regulation however, is to encourage the regulated water businesses to achieve the efficiency targets implied in the building block approach. This is what is known as incentive regulation, and the Tribunal's preferred approach is the use of CPI±X.

CPI±X means that once the revenue requirement is determined within a year, subsequent years prices are increased by general price inflation measured by the CPI index, modified by an X factor. The X factor represents positive or negative adjustments to prices, above or below general price rises.

The CPI±X approach provides an incentive to the business to pursue efficiencies because for the regulatory period they retain the benefits in full of any efficiency gains through higher profits (compared to their profits if they had not achieved these efficiencies). If the agency betters the efficiency target allowed in the revenue build-up, actual profits will be higher than the rate of return allowed in the revenue build-up. If the agency does not achieve the expected efficiency improvements the reverse applies.

It is through the separation of actual revenues from actual costs and profits once the CPI±X price path has been set that provides the incentives for the achievement of efficiency improvements in the delivery of the business' services to customers.

# APPENDIX 5 PROVISION OF SUFFICIENT REVENUE FOR ESSENTIAL RENEWALS AND MAINTENANCE EXPENDITURE

The provision of infrastructure by regulated utilities, especially for water, electricity, gas and rail transport, is an integral part of the delivery of these services to customers. Infrastructure related costs account for a large proportion of the total annual costs for delivery of these services.

IPART, like many price regulators, allows funding of infrastructure related costs through its use of the building block revenue approach to calculating the revenue requirements of regulated utilities. Any annual operating costs relating to infrastructure, for example repairs and maintenance, is allowed for directly in the building block revenue. Capital expenditure to replace worn out infrastructure and due to an increase in customers is funded through an allowance for capital maintenance (depreciation) and a return on capital. This is calculated indirectly as capital expenditure is included in the regulatory asset base (RAB) which subsequently earns a rate of return and is depreciated.[58]

While this existing approach ensures that sufficient revenue is provided to fund capital expenditure and ongoing infrastructure operating expenditure, it relies on a number of key assumptions which have implications for the operation of the regulated utility.

First, it assumes that the utility can fund capital expenditure through debt or equity financing. Once the capital expenditure has been incurred, by inclusion in the regulatory asset base, it attracts a rate of return and is depreciated which should provide sufficient revenue to pay any debt or equity financing costs.

The ability of the utility to fund capital expenditure, through debt financing especially, depends on its overall financial viability and cash flow. If debt levels are already high, then the utility's inability to debt finance may become a limiting factor to the provision of infrastructure especially when unexpected capital expenditure is required to maintain the system. In a workably competitive market, it would be expected that in these circumstances the injection of additional equity from the owners may be required. For a regulated business, the regulator may also need to consider whether a temporary increase in prices to increase cash flows is appropriate.

Second, the building block approach to funding capital expenditure relies on an estimate of the average asset life of the assets. To the extent that this estimate is incorrect, then revenue shortfalls could occur unless significant price increases are allowed. For this reason the Tribunal uses conservative average asset lives of 70 years for water infrastructure. As the actual average asset life of these assets are likely to be well in excess of 70 years, the existing approach should amply provide for asset replacement.

Third, the utility may reduce investment in renewing infrastructure or reduce expenditure in essential repairs and maintenance, as an easy short term way of achieving cost efficiencies. The regulatory approach assumes that the utilities' capital expenditure priority setting process and operating budget allocation process assesses the risk to the business of reducing renewals related expenditure to achieve cost savings. To the extent that these risks are not

[58] See Appendix 4 for further details on the building block approach and incentive regulation.

considered by the business when reducing renewals expenditure, this may lead to problems in the medium to long term.

Finally, there appears to be general concern amongst regulated utilities about the need to fund renewals capital expenditure through existing depreciation allowances, reflecting an adversity to debt or equity finance renewals capital expenditure. As depreciation reflects past capital expenditure - many of which have been considered sunk costs by regulators - it need not equal current renewals capital expenditure requirements. Looking forward however, future renewals capital expenditure will be funded through depreciation allowances for the life of these new replacement assets rendering any comparisons with current depreciation allowances of limited value.

