

SYDNEY CATCHMENT AUTHORITY

PRICES OF WATER SUPPLY SERVICES

Medium-term price path from 1 October 2000

**INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES**

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INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

**REPORT TO THE PREMIER ON THE DETERMINATION OF MAXIMUM PRICES UNDER
SECTION 12 (1) (a) OF THE INDEPENDENT PRICING AND REGULATORY TRIBUNAL
ACT, 1992**

Reference No: 99/206

Report: 10

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 8 February 2000 and published in Gazette No. 22 dated 11 February 2000 at page 816.

1 INTRODUCTION

The Sydney Catchment Authority (the Catchment Authority) was created by the NSW Government in July 1999, in response to the Sydney Water Inquiry. Its purpose is to manage the water catchment areas and infrastructure within its jurisdiction and to supply bulk water to the Sydney Water Corporation (Sydney Water) and several smaller customers.

In August 1999, the Premier asked the Independent Pricing and Regulatory Tribunal of NSW (the Tribunal) to investigate and make a determination on the maximum prices the Catchment Authority can charge for water supply services for the period 1 October 2000 to 30 June 2005.¹ The Tribunal was also asked to consider the role and objectives of the Catchment Authority and the findings and recommendations of the Sydney Water Inquiry when making its determination. The full terms of reference are in Attachment 1.

The Tribunal has now completed this investigation. It has determined that the Catchment Authority's charges to Sydney Water will be held at 1999/2000 levels in 2000/01. In the following four years to 2004/05, these charges are to be maintained in real terms. In addition, usage charges to Wingecarribee and Shoalhaven Councils are to be increased over the five years, though the Catchment Authority will not be able to charge the Councils a fixed access fee.

The Tribunal believes that this determination will provide the Catchment Authority with sufficient revenue to perform its role of managing the catchments, to meet the improved water quality and environmental standards demanded of it, and to maintain a sound financial position. There is still considerable uncertainty about the level of funding the Catchment Authority needs to undertake its expanded role. Given this uncertainty, the Tribunal intends to monitor the Catchment Authority's performance and review this determination in two years time (2002/2003).

This report outlines the main issues the Tribunal considered as part of its investigation and determination in more detail. It sets out:

- the Tribunal's terms of reference
- the investigation process and form of regulation
- the implications that the service standards expected from the Catchment Authority over the price control period had for the determination
- the implications of the determination for the environment
- the financial analysis that underpins the determination
- the prices set for each service and their implications for customers.

The complete determination, which lists the maximum prices the Catchment Authority can charge for all water services, follows this report.

¹ The Premier declared all the water supply services provided by the Catchment Authority to be monopoly services in February 2000 (see New South Wales Government Gazette No 22 of 11 February 2000, p 816). At the same time, a previous declaration that referred only to the services it provided to Sydney Water Corporation was repealed.

2 THE TRIBUNAL'S TERMS OF REFERENCE

In determining prices under the *Independent Pricing and Regulatory Tribunal Act, 1992* (the IPART Act), the Tribunal is required to consider a range of economic, social and environmental issues, listed in Section 15 of the Act. As a result, the Tribunal has regard to the following objectives in setting prices:

- economic efficiency
- financial sustainability
- the promotion of competition
- equity
- environmental sustainability
- simplicity and transparency
- certainty and control of the costs of regulation.

In addition, the terms of reference for this determination asked that the Tribunal consider several other issues in setting prices, including the findings and recommendations of the Sydney Water Inquiry, the role, objectives and functions of the Catchment Authority, and the operating licences that apply to it.²

The regard the Tribunal has had to the terms of reference and the section 15 requirements is outlined in Attachments 2 and 3 respectively.

The terms of reference for this determination are for a period of just under 5 years, from 1 October 2000 to 30 June 2005.

2.1 Recommendation that the Catchment Authority become a standing reference agency

The Tribunal is to have an ongoing role as the Catchment Authority's licence regulator — a function directly linked to monitoring standards (see chapter 4).³ However, its current terms of reference specify a period of just under 5 years for this price determination. The Tribunal believes it would be in a better position to closely monitor the Catchment Authority's progress in meeting the standards laid down for it if it had a joint licensing and pricing review role on a continuous basis.

Such a role is appropriate, since the water supply services provided by the Catchment Authority have been declared as monopoly services and the Tribunal regulates the pricing of other Government monopoly services on an on-going basis. In addition, regulating the Catchment Authority's prices on an on-going basis would allow the Tribunal to review the Authority's prices and funding at any time—for example, in response to changes in its required service standards or its performance in meeting those standards.

² See Attachment 1 for the Tribunal's full terms of reference.

³ The Tribunal is not currently the Licence Regulator. Following recent legislative amendments the Tribunal will be assuming that role before the end of 2000.

For these reasons, the Tribunal will request that the Premier include the Sydney Catchment Authority as a standing reference agency in Schedule 1 of the IPART Act.

2.2 The Sydney Water Inquiry

The Sydney Water Inquiry was convened to investigate the causes of water contamination events in 1998, and to make recommendations to prevent a recurrence of these events. The Inquiry found that catchment management was a major issue and that a review of regulatory arrangements was needed.

The main catchment for Sydney's water supply is seriously compromised, not only by the presence of *Cryptosporidium* and *Giardia* but in other significant respects. These problems have been identified in previous investigations and are the result of neglect over many decades. The health of the catchment is a fundamental responsibility of our community, both for this, and subsequent generations. I have concluded that immediate action must be taken to establish appropriate catchment management and regulatory structures to ensure the catchment is not further compromised and, if possible, existing problems minimised or removed.⁴

The Inquiry's Final Report recommended that the regulatory framework controlling the operations of both Sydney Water and the Catchment Authority be strengthened to increase the accountability of these bodies to the Government and the community. It also suggested that the Operating Licence be improved through a public process and that the role and structure of the Licence Regulator be modified to permit a stronger role in the management of Sydney's water.

2.3 The Catchment Authority's objectives

The Government's principal response to the Inquiry was to establish the Catchment Authority as a separate entity, through the *Sydney Water Catchment Management Act (SWCMA), 1998*. This Act defines the Catchment Authority's principal objectives as:

- to ensure that the catchment areas and the catchment infrastructure works are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment
- to ensure that water supplied by it complies with appropriate standards of quality
- where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development as contained in section 6 (2) of the *Protection of the Environment Administration Act, 1991*
- to manage the Authority's catchment infrastructure efficiently and economically in accordance with sound commercial principles.⁵

⁴ Sydney Water Inquiry, *Third Report: Assessment of the contamination events and future directions for the management of the catchment. Executive Summary*, October 1998.

⁵ Other provisions of this legislation include:

- a concurrence role under environmental planning instruments and licensing legislation
- a compliance role for activities in or affecting catchment areas
- a requirement to establish an Operating Licence for the Authority
- definition of a financial framework for the Authority
- requirements to prepare certain report and audits.

These provisions address the Inquiry's major recommendations. Additional government responses include:

- revising Sydney Water Corporation's Operating Licence
- developing the Catchment Authority's Operating Licence (discussed below)
- preparing a Regional Environmental Plan for the catchments that provide water to Sydney and adjacent regional centres (expected to be completed shortly)
- restructuring the role of the Licence Regulator, which is now to be undertaken by the Tribunal.

2.4 Operating Licence

The Catchment Authority's operating licence sets out its responsibilities as:

- to manage and protect the Catchment Area and Catchment Infrastructure Works
- to supply bulk water
- to regulate certain activities within the catchment area
- to meet the requirements imposed in the Act
- to comply with the quality and performance standards in the licence
- to be subject to the annual audit of compliance with the licence.

The Operating Licence requires the Catchment Authority to enter into memoranda of understanding with the Water Administration Ministerial Council, the Director-General of NSW Health, and the Environment Protection Authority (EPA). It also requires the Catchment Authority to comply with a number of standards that relate to the supply of water to its customers, which are discussed in section 4 of this report.

3 INVESTIGATION PROCESS AND FORM OF REGULATION

3.1 What was the investigation process?

The Tribunal reached its determination after an extensive investigation and review process. The process began with the Tribunal releasing an issues paper, and the Catchment Authority responding with a proposal for the maximum prices it believes it needs to charge for supplying water services to its customers.

The Tribunal then invited the public and interested parties to make submissions on these proposals and other issues relating to the pricing of the Catchment Authority's services. Attachment 4 provides a list of submissions received. It also held a public hearing, where interested parties presented their views. Attachment 5 provides a list of presenters. Finally, it conducted its own analysis into the impacts of alternative pricing levels on the Catchment Authority's customers and the environment, in line with its terms of reference and Section 15 of the IPART Act.

The Tribunal made its determination, taking into account all the information and analysis obtained through the process outlined above. The Tribunal members who considered this determination are Dr Thomas Parry (Chairman), Mr James Cox (Full-time Member), and Ms Cristina Cifuentes (Member).

Copies of all submissions, and a transcript of the public hearing can be viewed on the Tribunal's website at www.ipart.nsw.gov.au, and are available for inspection at the Tribunal's office.

3.2 What form does the price regulation take?

This determination takes the form of a price cap applicable over a period of nearly 5 years. It sets specific prices for all services from 1 October 2000 to 30 June 2005. The Authority will be able to vary these prices in line with inflation using a CPI-X formula.

In deciding on the price capping approach, the Tribunal took into consideration the Catchment Authority's request for specific prices. It also considered the Public Interest Advocacy Centre's (PIAC's) support for price cap regulation for water supply agencies.⁶

The Tribunal has set a medium-term price path of just under 5 years as required by the terms of reference. This longer period has several advantages in that it:

- provides the agency with an incentive to be efficient, and with certainty about the basis on which its revenue can be obtained over a significant period of time
- provides customers with certainty about what they will be charged
- reduces the regulatory burden imposed on the agency, thus enabling it to focus on running its business rather than on making new pricing proposals each year.