The validity of each of these assumptions can affect the regulated utilities ability to in practice ensure the continued maintenance of the infrastructure of their businesses. Where the availability of capital is limited, there is considerable uncertainty surrounding asset lives and where the business culture results in efficiency gains resulting in a reduction in expenditure on key repairs and maintenance then infrastructure may not be properly maintained.

The impact of regulation on the provision of sufficient revenue is of critical concern to the Tribunal. Assessing the use of asset management plans will increasingly become an approach adopted by the Tribunal to address this concern at future price reviews.

# APPENDIX 6 REGULATORY ASSET BASE AND RATE OF RETURN

**Table A6.1 Forecast revenue requirements (pre-tax and excluding capital contributions and unregulated income)**

**COMBINED BUSINESS ($ millions, nominal)**

| Financial year ending 30 June | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|
| Opening fixed asset value | - | - | - | - | - | 785 | 837 |
| plus net capital expenditure[1] | - | - | - | - | - | 35 | 37 |
| less disposals | - | - | - | - | - | - | - |
| less depreciation | - | - | - | - | - | (8) | (9) |
| plus indexation | - | - | - | - | - | 24 | 26 |
| Closing fixed asset value | - | - | 735 | 746 | 785 | 837 | 891 |
| Working capital (closing balance) | - | - | 2 | 2 | 2 | 2 | 2 |
| Total regulatory asset base | **-** | **-** | **737** | **748** | **787** | **839** | **893** |
| | | | | | | | |
| Operating expenditure | - | - | 57.8 | 73.5 | 75.6 | 78.0 | 79.4 |
| Depreciation | - | - | 7.2 | 7.5 | 7.7 | 8.2 | 8.6 |
| Tax payable (less franking credits) | - | - | - | - | - | - | - |
| Expected return on assets | - | - | 55.5 | 42.1 | 43.3 | 42.4 | 42.4 |
| Expected revenue | - | - | 120.4 | 123.1 | 126.6 | 128.6 | 130.4 |
| | | | | | | | |
| *Indexation of working capital*[2] | - | - | 0.1 | 0.1 | 0.1 | 0.1 | 0.062 |
| Return on assets (%, real pre-tax)[2,3] | **-** | **-** | **7.9%** | **5.7%** | **5.6%** | **5.2%** | **4.9%** |

1. Net capital expenditure is capital expenditure net of all capital contributions.
2. The indexation of working capital ($ value) is subtracted from the total expected return on assets to calculate the real return. The opening balance plus half of the change during the year is indexed, if working capital is included in the RAB.
3. The real return on assets is calculated on the average asset base for the year.

*What is the regulatory asset base, and how is it rolled forward?*

The regulatory asset base (RAB) is a measure of the financial assets in the water business and bears no relationship to the physical assets. It is based on the value a market would place on the business if it was to be sold, given its potential to earn revenue and profits under existing prices.

The RAB exists as the basis for determining the return of and on capital in the revenue requirement calculation based on the building block approach. The reason for adopting a financial capital base for regulatory purposes is to ensure that an appropriate rate of return is given to the shareholder's investment in the business. It also ensures that efficient investment is made in the refurbishment and enhancement of existing assets, by allowing new financial investment to attract a commercial rate of return, reflecting risks associated with the business.

The RAB is rolled forward by adding new, prudent capital expenditure from the closing value of the previous year. The RAB is modified to account for inflation, disposal of assets and depreciation.

# APPENDIX 7 WEIGHTED AVERAGE COST OF CAPITAL PARAMETERS

The parameters used to generate the weighted average cost of capital are presented in table A7.1 below.

**Table A7.1 Parameters used to generate the weighted average cost of capital**

| Parameter | Value |
|---|---|
| Nominal risk free rate | 5.1%[1] |
| Real risk-free rate | 2.9% |
| Inflation | 2.2%[2] |
| Market risk premium | 5 - 6% |
| Debt margin | 0.7 - 1% |
| Debt to total assets | 60% |
| Dividend imputation factor (Gamma) | 0.5 - 0.3 |
| Tax rate | 30% |
| Asset Beta | 0.3 - 0.45 |
| Debt Beta | 0.06 - 0.14 |
| Equity Beta | 0.65 - 0.90 |
| Cost of equity (nominal post tax) | 8.4 - 10.5% |
| Cost of debt (nominal pre tax) | 5.8 - 6.1% |
| WACC (nominal post tax) | 5.2 - 6.3% |
| WACC (real post tax) | 3.0 - 4.1% |
| **WACC (real pre tax)** | **5.2 - 6.7%** |