⁶ Public Interest Advocacy Centre submission, p 4.

However, the Catchment Authority has only been in existence as a separate entity for just over a year, and is still developing and implementing its full range of activities, particularly in relation to catchment management. In view of this fact, the Tribunal intends to monitor the Catchment Authority's performance and will review the outcomes of this determination at the planned mid-term review in 2002/03. This mid-term review will investigate whether the price path established in this determination continues to be appropriate in light of new information that will be available at the time of the review. The planned review will align with the end of Sydney Water's determination period, and thus will facilitate the joint review of a number of matters including operating expenditure and capital expenditure.

4 IMPLICATIONS OF SERVICE STANDARDS FOR THIS DETERMINATION

The service and operating standards to which an organisation delivers its product are primary drivers of that organisation's costs. Standards, therefore, are important determinants of revenue requirements and prices. In addition, in setting prices for the Catchment Authority, the Tribunal needs to ensure that customers receive the level of service for which they are paying.

Recent amendments to the IPART Act⁷ (and other related legislation) mean that the Tribunal is to be the Licence Regulator for Sydney Water, Hunter Water and the Sydney Catchment Authority. As part of this function, the Tribunal will be responsible for conducting Operating Licence audits. The Tribunal is to review the Operating Licence for the Catchment Authority half-way through and at the end of the licence's term.⁸

The standards of service in the Catchment Authority's operating licence include quality of bulk water, catchment management, and water supply standards.

Quality standards for bulk water

The Catchment Authority must:

- supply bulk water and water for other uses that meet the quality provisions set out in the licence
- carry out water quality monitoring and reporting, as specified⁹
- prepare a five-year risk management plan that identifies and assesses sources of pollution in the catchment area, and develops proposals to reduce or remove this pollution, by 1 January 2001¹⁰
- develop a Bulk Water Incident Response Plan to the satisfaction of NSW Health. (This plan is now finalised and the Catchment Authority advises that it is being used to manage and respond to water quality events.)¹¹

⁷ *Independent Pricing and Regulatory Tribunal and Other Legislation Amendment Act, 2000.*

⁸ The Catchment Authority Operating Licence (2000) defines IPART as the Licence Review Body for the mid-term and end of term reviews. The mid term review must commence on or about 1 January 2002.

⁹ See Clause 6.6 of the Operating Licence.

¹⁰ The Catchment Authority has advised that it has produced a preliminary risk management plan and forwarded background letters on it to various authorities and Councils and that workshops are being held with stakeholders.

¹¹ Sydney Catchment Authority, Bulk Water Response Plan, 28 June 2000.

Catchment management standards

The Catchment Authority must:

- manage and operate the catchment areas and catchment improvement infrastructure to minimise the risk to human health
- implement the Special Areas Strategic Plan of Management
- review the Wingecarribee Swamp Plan of Management¹²
- comply with obligations imposed on it under the Regional Environmental Plan and State Environmental Planning Policy 58.

Water supply standards

The Catchment Authority must:

- ensure that its infrastructure is designed, operated and managed to provide Sydney Water with long-term standards of service that accord with specified performance criteria¹³
- comply with the guidelines of Australian National Committee on Large Dams (ANCOLD) and the NSW Dam safety committee
- manage water conservation consistent with the requirements placed on Sydney Water in its licence and, when considering any augmentations, first consider whether Sydney Water has any further scope for cost-effective demand management.

Many of the Catchment Authority's responsibilities, such as dam safety and continuity of supply, require compliance with a standard that can be expressed in quantitative terms. Others, such as catchment management, are qualitative in nature. The Tribunal is concerned that the Catchment Authority has not yet been able to clearly establish the linkage between standards, costs and measurable outcomes.

The Tribunal is aware of the range of activities associated with catchment management. However, the nature and effectiveness of such activities depends on the specific conditions that prevail in a given catchment. The audit of the Sydney catchment provides a snap-shot of the current state of the catchment and a check-list of gaps in current knowledge.¹⁴ Also, it has highlighted a range of issues that need to be addressed to improve the health of the catchment.

The Tribunal is required to determine revenue that allows the Catchment Authority to fulfil its required tasks efficiently and effectively. On the basis of information available to it, the Tribunal believes that the amount of revenue it has allowed for in this price determination is appropriate.

¹² The Catchment Authority has advised that a draft revised Plan of Management has been jointly developed by the Catchment Authority and National Parks and Wildlife Service. It expects that the Draft Plan will be placed on public exhibition at the end of August 2000. It anticipates that the Final Plan of Management will be submitted to the Minister by December 2000, as required by the Licence.

¹³ See Schedule 2 of the Catchment Authority's Operating Licence.

¹⁴ The CSIRO Division of Land and Water conducted an audit of the catchment in 1999. The key findings of this audit and the range of catchment indicators that the auditors developed are listed in Attachment 7 and 8.

However, as part of the next review the Tribunal will expect to see evidence, in terms of specific measurable outcomes, that the Catchment Authority has met the operating and service standards required of it.

At the public hearing the Catchment Authority advised that it had commenced a process of developing strategic priorities with action statements, costings and outcomes.¹⁵ This process has identified a number of action plans, budget allocations and status indicators¹⁶ for the following strategic priorities:

- reducing sewerage effluent impacts
- managing other discharges
- improving stormwater
- improving riverine ecosystems
- informing stakeholders, monitoring and research
- bulkwater and catchment infrastructure
- raw water quality.

The status indicators for these activities are presented in Attachment 6.

The Tribunal will examine the Catchment Authority's progress on each of these priorities as part of its next review. It may also seek expert opinion on the achievements of the Catchment Authority and how these achievements provided value to customers.

¹⁵ Public Hearing Transcripts, p 22.

¹⁶ Sydney Catchment Authority Draft Strategic Priorities Action Plan – July 2000.

5 IMPLICATIONS OF THIS DETERMINATION FOR THE ENVIRONMENT

In making its determination the Tribunal has considered the implications for the environment. In particular, it has looked closely at catchment management, the need to introduce a levy to fund improvements in catchment management, and demand management.

5.1 Catchment management

Concerns about catchment management and the impact of ineffectively managing the environment were central to the creation of the Catchment Authority. The Sydney Water Inquiry identified a range of environmental factors that may have contributed to the 1998 water contamination events, including inappropriate land use and inadequate management of sewage, stormwater, and native and feral animal populations.

The Inquiry also identified the elements needed for effective catchment management. These include:

- clear and enforceable water quality objectives for the catchment
- strong planning controls over the outer catchments that specify that developments must have a neutral or positive impact on water quality
- a catchment manager with a concurrence power in relation to development
- independent auditing of catchment health with the auditor reporting to Parliament
- effective partnership between local government and the catchment manager
- adequate resourcing to provide effective management of catchment lands and a capacity to enforce breaches of relevant statutes or regulations
- management of inner catchment areas by the National Parks and Wildlife Service for water quality and ecological purposes.¹⁷

The CSIRO Division of Land and Water conducted an audit of the catchment in 1999.¹⁸ The key findings of this audit and the range of catchment indicators that the auditors developed – listed in Attachments 7 and 8 of this report – provide a valuable resource to inform many of the catchment management programs and strategies the Authority is required to develop. These include:

- risk assessment
- the Regional Environmental Plan for the drinking water catchments and catchment improvement Program
- monitoring programs and environmental indicators
- the Special Areas Strategic Plan of Management
- environmental management and reporting responsibilities for State of the Environment reporting.

¹⁷ Sydney Water Inquiry, Third Report, Assessment of the contamination events and future directions for the management of the catchment, Peter McClellan QC, October 1998, p 8.

¹⁸ CSIRO, *Audit of the Hydrological Catchments Managed by the Sydney Catchment Authority*, December 1999.

The Tribunal will review progress in these areas as part of its next review.

5.2 The need for a catchment levy

The Peak Environment Non-Government Organisations (PENGOs) suggested that a 'catchment levy' may be needed to fund improved catchment management through new activities. They estimate that a levy of 5c/kL would provide around \$25m and equate to approximately \$5 per customer per year.

As already noted, the Tribunal thinks that this determination provides sufficient revenue for the Catchment Authority to undertake its current and known future activities. It therefore believes that such a levy is not justified at this time.

5.3 Demand Management

The demand for water from the Catchment Authority is driven directly by Sydney Water's needs. The Bulk Water Supply Agreement between the Catchment Authority and Sydney Water sets out estimates for Sydney Water's forecast average annual demand.¹⁹ However, for consistency, the Tribunal based its financial analysis for the Catchment Authority on demand equivalent to the Tribunal's estimate of Sydney Water's projected sales to its customers.²⁰ These amounts are shown in Table 5.1.

Table 5.1 Sydney Water's Forecast Average Annual Demand

('000 ML/year)	2000	2001	2002	2003	2004	2005
Bulk Supply Agreement	595	588	586	584	583	N/A
Estimates used in financial analysis	595	597	593	587	576	571

The Catchment Authority and the PENGOs suggested that the Tribunal may need to introduce price-related measures to manage demand:

- the Catchment Authority proposed that, if Sydney Water's forecast demands increase above those specified in the Agreement, one option might be to sharply increase the volumetric price above a threshold level (for example, the forecast demand level plus 20 per cent, to allow for weather-induced fluctuations)²¹
- the PENGOs supported the Catchment Authority's proposal but recommended that rather than "simply allowing a greater dividend to be returned to Government, the additional revenue should be directed toward enhancing demand management programs".²²

¹⁹ Bulk Water Supply Agreement, p 26, also Catchment Authority's Operating Licence Schedule 2.

²⁰ See IPART, *Sydney Water Corporation, Prices of Water Supply, Sewerage and Drainage Services, Medium -term price path from 1 October 2000*, September 2000, section 7.1.

²¹ Catchment Authority's submission, p 49.

²² PENGO's submission, p 15.

This proposal is in effect a penalty levied automatically by the Catchment Authority. However, the Tribunal considers that it is not appropriate for the Catchment Authority to be the agent for enforcing the penalty. Sydney Water's operating licence requires it to meet demand management targets by 2004/05. Failure to meet those targets is an issue for compliance with the Operating Licence.

Sydney Water proposed to link water usage charges to the achievement of its demand management targets. However, the Tribunal rejected this proposal, as it believes that it does not provide an effective incentive for customers in that, as they reduce water consumption, the water usage charge increases. The Tribunal believes that Sydney Water's demand management strategy must increasingly emphasise non-price initiatives such as leakage reduction, water efficiency and water recycling.

6 FINANCIAL ANALYSIS THAT UNDERPINS THE DETERMINATION

Based on its analysis, the Tribunal believes that the Catchment Authority can meet its standards and environmental obligations and remain financially viable with the revenues shown in Table 6.1, below.

Table 6.1 Tribunal's estimate of the Catchment Authority's total revenue (\$ m of the year)

	2000/01	2001/02	2002/03	2003/04	2004/05
Annual revenue	116.7	119.9	122.9	125.5	128.9

Note: 2000/01 revenue shown is the annual equivalent of the determined prices.

The Tribunal arrived at these figures after considering the Catchment Authority's pricing proposals and their impacts on customers and financial outcomes. This generated a set of tariffs that were put into a financial model that uses a 'building block approach'²³ to estimate the Catchment Authority's revenue requirements. This approach sets the base revenue requirement as the sum of the estimated efficient operating costs and capital costs. Although capital expenditure does not explicitly appear in the building block formula, it is accounted for through additions to the asset base and reflected in its capital costs.

The Tribunal believes the building block approach is an effective method for estimating the revenue needs of the agencies it regulates. It notes PIAC's view that its use will establish consistency between regulated industries (eg electricity and gas), and that it offers greater transparency and accountability to consumers.²⁴ However, there is a risk that relying solely on the outcomes of the building block approach could lead to a procedure-bound methodology in which key decisions on major components of the revenue requirement are made in isolation. To avoid this risk, the Tribunal also has considered the overall implications of the resulting price paths. This involved analysing a range of financial indicators to ensure that its determination would not negatively affect the Catchment Authority's financial capacity or credit rating.

In estimating the revenue requirement, the Tribunal has assumed that the Catchment Authority's predominant customer, Sydney Water, will meet the demand management targets set for it in its 2000 Operating Licence. Section 5.3 explains the demand management assumptions.

The remainder of this section discusses the main components of the Tribunal's analysis of the Catchment Authority's revenue needs, including operating costs, capital costs and capital expenditure. The financial indicators resulting from the Tribunal's analysis are also discussed.

²³ For a more detailed description of this approach, see IPART, *Pricing for Electricity Networks and Retail Supply*, June 1999.

²⁴ Public Interest Advocacy Centre submission, p 2.

6.1 Operating costs

In estimating the operating costs of the Catchment Authority, the Tribunal has sought to ensure that the Catchment Authority has sufficient funding to meet its obligations to deliver higher standards of service and catchment management, effectively and efficiently.

The Tribunal has considered the Authority's projected operating expenditures for the next five years and its potential for improving its efficiency. It has also taken into account the implications of the introduction of the new tax system, on these costs.²⁵

6.1.1 Operating expenditure

In its submission, the Catchment Authority provided 'base case' projections for its operating expenditure, and foreshadowed that it is likely to require additional levels of resourcing on top of this base. For example, at the time it made its submission it was awaiting the outcomes of the Catchment Audit,²⁶ the Tribunal's review of its Operating Licence²⁷ and the development of the Regional Environment Plan.²⁸ It expected that the level and nature of its activities would change as a consequence of these reviews. To allow for this, it also submitted supplementary operating expenditure projections based on different 'scenarios' for the outcomes of the reviews. The base case and supplementary projections are listed in Table 6.2, below.

Table 6.2 Catchment Authority's projected operating expenditure (\$m of the year)

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Base Case	68.1	68.6	68.5	70.5	72.5	74.6
Supplementary Scenario 1		1.0	3.0	5.0	7.0	9.0
Supplementary Scenario 2		1.0	4.0	7.0	9.0	12.0

The Tribunal notes that the Catchment Audit has been completed and the new Operating Licence is now in place. However the Regional Environment Plan is yet to be finalised. As discussed in section 4.1, the Operating Licence sets out standards of service expected of the Catchment Authority, and the CSIRO's Catchment Audit has provided a range of indicators which the Catchment Authority can use to guide its catchment management activities. The Tribunal has taken this information into account in making its determination.

²⁵ *A New Tax System (Goods and Services) Act, 1999.*

²⁶ Section 42 of the *Sydney Water Catchment Management Act 1998* required that within 5 months after the establishment of the Authority a nominated person must conduct an audit of the state of the land constituting the catchment area of the authority, and present a report to the Minister Environment. The final report of the Audit by CSIRO Land and Water is dated December 1999.

²⁷ As requested by the Premier, on 19 April 1999, under section 9(1)(b) of the *Independent Pricing and Regulatory Tribunal Act 1992*, the Tribunal made recommendations on the terms of the operating licence for the Catchment Authority. Consequently, the Catchment Authority's amended Operating Licence commenced on 19 April 2000.

²⁸ As a result of the Sydney Water Inquiry a Regional Environmental Plan (REP) is being prepared for the drinking water catchments by the Department of Urban Affairs and Planning. The aim of the REP will be to limit the impact of development throughout the drinking water catchments on drinking water quality.

The Catchment Authority estimates that its actual expenditure for 1999/2000 was \$53.8m. This is some \$14m below the level projected in its submission. In comparison, the Catchment Authority's latest budget projection for expenditure in 2000/2001 (contained in its Draft Business Plan for 2000-2005) is \$64.85m.

The Tribunal remains concerned to ensure that the Catchment Authority is adequately funded to carry out its role efficiently. But it is not convinced that the Catchment Authority's projections represent the appropriate level of funding it needs to meet its required service standards and carry out the catchment management tasks. Further, given the level of underexpenditure in 1999/2000, the Tribunal considers that the Catchment Authority will have difficulty in increasing its expenditure as rapidly as it has projected.

Given that the Catchment Authority has only been in existence for a short time, the Tribunal did not consider it useful to include it in Halcrow Management Sciences' (Halcrow) review of the metropolitan water agencies' operating expenditure.²⁹ Therefore the Tribunal has not applied any Halcrow efficiency expectations to the Catchment Authority's operating expenditure.

The Tribunal has examined the Catchment Authority's Draft Business Plan. Based on the Catchment Authority's level of activity and expenditure in the past year the Tribunal considers that the Catchment Authority will have difficulty in achieving the proposed expenditure of \$64.85m in 2000/01, efficiently. The Tribunal considers an operating expenditure of \$60m in 2000/01 to be more reasonable. Therefore for financial analysis, it has used the operating expenditure levels shown in Table 6.3. Over the 5 year period the operating expenditure used in the analysis rises steadily to match the Catchment Authority's base case proposal.

Table 6.3 Operating expenditure used in Tribunal's financial analysis (\$m of the year)

	2000/01	2001/02	2002/03	2003/04	2004/05
Tribunal estimate	60	63.5	67.3	71.2	75.1
Annual increase (%)		5.8	5.9	5.9	5.5

In order to determine the appropriate level of funding required by the Catchment Authority as it fully develops its activities, the Tribunal intends to commission an independent review of the Authority's operating expenditure when it conducts its next review.

²⁹ Halcrow Management Sciences Limited, *New South Wales Water Agencies' Review – Summary*, December 1999.

6.1.2 GST

The Tribunal has made an explicit adjustment to the Catchment Authority's costs as a result of the Federal Government's New Tax System. The provision of water and sewerage services is GST-free.³⁰ This means that the Catchment Authority:

- will not be required to pay GST on its revenue and will not have to increase prices by 10 per cent
- will be able to claim back GST credits on its purchases
- will see decreases in input costs where wholesale sales tax equivalents have been paid, and indirectly as suppliers' costs decrease.

In setting charges from 1 October 2000, the Tribunal has adjusted prices for the net impact of the new tax system package on the Catchment Authority, and will exclude the economy-wide impact of the package from subsequent price indexation. This approach has the benefit that there will be no 'windfall' loss or gain for the utility and the impact on the consumer will equal the net impact of the GST package on the utility.

As price regulator, the Tribunal has set in place procedures to help it satisfy itself that the effects of the new tax system package are appropriately reflected in prices charged by the utilities it regulates.³¹ This is separate from the ACCC's role on price exploitation under the Trade Practices Act. The utilities regulated by the Tribunal are required to comply with the Tribunal's determination (and its procedures on new tax system compliance) as well as the ACCC's price exploitation guidelines. The Tribunal's approach to determining the effect of the New Tax System is consistent with the ACCC's guidelines.³²

In estimating the Catchment Authority's operating costs, the Tribunal has considered the various ways the Federal Government's new tax system could affect the Catchment Authority. These include reduced input costs due to the abolition of wholesale sales taxes, additional compliance costs associated with the new system, a windfall gain associated with the 'spike' in the September quarter consumer price index (CPI) and subsequent impacts on the CPI.