Notes:

1. The nominal risk free rate is based on 20 days average of the 10 year Commonwealth bond rate up to 15 April 2003.
2. The inflation rate used in the WACC calculation is based on observed differences in nominal and real 10 year bond rate indexes. These differences reflect market expectations of the long term inflation rate.

The Tribunal reviewed its methodology for calculating the WACC range in 2002, and sought stakeholder comments on whether the WACC range should be presented in real or nominal terms - pre or post-tax. In its submission, the Catchment Authority supported a continuation of the existing WACC range for the remainder of the price path period.[59] Additionally, it considered the advantages and disadvantages of using a statutory or effective tax rate.[60]

As the regulatory asset base is rolled forward in real terms, it is appropriate to report the WACC in real terms. Additionally, for consistency with previous water price determinations, the Tribunal has maintained the pre-tax WACC range, using a statutory tax rate for this price review.

59 Sydney Catchment Authority, Submission in response to IPART's Weighted Average Cost of Capital Discussion Paper, September 2002, p 2.

60 For details of the alternative approaches see the Tribunal's discussion paper, *Weighted Average Cost of Capital*, DP56, August 2002.

The Tribunal has reviewed the WACC parameters used at the 2000 determination. This has resulted in a reduction in the upper bound of the equity beta to 0.9, reflecting a view that water utilities in general are likely to have lower than market risk characteristics. Additionally, the lower bound of the debt margin was reduced to 0.7, reflecting information on the debt margins charged by Treasury Corporation to the Government owned water businesses.

The Tribunal is undertaking a comprehensive review of all of the parameters used to calculate the WACC range prior to the forthcoming distribution network service price review. This is expected to lead to additional revisions to the WACC parameters, and these will form the basis of a metropolitan water WACC range for the next price determination.

The combined impact of these parameter changes, including an update of the long term market inflation rate and 20 day average 10 year bond rate, resulted in the WACC range being 5.2 to 6.7 per cent.

# APPENDIX 8 FINANCIAL VIABILITY AND CREDIT RATINGS

| | 2001/02 | 2002/03 | 2003/04 | 2004/05 |
|---|---|---|---|---|
| **Ability to service debt** | | | | |
| 1. EBITDA interest cover | 4.63 | 4.92 | 4.40 | 3.83 |
| NSW Treasury ratings (2002) | **AAA** | **AAA** | **AAA** | **AA** |
| 2. Funds from operations interest coverage | 4.54 | 5.19 | 4.29 | 3.91 |
| Standard and Poors US ratings (1995) | **AA** | **AA** | **AA** | **AA** |
| 3. Pre-tax interest coverage | 3.34 | 4.07 | 3.62 | 3.13 |
| Standard and Poors US ratings (1995) | **AA** | **AA** | **AA** | **AA** |
| **Ability to repay debt** | | | | |
| 4. Funds flow net debt payback | 5.26 | 4.57 | 6.38 | 7.45 |
| NSW Treasury ratings (2002) | **BBB+** | **A** | **BB+** | **BB** |
| 5. Funds from operations/total debt (%) | 19% | 20% | 15% | 14% |
| Standard and Poors US ratings (1995) | **A** | **AA** | **A** | **BBB** |
| 6. Debt gearing (regulatory value) | 20% | 22% | 23% | 25% |
| NSW Treasury ratings (2002) | **AA+** | **AA+** | **AA+** | **AA+** |
| Standard and Poors US ratings (1995) | AA | AA | AA | AA |
| **Ability to finance investment from internal sources** | | | | |
| 7. Internal financing ratio | 1% | 48% | 28% | 28% |
| NSW Treasury ratings (2002) | **B** | **BB+** | **B** | **B** |
| 8. Net cash flow/capital expenditure (%) | 0% | 4% | 25% | 30% |
| Standard and Poors US ratings (1995) | **<BB** | **<BB** | **BB** | **BB** |
| **NSW Treasury overall score and rating** | | | | |
| NSW Treasury total score (0-10) | 6.00 | 7.00 | 5.50 | 4.75 |
| 1. Funds from operations interest coverage | **A** | **A+** | **BBB+** | **BBB** |

Notes:

(i) The Tribunal particularly relies on indicators based on cash flows because these are not as subjective as indicators that use components derived from estimates (eg asset value and depreciation).