After careful consideration, the Tribunal has concluded that the net cost savings is 0.3 per cent of costs prior to the New Tax System. This figure was applied to both capital and operating expenditure. The net cost savings is based on the short-term effect forecast by the Econtech model.

The maximum charges included in this determination have been made on the basis that the charges are GST-free. In the event that any of the charges listed in this or any other determination do attract GST, the Tribunal has developed an approach for including GST in the maximum prices.³³

³⁰ Section 38.1 of *A New Tax System (Goods and Services) Act, 1999* indicates that the supply of water is GST-free. The ATO has issued a ruling that interprets Section 38. In this ruling, volumetric and service charges are GST-free (*Goods and Services Tax Ruling GSTR 2000/25*).

³¹ These procedures include the Catchment Authority using an economic model devised by Econtech to estimate cost savings and a review by Econtech of the application of the model. The Econtech model has been used widely, including by the ACCC and the NSW Treasury, to assess GST impacts.

³² ACCC, *Price Exploitation and the New Tax System*, second edition, March 2000.

³³ This approach is outlined in the determination.

6.2 Capital costs

To estimate the Catchment Authority's capital costs, the Tribunal has established a valuation for the Catchment Authority's existing asset base for regulatory purposes—that is, its regulatory asset base. It also considered its rate of return on these assets and depreciation (return of capital).

6.2.1 Regulatory asset base

When the Catchment Authority was set up in July 1999, PricewaterhouseCoopers (PwC) estimated a transfer value for its assets. PwC considered a range of asset values,³⁴ and concluded that \$647m was a reasonable figure.

For financial analysis purposes, the Tribunal has based its opening regulatory asset base on PwC's transfer value. PwC's 'line in the sand value' of \$647m was derived from the underlying economic values indicated by Sydney Water's last price determination in 1996. The Tribunal has tested this value and found it to be consistent with the Optimised Deprival Value approach used to estimate the regulatory asset base for the other agencies the Tribunal regulates. When the Tribunal makes its next determination it will reconsider the regulatory asset base.

For financial analysis purposes, the Tribunal has also estimated the value of the asset base for 2002 to 2005 by rolling forward the 2001 regulatory asset base from year to year. This involved:³⁵

- indexing the opening asset base at the start of each year by the CPI
- adding and indexing projected capital expenditure (excluding capital contributions)³⁶
- subtracting depreciation and asset disposals to obtain the closing asset base.

Attachment 9 provides the components of the regulatory asset base for 2001 to 2005.

³⁴ 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'.

³⁵ The asset roll forward process is discussed in detail in the Tribunal's recent determination for the NSW electricity distributors, *Regulation of NSW Electricity Distribution Networks, Determination and Rules Under the National Electricity Code*, IPART, December 1999, p 53.

³⁶ Capital expenditure occurs throughout the year. Half the percentage change in CPI (inclusive of the ANTS effects) is used because, on average, the capital expenditure would be incurred half way through the year.

6.2.2 Rate of return

The rate of return a regulated agency receives on its assets is a key element of its overall revenue requirement. Its rate of return multiplied by the value of its underlying asset base determines its dollar return. The Tribunal, therefore, needs to ensure the prices it sets will result in an adequate rate of return for the agency.

An adequate rate of return is one that enables the owners of a regulated business to finance its regulated undertakings and obtain reasonable returns in accordance with the risks involved. If the rate of return is too low, the regulated business may face financial difficulties and run short of capital. It would then have to reduce maintenance and capital expenditure to below optimum levels, resulting in lower levels of service and increased costs to customers in the long term. If the rate of return is too high, the business is likely to be charging higher prices, and this could result in it over investing in assets or building up cash.

The rate of return usually reflects a business' cost of capital. The Tribunal has estimated the water agencies' likely Weighted Average Cost of Capital (WACC) using a range of underlying parameters,³⁷ listed in Attachment 10. This resulted in a range of 4.8 per cent to 7.8 per cent on a real, pre-tax basis. For its financial modelling, the Tribunal has used a WACC of 7 per cent real pre-tax for all the water agencies as a basis of a rate of return for a commercial water agency.³⁸

The prices set in this determination will result in a real pre-tax rate of return ranging between 7.1 per cent and 5.1 per cent (see Attachment 9), which the Tribunal believes is adequate for the Catchment Authority.

The final issue the Tribunal considered in relation to return on assets was working capital. The Tribunal recognises that any business must maintain an investment in working capital to allow it to manage the lag between payments to suppliers and receipts from customers. As investment in working capital is a necessary part of conducting the business, it should earn a return similar to investment in physical assets. For financial modelling, the Tribunal has used a nominal return of 7.3 per cent. This approach is consistent with the Tribunal's other recent determinations.

6.2.3 Depreciation

The Tribunal considered depreciation in estimating the Catchment Authority's capital costs. It has allowed depreciation on the regulatory asset base and adopted depreciation schedules based on the straight-line depreciation methodology.

³⁷ For financial modelling purposes, the Tribunal has estimated the WACC for the agencies on a commercial basis. The WACC is a weighted average of the agency's cost of debt and equity. The agencies' cost of equity has been estimated using the Capital Asset Pricing Model. A detailed discussion of this methodology may be found in the Tribunal's determination for the NSW electricity distributors, *Regulation of NSW Electricity Distribution Networks, Determination and Rules Under the National Electricity Code*, IPART, December 1999.

³⁸ See also the following submissions – NSW Treasury p 13, Public Interest Advocacy Centre p 3, Sydney Water Corporation p 93, Sydney Catchment Authority p 41.

The Tribunal assumed an average asset life of 100 years for existing assets, in line with the Catchment Authority's estimate. This is higher than the average life of 70 years used in determining prices for Sydney Water, and the 75 years used for Hunter Water and Gosford and Wyong Councils. However, given the longer lived nature of the Catchment Authority's assets (for example, dams and canals), the Tribunal considers that the Catchment Authority's estimate is a reasonable one.

6.3 Capital expenditure

The Tribunal seeks to ensure that the prices it sets enable regulated agencies to fund prudent and efficient capital expenditure. In its submission, the Catchment Authority advised that its projected levels of capital expenditure are "still somewhat uncertain", as it intends to further develop and implement a range of works to address threats to water quality over the determination period.³⁹ It also expects to complete "an extensive asset condition investigation and analysis to determine major maintenance and renewal requirements".⁴⁰ Accordingly, it presented its proposed capital expenditure in the form of a 'base case', and two scenarios of 'anticipated future requirements'.

Given this uncertainty, the Tribunal did not include the Catchment Authority in the independent capital expenditure review that it commissioned for the other metropolitan water agencies.⁴¹ However, as part of its planned mid-term review of this determination in 2002/03, the Tribunal will undertake a detailed review of the Catchment Authority's capital expenditure program.

In its financial analysis for the current determination, the Tribunal used the Catchment Authority's updated version of the base-case capital expenditure projection, shown in Table 6.4 below.⁴²

Table 6.4 Catchment Authority's projected capital expenditure (\$m1999/2000)

Program	00/01	01/02	02/03	03/04	04/05	Total
Warragamba Dam Spillway Upgrade	36.0	38.0	18.9	0.0	0.0	92.9
Warragamba Dam General Upgrade	0.3	1.0	2.2	4.3	5.9	13.7
Warragamba Pipelines Upgrade	0.9	1.2	0.9	0.9	0.7	4.6
Blue Mountains System Upgrade	0.1	0.3	0.0	0.2	0.3	0.9
Metropolitan Dams Upgrade	1.2	0.1	0.6	1.0	1.0	3.9
Upper Canal Upgrade	1.9	1.9	2.5	2.5	1.1	9.9
Prospect Reservoir Upgrade	0.2	1.0	0.8	0.2	0.2	2.4
Shoalhaven System Upgrade	0.8	2.0	3.0	0.3	0.2	6.3
Catchments Upgrades	2.2	2.2	2.2	2.5	2.3	11.4
General Upgrades	1.0	2.1	1.8	1.3	1.1	7.3
Total	44.6	49.8	32.9	13.2	12.8	153.3

³⁹ Sydney Catchment Authority, submission, p 29.

⁴⁰ Sydney Catchment Authority, submission, p 51.

⁴¹ Halcrow Management Sciences Limited, *New South Wales Water Agencies' Review – Summary*, December 1999.

⁴² Correspondence dated 20 April 2000.

Certain works in the Catchment Authority's capital works program have been inherited from Sydney Water. These include the Warragamba dam auxiliary spillway, and infrastructure renewals such as upgrading the Upper Canal.

The Warragamba dam auxiliary spillway project, which is currently underway, accounts for \$92.9m of the total of \$153m in projected capital expenditure over the whole regulatory period (and \$127.3m prior to the mid-term review in 2002/03). Its purpose is to render Warragamba dam 100 per cent safe under probable maximum flood conditions. The Upper Canal upgrade project accounts for \$9.9m and includes replacing/repairing sections of the open channel, tunnels and cross drainage to maintain the integrity of the conduit (which is over a 100 years old).

The other major expenditures planned for the determination period are the Warragamba Dam General Upgrade (\$13.7m) and Catchment Upgrades (\$11.4m). Most of the Warragamba Dam General Upgrade expenditure is scheduled to be after the mid-term review, so it will be subject to the independent review of capital expenditure that the Tribunal intends to commission.⁴³ Catchment Upgrades consist primarily of proposed land acquisitions within the catchment areas to effect improvements in water quality and yield.

The Catchment Authority indicates that the bulk of its capital works program is compliance-driven—that is, it is required to meet current or increased standards (see Table 6.5 below).⁴⁴

Table 6.5 Catchment Authority's capital expenditure drivers (\$m1999/2000)

Driver	2000/01	2001/02	2002/03	2003/04	2004/05	Total	Total %
Renewals	6.6	9.8	12.0	11.2	10.8	50.4	33%
Compliance	36.0	38.0	18.9	0.0	0.0	92.9	61%
Growth	2.0	2.0	2.0	2.0	2.0	10.0	6%
Total	44.6	49.8	32.9	13.2	12.8	153.3	100%

The Tribunal requires this compliance-related expenditure to be linked to measurable outcomes and will be seeking evidence of this at its next review.

The Tribunal notes that renewals expenditure averages about \$10m per annum over the regulatory period. This is consistent with the Catchment Authority's depreciation, which currently amounts to about \$6.5m per annum, indicating an appropriate level of capital stock maintenance.

⁴³ This includes, replacement of the existing outlet valve arrangement which is considered to be unsafe with new valves capable of being operated under all conditions and, rewiring the dam's power and communication and control systems involving upgrades to all electrical systems in line with current Australian Standards.

⁴⁴ Catchment Authority communication, 3 April 2000.

6.4 Dividends and tax equivalents

The Catchment Authority pays dividends and tax equivalents to the State Government. In the Tribunal's financial modelling, tax equivalents were calculated using the standard corporate tax rate (currently 36 per cent and reducing to 34 per cent in 2002 and 30 per cent in 2003). Tax expense was calculated by applying the relevant tax rate to operating profits before tax and capital contributions, and after abnormal items. The Tribunal has allowed for total dividend and income tax equivalent amounts submitted by the Catchment Authority in its base case, up to a maximum of 85 per cent of pre-tax profit (Table 6.6).

Table 6.6 Projected dividend and tax equivalent payments in the financial analysis

(\$m of the year)	2000/01	2001/02	2002/03	2003/04	2004/05
Tax equivalent	14.2	12.3	9.8	8.9	8.5
Dividend	10.6	16.0	18.1	16.3	15.7

In their submission, the PENGOS proposed that a possible source of funds to finance improved catchment management would be "to exempt the Catchment Authority from the requirement to provide dividends for the first five years of operations."⁴⁵ However, the Tribunal considers that the price path it has determined will provide adequate funding for the Catchment Authority to both manage its catchment effectively and meet its dividend and tax equivalent requirements.

6.5 Financial indicators

The final major component of the Tribunal's analysis in relation to estimating the Catchment Authority's financial needs aimed to ensure that the prices it sets will not have a negative impact on the Catchment Authority's financial capacity or credit rating.

This involved analysing a range of financial indicators that are commonly used by the debt rating agency, Standard and Poors, and the NSW Treasury. These indicators were chosen on the basis of relevance, availability of information, and common usage in the financial community. They focus on the agency's financial capacity and ability to service and repay debt.

The indicators are guidelines and must be read in that context. A wide range of factors would be considered in setting a rating.⁴⁶

⁴⁵ PENGOS's submission, p 15. The PENGOS estimate that this would yield in the order of \$100m over 5 years.

⁴⁶ In evaluating the credit ratings for the Catchment Authority, the Tribunal compared them with the ratings corresponding to a business with an 'excellent' risk profile.

The analysis indicates that the prices set in this determination will enable the Catchment Authority to maintain its financial position and current credit ratings over the next five years (see Table 6.7). For example:

- the funds flow interest coverage and pre-tax interest coverage indicators both show that the Catchment Authority is able to easily service its debt - both indicators remain at AA
- the ability to repay debt (funds flow net debt payback, and funds from operations/total debt) will decline over the period, but still remain strong
- the gearing level (debt to total capital) is relatively low and steady at about 25 per cent
- the internal financing ratio will decline during the period of heavy capital expenditure but will return to AA by the end of the period.

Table 6.7 Financial indicators and credit ratings for the Catchment Authority

Indicator	2000	2001	2002	2003	2004	2005
Ability to service debt						
1. Funds flow interest coverage	5.5	4.8	4.6	3.8	3.4	3.3
S&P US utilities (1995)	AA	AA	AA	AA	AA	AA
2. Pre-tax interest coverage	4.8	4.3	3.9	3.3	2.9	2.8
S&P US utilities (1995)	AA	AA	AA	AA	AA	AA
Ability to repay debt						
3. Funds flow net debt payback	3.9	5.2	6.2	7.0	7.5	7.6
NSW Treasury (1994)	AAA	AA	A	A	A	A
4. Funds from operations/total debt	23%	19%	16%	14%	13%	13%
S&P US utilities (1995)	AA	A	A	BBB	BBB	BBB
5. Total debt / total capital (regulatory values)	25%	24%	25%	26%	26%	25%
S&P US utilities (1995)	AA	AA	AA	AA	AA	AA
Ability to fund capex internally						
6. Internal financing ratio	0.9	0.6	0.4	0.4	0.8	0.9
S&P US utilities (1995)	AA	BBB	BBB	BBB	AA	AA
Net debt or (cash holdings) \$m	147	167	200	221	223	224

Note: These ratings have been calculated on the basis outlined in,

1. NSW Treasury. *Capital Structure Policy for NSW Government Trading Enterprises*, August 1994.
2. Standards and Poor's Debt Rating. *S&P's Corporate Finance Criteria*. 1995.

Overall, the indicators show that over the next five years the Catchment Authority will be able to comfortably fund its operations, service its debt and meet its capital expenditure and dividend payments.

7 MAXIMUM PRICES AND IMPLICATIONS FOR SYDNEY WATER CORPORATION

In addition to ensuring that the prices it sets will enable the Catchment Authority to remain financially viable, the Tribunal must consider the effect that these prices will have on the Catchment Authority's customers. This section outlines the Tribunal's determination on the maximum prices the Catchment Authority can charge for water services to Sydney Water Corporation, and discusses the implications these prices have for Sydney Water.

Sydney Water Corporation is the Catchment Authority's principal customer. Prior to this determination, the amount Sydney Water has paid for the water it receives from the Authority has been set through the *Bulk Water Supply Agreement* established when the Catchment Authority was created.

The Tribunal has not accepted the prices proposed by the Catchment Authority for Sydney Water. Instead, it has determined a price path that holds prices at 1999/2000 levels, in 2000/2001. The Authority will be able to adjust these prices in the following years to 2004/2005 by the CPI.

7.1 Catchment Authority's proposed prices

The Catchment Authority proposed three alternative sets of charges based on increasing levels of operating and capital expenditure, namely a 'Base Case', Scenario 1 and Scenario 2. The charges proposed by the Catchment Authority are shown in Table 7.1 below.

Table 7.1 Catchment Authority's pricing proposal for Sydney Water

Base Case (\$1999/2000)	1999/2000 Current	2000/01	2001/02	2002/03	2003/04	2004/05
Net Revenue ⁴⁷ (\$m)	116.0	122.2	123.2	125.8	128.0	128.4
Fixed Charge (\$m)	57.6	61.1	61.6	62.9	64.0	64.2
Variable Price (\$/ML)	104	109	111	113	115	116
'Scenario 1'						
(\$1999/2000)						
Net Revenue (\$m)	116.0	123.2	126.3	131.2	135.8	139.1
Fixed Charge (\$m)	57.6	61.6	63.2	65.6	67.9	69.6
Variable Price (\$/ML)	104	110	113	118	122	125
'Scenario 2'						
(\$1999/2000)						
Net Revenue (\$m)	116.0	123.2	127.4	133.4	138.3	142.5
Fixed Charge (\$m)	57.6	61.6	63.7	66.7	69.2	71.2
Variable Price (\$/ML)	104	110	114	120	124	128

7.2 Tribunal's determination for Sydney Water

The Tribunal's financial analysis indicates that the Catchment Authority's proposed prices are higher than it needs to generate sufficient funding to perform its role effectively and efficiently. It has determined an alternative price path for the Authority's charges to Sydney Water, outlined in Table 7.2, below.

Table 7.2 Tribunal's determined charges for Sydney Water

(\$2000/01)	2000/01	2001/02	2002/03	2003/04	2004/05
Sydney Water Fixed Component (\$m)	57.6	57.6	57.6	57.6	57.6
Sydney Water Usage Price (\$/ML)	104	104	104	104	104

These prices will result in a 2 per cent real reduction in charges to Sydney Water in 2000/01 compared with 1999/2000. Charges in the following years to 2004/05 are maintained in real terms.

⁴⁷ The Catchment Authority has shown all revenue outcomes after deducting an allowance for water supplied at less than Sydney Water's preferred quality. Under the *Bulk Water Supply Agreement* between Sydney Water Corporation and the Sydney Catchment Authority (see Schedule 6, Part A, 3 (a) and Part C) an additional amount of \$3.2m per annum (adjusted for inflation) is included in Sydney Water's payments to the authority. This amount is to compensate the Catchment Authority for payments it makes back to Sydney Water for supplying lower quality water. The compensation is made in recognition of the fact that the Catchment Authority 'inherited' a certain water quality from Sydney Water when it was created. The variable prices shown on the other hand reflect prices before this deduction, ie they include the \$3.2m (on a per ML basis).

The Tribunal's tariff structure maintains the 50/50 split in required revenue from the fixed and usage charges, as proposed by the Catchment Authority. The Tribunal recognises that this split was negotiated as a compromise between the Catchment Authority and Sydney Water when setting up the Bulk Water Supply Agreement.⁴⁸ The Catchment Authority's costs are largely fixed, so it would prefer a greater proportion of its revenue to be derived from the fixed component. On the other hand, Sydney Water would prefer to pay for only the amount of water it uses (ie is able to sell to its customers), and so would prefer its charges to be largely based on usage.