(ii) The information in this table should be read and understood only after reviewing Appendix 9 and the explanations and qualifications mentioned there.

| | |
|---|---|
| 1. EBITDA interest cover: | (EBITDA excl capital contributions)/ net interest |
| 2. Funds from operations interest coverage: | (Pre-tax funds flow + net interest) / (net interest) |
| 3. Pre-tax interest coverage: | (EBIT - capital contributions) / net interest |
| 4. Funds flow net debt payback: | (Debt - cash assets) / (NPAT + depreciation + tax expense - tax paid) |
| 5. Funds from operations/total debt (%): | see note below for definition of funds from operations |
| 6. Debt gearing (regulatory value): | (Debt - cash assets) / (regulatory value of fixed assets + working capital) |
| 7. Internal financing ratio: | (NPAT - cap cons + depreciation – dividends payable / net capex) |
| 8. Net cash flow/capital expenditure (%): | (Funds from operations – dividends) / (capex net of capital contributions) |
| 9. Net debt: | Total debt less cash, short-term and long-term investments |

# APPENDIX 9 FINANCIAL INDICATORS

The indicators of financial performance include notional credit ratings of regulated businesses. Indicative benchmarks supplied by Standard and Poor's (S&P) ratings group that are published from time to time[61] are used to estimate these ratings. The indicative ratios are used by S&P as one of its analytical tools in setting overall ratings, and the Tribunal uses the indicators in a similar manner, ie as part of the overall financial analysis of the regulated business. The overall ratings that have been or may be derived by S&P for a business cannot be derived from simple inspection of these ratios.

- Indicative ratios for each ratio for each year during the medium term price paths set in 2000 were published in the Tribunal's Determinations for each of the regulated water businesses. The calculation and assessments are those of the Tribunal and not S&P.

The actual rating process used by S&P is very broad, involving subjective judgements of industry risk and cost structures, not just financial ratios. S&P use both qualitative and quantitative analyses in determining an entity's rating. The ratios used by the Tribunal in its financial analysis are part of the latter – they should be used as a guide rather than as blanket reasons for giving a certain rating. The overall ratings that have been or may be derived by S&P for a business cannot be derived from simple inspection of these ratios.

S&P divide its analysis into:

- business risk - including market position, technology, efficiency and management capabilities, the prospects for growth in the industry, and vulnerability to technological changes or labour unrest or regulatory changes and
- financial risk - looking at financial management policies, cash flow protection, capital structure and profitability.

S&P's analysis incorporates an evaluation of a company's business and financial risks. In its guideline ratios, S&P provided financial indicator ranges for each of 'above average' business position, 'average' business position and 'below average' business position. During the analysis undertaken in 2000 as part of the determination process, the Tribunal decided that each of the regulated water businesses had an 'excellent' risk profile.

An acceptable range of financial ratios for each rating category will differ from time to time according to the unique characteristics of the business. There may not be a perfect match between the ratios and the indicator rating; the ratios represent midpoints of ranges, and vary during an investment cycle, particularly the internal financing ratio. In addition, S&P's credit ratings are prospective, with ratings reflective of a company's expected financial profile. For this reason, the ratings indicated by the ratios for each of the regulated businesses based on one year's financial results may not be the same as the actual rating given by S&P.

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61 Two sets of ratios have been used, for consistency with the financial analysis undertaken by the Tribunal during the 2000 determination process. The 'NSW Treasury Rating' indicators are from *The Capital Structure for NSW Government Trading Enterprises* report produced in August 1994 by NSW Treasury as part of its financial policy framework for GTEs, and are based on ratios provided to Treasury by S&P. The "S&P" criteria are from S&P's Corporate Finance Criteria for 1995.