The Tribunal notes that the PENGOS favoured a greater emphasis on usage charges as this would provide a resource conservation signal.⁴⁹ The Tribunal considers that the 50/50 split that it has adopted does place a substantial emphasis on usage charges. Furthermore, it believes that the important price signal in relation to the overall marginal cost of water as well as demand management is likely to be given through the price 'seen' by consumers—that is the price Sydney Water charges its customers. It is not clear how an even greater emphasis on usage in the Catchment Authority's price would influence end-use consumption.

The Tribunal will review the Catchment Authority's tariff structure as part of its next review, in light of the overall trend in consumption that emerges over the next few years.

⁴⁸ Public hearing transcripts, p 28.

⁴⁹ Public hearing transcripts, p 36 and 40.

8 MAXIMUM PRICES AND IMPLICATIONS FOR THE CATCHMENT AUTHORITY'S OTHER CUSTOMERS

The Catchment Authority also supplies water to a number of other customers, who consume less than 0.5 per cent of the annual total water demand placed on the Catchment Authority. They 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.

These customers obtain water from different parts of the water supply system, including storages, rivers and streams, the Warragamba Pipelines and the Upper Canal. This means they can receive different qualities of water, and so are charged different prices. These prices are currently the same as they were before the Catchment Authority was separated from Sydney Water.

8.1 Charges to Wingecarribee Shire Council

Wingecarribee Shire Council (Wingecarribee) currently draws an average of around 2,000ML of water per year from the Wingecarribee Reservoir for treatment and resale to its own customers. In 1999, it used 2,720ML of water at a total cost of \$137,578 (ie an average cost of \$51/ML). This was based on a charge of \$80 per ML after a free allowance of 1000 ML.⁵⁰

8.1.1 Catchment Authority's price proposal for Wingecarribee.

For the coming 5 years, the Catchment Authority has proposed the prices shown in Table 8.1 for the supply of bulk water to Wingecarribee.

Table 8.1 Catchment Authority's proposed prices to Wingecarribee

(\$1999/2000)	2000/01	2001/02	2002/03	2003/04	2004/05
Fixed Charge(\$)	240,563	276,227	316,627	357,758	394,709
Variable Price (\$/ML)	100	101	104	106	107

⁵⁰ Wingecarribee Shire Council, Additional Information, submission of 13 April 2000, p 5.

In addition to these prices, the Catchment Authority proposed that:

- an Agreement should be entered into between the Authority and Wingecarribee covering general conditions of supply, but with prices being as determined by the Tribunal
- any Agreement should be for a maximum term of 5 years and have the same concluding date as the Catchment Authority's Operating Licence
- the water pricing arrangements should be the same as those applying to Sydney Water, or more particularly, a common pricing arrangement should be established for all water retailers
- the free water allocation enjoyed by the Wingecarribee under the previous agreement as part of the compensation arrangements should cease, as provided for by the expiry of the original Agreement. Wingecarribee should be required to pay for all water obtained from the Authority consistent with the COAG⁵¹ Water Reform principles
- Wingecarribee should be required to develop and implement appropriate demand management strategies.

Wingecarribee estimates that the increase in revenue required to meet the increased cost of the Catchment Authority's proposal water would be \$406,367, which represents an increase of 11.4 per cent.⁵²

8.1.2 Tribunal's determination of prices to Wingecarribee

The Tribunal has modified the Catchment Authority's proposed level of charges to reduce the impact on Wingecarribee and its customers. The prices the Tribunal has determined for the supply of bulk water to Wingecarribee are shown in Table 8.2.

Table 8.2 Tribunal's determined prices for Wingecarribee

(\$2000/2001)	2000/01	2001/02	2002/03	2003/04	2004/05
Price to Wingecarribee (\$/ML)	60	68	77	86	94

The Tribunal has determined that:

- Wingecarribee's free allowance of 1,000ML is to be eliminated
- an increased usage charge will be phased in over the regulatory period based on Wingecarribee's average cost per ML of \$51 in 1999, such that
- at the end of the regulatory period Wingecarribee's total per ML price will be consistent with the usage price paid by Sydney Water, after allowing for differences in water quality
- no access charge will be applied in this regulatory period.

⁵¹ Council of Australian Governments.

⁵² Wingecarribee Shire Council, Additional Information, submission of 13 April 2000, p 6.

In making its determination the Tribunal considered a number of factors, including:

- the Catchment Authority's inability to advise the separate costs of supplying Wingecarribee
- eliminating the free allowance is consistent with other recent Tribunal determinations
- the agreement that had existed between Sydney Water and Wingecarribee covering the supply of bulk water with a free allowance of 1,000ML of water in compensation for the loss of Wingecarribee's own asset (dam) had recently expired
- Wingecarribee's claim regarding additional expenditure incurred in maintaining the catchment.

The impact of the Tribunal's determination would be an annual increase of about \$120,000 in total charges to Wingecarribee by 2004/2005.⁵³

8.2 Charges to Shoalhaven City Council

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.⁵⁴ This involves some 100 properties and about 200 kL per day (ie about 73 ML 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.⁵⁵ To date, it has not needed to do so and at the public hearing, Shoalhaven advised such a need would probably occur only once every 20 years. Shoalhaven believes that the price for this supply should be \$80/ML.⁵⁶ It estimates that during a drought it could need between 2,000 to 5,000ML in total from the Catchment Authority. At the current \$440/ML this would cost it between \$0.9m to \$2.2m, compared with \$160,000 to \$400,000 if the price were \$80/ML.⁵⁷

8.2.1 Catchment Authority's price proposal for Shoalhaven

The Catchment Authority has proposed the following prices for bulk water supply to Shoalhaven.

Kangaroo Valley Township (Regular Supply)

The Catchment Authority believes that a similar pricing approach to the one it proposed for Wingecarribee should be adopted for the regular supply of water to Kangaroo Valley. Its proposed prices are listed in Table 8.3, below.

⁵³ Based on consumption of 2,700ML at \$94 per ML.

⁵⁴ This system is separate to the rest of Shoalhaven's integrated system.

⁵⁵ Shoalhaven is not allowed to pump from its normal source at Burrier when the flow in the Shoalhaven River is under 90 ML/day in order to maintain environmental flows in the river.

⁵⁶ Shoalhaven City Council, submission, 1 February 2000, p 2.

⁵⁷ In its 1996 determination, the Tribunal determined a bulk water price of \$0.44/kL (or \$440/ML) for 1999/2000, but to date no payments have been made by Shoalhaven.

Table 8.3 Catchment Authority's proposed prices for Shoalhaven – Kangaroo Valley

(\$1999/2000)	2000/01	2001/02	2002/03	2003/04	2004/05
Fixed Charge	\$7,276	\$7,356	\$7,531	\$7,689	\$7,736
Variable Price	\$100	\$101	\$104	\$106	\$107

Tallowa Dam Releases (Drought Supply)

The Catchment Authority's proposed prices for Tallowa Dam releases to Shoalhaven (see Table 8.4) are the same as those proposed for supply to Kangaroo Valley (and Wingecarribee).⁵⁸

Table 8.4 Catchment Authority's proposed prices for Shoalhaven – Tallowa Dam releases⁵⁹

(\$1999/2000)	2000/01	2001/02	2002/03	2003/04	2004/05
Fixed Charge	\$10,395	\$10,509	\$10,759	\$10,984	\$11,052
Variable Price	\$100	\$101	\$104	\$106	\$107

8.2.2 Tribunal's determination of prices for Shoalhaven

For the current regulatory period, the Tribunal has determined the same prices for supply to Shoalhaven City Council for both its regular supply to Kangaroo Valley township, and Tallowa Dam releases for drought supply. The Tribunal has determined to phase in a usage charge over the regulatory period, but will not apply an access charge for this period.

Prices for supply to Shoalhaven, shown in Table 8.5 below, are the same as those determined for supply to Wingecarribee.

Table 8.5 Tribunal's determined prices for Shoalhaven

(\$2000/2001)	2000/01	2001/02	2002/03	2003/04	2004/05
Price to Shoalhaven (\$/ML)	60	68	77	86	94

In making its determination the Tribunal has taken into consideration:

- the impact of the new charges on Shoalhaven and its customers in Kangaroo Valley
- the Catchment Authority's inability to identify the separate costs of supplying Shoalhaven
- the need for usage charges to maintain signals regarding the efficient use of resources and environmental consequences
- the need for consistency with the determinations for Sydney Water and Wingecarribee.

⁵⁸ An environmental flow requirement on the Catchment Authority requires that it must pass through Tallowa Dam, the lesser of 90ML/d or the rate of inflow into the dam. In addition, the Catchment Authority passes through the storage a further amount of up to 90ML/d as a supply for Shoalhaven City Council. Total average daily release is therefore the lesser of 180ML/d or actual inflow. The Authority only retains in storage any inflow over 180ML/d.

⁵⁹ Average drought relief water demands have been assumed to be 2000ML once every 20 years as suggested in Shoalhaven City Council's submission. This is equivalent to an annual average of 100ML per year.

8.3 Charges to Other Raw Water and Unfiltered Water Customers

The Sydney Catchment Authority supplies raw water and unfiltered water to a range of other 'retail' customers.⁶⁰ 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.

Currently, the Catchment Authority is charging these customers the usage charges shown in Table 8.6 for raw water and unfiltered water, in line with Tribunal's 1996 Determination for Sydney Water Corporation. Sydney Water's current price for filtered water is shown for comparison.

Table 8.6 Catchment Authority's current charges for raw water and unfiltered water

Water Type (c/kL)	1999/2000
Filtered Water (Sydney Water)	90
Unfiltered Water	71
Raw Water	44

Since its creation, the Catchment Authority has continued with Sydney Water's previously determined charging arrangements for unfiltered and raw water. It charges a fixed service charge for unfiltered water only. Charges for raw water are based solely on the volume used.⁶¹

The service charges for unfiltered water are a function of the size of the water meter serving the property and range from \$80 per year (\$20 per quarter) for a 20mm meter to \$4,500 per year or a 300mm meter.

Meter reading and billing functions are performed by Sydney Water on behalf of the Catchment Authority. The Catchment Authority has advised that this practice will be continued.

⁶⁰ The distinction between raw water and unfiltered water is that raw water receives no treatment of any kind. Unfiltered water is disinfected by chlorination.

⁶¹ The Authority has advised that the reason for this is not clear and may reflect a carry over of provisions applying to the sale of water by measure from the time of the Metropolitan Water, Sewerage and Drainage Board.

8.3.1 Catchment Authority's price proposal for raw and unfiltered water

Service charges for unfiltered water

The Catchment Authority proposes to continue to charge its customers the same water service (ie fixed) charges as those imposed by Sydney Water from 2000/01 to 2004/05. It considers the benefits to be gained from avoiding customer allegations that they may have been disadvantaged by being moved from Sydney Water to the Catchment Authority outweigh any revenue that might be forgone. The Catchment Authority noted that Sydney Water had proposed to maintain these service charges constant over the term of the regulatory period.⁶²

Usage charges for raw water and unfiltered water

The Catchment Authority has proposed the usage charges shown in Table 8.7 for the regulatory period.

Table 8.7 Usage charges for raw water and unfiltered water (\$2000/01)

Water Type	2000/01	2001/02	2002/03	2003/04	2004/05
Raw Water (c/kL)	\$0.21	\$0.21	\$0.22	\$0.22	\$0.22
Unfiltered Water (c/kL)	\$0.10	\$0.11	\$0.11	\$0.11	\$0.11

8.3.2 Tribunal's determination for raw water and unfiltered water

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

The charges for the Catchment Authority's unfiltered water and raw water are shown in Tables 8.8 to 8.10 below.

Table 8.8 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

⁶² ie \$80 per year (\$20 per quarter) for a 20mm meter to \$4,500 per year for a 300mm meter.

Table 8.9 Unfiltered water usage charges in 2000/01 to 2004/05, (\$ of the year)

Charge	2000/01	2001/02	2002/03	2003/04	2004/05
Unfiltered Water Usage Charge (per kilolitre)	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73
		$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$	X $(1 + \text{CPI}_1^{\text{-GST}} - 2\%)$	$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$ X $(1 + \text{CPI}_2^{\text{-GST}} - 2\%)$	$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$ X $(1 + \text{CPI}_2^{\text{-GST}} - 2\%)$ X $(1 + \text{CPI}_3^{\text{-GST}} - 2\%)$
			$(1 + \text{CPI}_2^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_3^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_4^{\text{X-GST}} - 2\%)$

Table 8.10 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

In making its determination, the Tribunal has:

- taken into account the fact that when normal reticulated water supplies are available from Sydney Water, customers are required to disconnect from the major transportation conduits of the Catchment Authority and reconnect to Sydney Water's 'normal' distribution mains
- sought to avoid any price shocks that this might generate for the Catchment Authority's customers
- maintained the current signal in relation to demand management and efficient resource use, to the Catchment Authority's 'retail' customers, similar to that for Sydney Water's customers.

8.3.3 Pensioners

The Catchment Authority has advised that at least 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.

The Catchment Authority proposes to continue providing pensioners with a rebate equivalent to 100 per cent of the water service charge for the 5 year period of the price path. The Catchment Authority advises that it will seek reimbursement of any money foregone from this concession as a Social Program under the Government's Social Program Policy.

The Tribunal considers that this is a matter for government and accepts the Catchment Authority's proposed course of action.

8.3.4 Exempt properties

There are a small number of properties supplied with unfiltered water that were not charged a service charge by Sydney Water because they were exempt from such charges under the terms of the *Sydney Water Act, 1994*.⁶³ The Catchment Authority has continued this practice, and intends to seek the appropriate powers to continue to do so, administratively. The Tribunal accepts this proposal, subject to the Catchment Authority seeking the appropriate powers to do so.

⁶³ 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.

ATTACHMENT 1 TERMS OF REFERENCE

Independent Pricing and Regulatory Tribunal Determination of Pricing for the Supply of Bulk Water

1. The Independent Pricing and Regulatory Tribunal of New South Wales (**IPART**) is requested, pursuant to section 12(1)(a) of the *Independent Pricing and Regulatory Tribunal Act, 1992*, to conduct an investigation and make a report on the determination of pricing for the following services supplied by the Sydney Catchment Authority (**Authority**) to the Sydney Water Corporation (**Corporation**) and to any other person supplied water by the Sydney Catchment Authority:
 - a) water supply services; and
 - b) ancillary and miscellaneous services for which no alternative supply exists and which relate to the supply of those water supply services,for a period commencing on 1 October 2000 and concluding on 30 June 2005.
2. IPART must, when conducting its investigation and making its report, consider:
 - a) the role, objectives and functions of the Authority, as provided for in sections 13, 14 and 15 of the *Sydney Water Catchment Management Act, 1998*;
 - b) the functions and objectives of the Corporation, as provided for in sections 5 and 21 of the *Sydney Water Act, 1994*;
 - c) the findings, conclusions and recommendations of the Sydney Water Inquiry;
 - d) the regulatory environment in which the Authority and the Corporation operate and changes affecting the regulatory environment;
 - e) the financial management framework within which the Corporation and the Authority operate;
 - f) the terms of the operating licences that apply to the Corporation and the Authority and any amendments to those operating licences;
 - g) the functions and circumstances of any other person supplied water by the Authority; and
 - h) any other matters that IPART considers relevant.
3. The report is required to be submitted by no later than 26 September 2000.

ATTACHMENT 2 CONSIDERATION OF THE TERMS OF REFERENCE

Term	Reference
a) the role, objectives and functions of the Authority, as provided for in sections 13, 14 and 15 of the <i>Sydney Water Catchment Management Act, 1998</i>	Section 2 notes the role of the Catchment Authority and Sections 4 and 5 discuss the objectives and functions of the Catchment Authority. Section 6 discusses the revenue allowed for performing its functions.
b) the functions and objectives of the Corporation, as provided for in sections 5 and 21 of the <i>Sydney Water Act, 1994</i> ;	The standards of service to Sydney Water are discussed in Section 4. The Catchment Authority's revenue was estimated based Sydney Water's estimated demand.
c) the findings, conclusions and recommendations of the Sydney Water Inquiry;	The way in which the findings conclusions and recommendations of the Sydney Water Inquiry impact the Catchment Authority's activities are discussed in Sections 2, 4 and 5. Funding to enable these activities is addressed in Section 6.
d) the regulatory environment in which the Catchment Authority and the Corporation operate and changes affecting the regulatory environment;	Section 2 considers the regulatory environment for the Catchment Authority and Sydney Water, especially with regard to the operating licences. As discussed in Section 2 the Tribunal will request that the Catchment Authority be included as a standing reference agency in Schedule 1 of the IPART Act. Section 3 details the investigation process and form of regulation.
e) the financial management framework within which the Corporation and the Catchment Authority operate;	The Bulk Water Supply Agreement and the form of price regulation is addressed in Section 3. Projected dividends and taxes flowing from the determination are detailed in Section 6.
f) the terms of the operating licences that apply to the Corporation and the Catchment Authority and any amendments to those operating licences;	The standards of service required under the Catchment Authority's operating licence are addressed in Sections 2 and 4. Funding to enable the Catchment Authority to meet its standards of service is considered in Section 6.
g) the functions and circumstances of any other person supplied water by the Catchment Authority; and	Pricing to Wingecarribee Shire Council, Shoalhaven City Council and Raw and Unfiltered Water customers is detailed in Section 8.
h) any other matters that IPART considers relevant.	The Tribunal has had regard to the matters listed in Section 15 of the IPART Act. These matters are addressed in Attachment 3.

ATTACHMENT 3 IPART ACT REQUIREMENTS

Section 15 compliance

Section	Reference
s15(1)(a) the cost of providing the services concerned	The costs of providing water services to customers are discussed in Section 6 .
s15(1)(b) the protection of consumers from the abuses of monopoly power in terms of prices, pricing policies and standard of services	Sections 7 and 8 address price changes over the regulatory period. In general the Tribunal has increased prices by CPI-2%. Sections 7 and 8 also discuss how the Tribunal has taken into account the impact on customers, of the determined prices.
s15(1)(c) the appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales	Section 6 discusses appropriate profit margins and rates of return for the Catchment Authority.
s15(1)(d) the effect on general price inflation over the medium term	The Tribunal's determination will have a negligible impact on general price inflation over the medium term.
s15(1)(e) the need for greater efficiency in the supply of service so as to reduce the cost for the benefit of consumers and tax payers	Efficient operating costs and capital expenditure are discussed in Section 6 .
s15(1)(f) the need to maintain ecologically sustainable development (within the meaning of section 6 of the Protection of the Environment Administration Act 1991) by appropriate pricing policies that take account of all the feasible options available to protect the environment	Section 5 discusses issues relating to the environment.
S15(1)(g) the impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets	Section 6 discusses appropriate profit margins for the Catchment Authority. In making this determination, the Tribunal has considered dividend requirements as well.
s15(1)(h) the impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body	The Tribunal has allowed for an amount of \$3m in the Catchment Authority's operating expenditure for the management of Special Areas by the National Parks and Wildlife Service.
s15(1)(l) the need to promote competition in the supply of the services concerned	The Government has not created any provision for the establishment of competition in the supply of water and sewerage services.
s15(1)(j) consideration of demand management (including levels of demand) and least cost planning	Section 5 addresses the impact on demand management practices.
s15(1)(k) the social impact of the determinations and recommendations	Sections 7 and 8 . This determination has been designed to minimise price increases to the Catchment Authority's wholesale customers, thereby minimising the downstream impact on retail customers.

Section	Reference
s15(1)(l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).	In making the determination the Tribunal has been mindful of the need to maintain existing levels of service and the potential for increases in some service levels. In Section 4 the Tribunal discusses the standards of service.

Section 16 requirements

The Tribunal is required under Section 16 of the Act to assess and report on the likely annual cost to the Consolidated Fund if the price were not increased to the maximum permitted.

The Determination for the Catchment Authority will result in a maintenance of revenue at 1999/2000 levels. Should tariffs be set below the scheduled levels, the level of dividends remitted to the consolidated fund would fall. The extent to which it falls would depend on Treasury's application of its financial distribution policy and how the change affects pre tax profit.

The Tribunal's financial modelling projects payment of dividends and income tax equivalents at the lesser of those foreshadowed in the Catchment Authority's Submission or 85 per cent of pre-tax profit. In the latter case every \$1 decline in pre tax profit will result in a loss of revenue to the consolidated fund of 85 cents.

ATTACHMENT 4 LIST OF SUBMISSIONS

Submissions were received from the following organisations in regard to the Sydney Catchment Authority.

Environment Protection Authority

Goulburn Water

Peak Environment Non-Government Organisations

Public Interest Advocacy Centre

Shoalhaven City Council

Sydney Catchment Authority

Sydney Water Corporation

Treasury NSW

Wingecarribee Shire Council

ATTACHMENT 5 PRESENTERS AT PUBLIC HEARING

The presenters at the public hearing on 15 March 2000 were:

Sydney Catchment Authority

Mr Jeff Wright

Mr Richard Warner

Peak Environment Non-Government Organisations

Mr Lee Martin

Mr Jeff Angel

Ms Kathy Ridge

Wingecaribee Shire Council

Dr Sara Murray

Mr David Wood

Mr Michael Brierley

Mr David Gowan

Mr Peter Reynolds

Mr Rick Mandelson

Shoalhaven City Council

Mr John Gould

ATTACHMENT 6 PROPOSED STATUS INDICATORS – DRAFT STRATEGIC PRIORITIES

1. Reduction of sewerage effluent impacts
 - Number of STPs requiring upgrades
 - STP licence compliance
 - Number of sewage overflows
 - Total volume of sewage overflow
 - Number of unsewered towns
 - Population unsewered
 - Percentage of on-site sewage management systems compliant
 - Number of unconnected premises in seweraged towns.
2. Management of other discharges
 - Compliance with EPA licences for intensive agriculture, piggeries, mines, quarries, and other industries
 - Compliance with the requirement for nil discharge of process wastes or contaminated water from major developments for storm events less than 1 in 100 ARI
 - Compliance with new EPA licence conditions for all existing major developments.
3. Improvement of stormwater quality
 - Number and percentage of best practice initiatives implemented in urban stormwater management
 - Compliance of council stormwater management plans with Catchment Authority guidelines
 - Percentage of Catchment Authority priority action plans implemented within councils' stormwater management plans.
4. Improving riverine ecosystems
 - Establishment and compliance with Department of Land and Water Conservation licence requirements for environmental flows
 - Extent of native vegetation as a percentage of the catchment area
 - Extent of exotic species infected as a percentage of the catchment area
 - Extent of critical erosion zones as a percentage of the catchment area
 - Number and percentage of mine sites rehabilitated to Catchment Authority guidelines
 - Preparation and implementation of appropriate program for water quality and catchment health reporting.
5. Stakeholder consultation and communication
 - Number and percentage of stakeholder expectations exceeded
 - Encouragement of demand management principles
 - Improve awareness of catchment management.

6. Monitoring and Research
 - Compliance with catchment health indicators developed for the Operating Licence
 - Identify and implement monitoring programs and reports for water quality and catchment health
 - Percent of catchment area where data on catchment and natural resources is complete
 - Identify key research programs and ensure these are on program and budget.

7. Bulkwater and catchment infrastructure
 - Ensure and maintain dam safety through compliance with NSW Dam Safety Committee requirements
 - Maintain and protect main delivery systems through the development and implementation of Asset Management Strategies
 - Complete System Management Plans (SMPs) and Land Management Plans (LMPs) to investigate and establish optimum management practice for dams, delivery systems and catchment lands
 - Review improvements to dam off-take arrangements by identifying and modifying SMPs and Capital Works plans
 - The number of SMPs completed
 - Capital works completed.

8. Raw water quality
 - Prepare appropriate bulk water quality criteria for water supplied by Catchment Authority in consultation with customers and formalised in agreements
 - The success of strategies for Blue Green Algae management developed and implemented.

ATTACHMENT 7 KEY FINDINGS OF THE CATCHMENT AUDIT

The key findings of the *Audit of the Hydrological Catchments Managed by the Sydney Catchment Authority*⁶⁴ are listed below.

1. A range of land uses within the headwater and upper catchments of the Coxs, Nepean, Nattai, Wingecarribee, Mulwarree, Wollondilly, Kangaroo and Shoalhaven River systems are increasing the hazards for both water quality and catchment health. These hazards derive from the extraction of water from the catchment and river systems and most importantly, the management of wastes and effluents. The specific pollution hazards to be managed are sewage effluent and biosolids from sewage treatment plants, unsewered villages, and unsewered peri-urban and rural smallholdings.
2. Many of these same headwater catchments are under high levels of hydrological stress, particularly during periods of low flow and high demand. This stress in concert with other impacts of land use and management, has degraded many headwater and upper catchment aquatic ecosystems to the extent that their ability to ameliorate and assimilate pollutants and toxins has been seriously compromised.
3. Hazards to water quality and catchment health in the Mulwarree, Wollondilly, Kangaroo and Shoalhaven catchments include urban and peri-urban development. However the primary hazards in these catchments derive from the impact of animal grazing with stock access to streams, the large number of unsealed roads and tracks, intensive pig and poultry enterprises, meat and wool processing, and damaged riparian zone, coupled with extensive gully and sheet erosion.
4. It is clear that many of the risks to water quality within the catchment come from existing development. However, current legislation outside the mandate of the Catchment Authority can override catchment management regulation. Thus land uses that are inconsistent with drinking water quality and catchment health can be expected to flourish in the Sydney Water Supply catchments unless the Catchment Authority has the legislative capacity and institutional arrangements to deal with existing and future development. This is the primary threat to both water quality and catchment health.
5. The behavior of microbial pathogens in particular viral pathogens, in the continuum from source(s) to treatment plant within the Sydney catchments is not well understood. While there has been work detecting *Cryptosporidium* and *Giardia* in the catchments, there is minimal information on the behavior and survival of the different pathogens in the catchments under different environmental conditions. It is essential that any existing or future data used to improve the understanding of pathogen behavior in the Sydney catchments is relevant to the environmental and climatic conditions of these catchments. Until these facts are properly understood, risk assessment and management decisions about pathogens in the catchments cannot be undertaken properly.
6. There are large gaps in data on mines, both old and new, the status of their rehabilitation and their impact on the environment. This is largely due to poor collaboration between Government departments with different priorities and will need to receive attention

⁶⁴ December 1999.

7. Diffuse sources of sediments and nutrients in the outer catchments, especially degraded riparian zones, unsealed roads and stock watering points, gully and sheet erosion, are a high priority for mitigation.

ATTACHMENT 8 INDICATORS SUGGESTED BY THE CATCHMENT AUDIT

The Catchment Audit suggests that indicators for the catchments be collected into four groups

1. Indicators of pressure on the catchments
 - (i) Catchment population, population distributions, densities, trends, urban and rural subdivisions
 - (ii) Sewage treatment plant (STP) discharge sites, discharge volumes and quality
 - (iii) Current and old mining sites, including extractive industries
 - (iv) Industrial and manufacturing sites
 - (v) Water extracted from rivers, streams and groundwater by all forms of human activity
 - (vi) Number of weirs, dams and riparian structures
 - (vii) Agricultural development indicated by
 - Clearing of vegetation
 - Fertiliser use
 - Pesticide use
 - Stocking rates
 - Number of animal (cattle, pig, poultry, etc) feedlots
 - Number of farm dams and proportion of runoff captured
 - Areas of intensive agriculture, horticulture and forestry operations.
2. Indicators of the state of catchments
 - (i) Land use
 - (ii) Tree and vegetation cover
 - (iii) Erosion areas
 - (iv) Intersections of transport routes, easements and water courses
 - (v) Dryland salinity
 - (vi) Threatened species and endangered ecological communities
 - (vii) Area of habitat, remnant vegetation, class and condition
 - (viii) Wildfire and control burns
 - (ix) Feral and introduced animal populations
 - (x) Weed species populations.
3. Indicators of the state of streams
 - (i) Stream flow, variability and level of stream regulation
 - (ii) Physico-chemical measures of water quality (including turbidity, colour, N, P, Organic Carbon, Total Suspended Solids etc)
 - (iii) Sediment, nutrient and carbon loads
 - (iv) Microbial pathogen populations
 - (v) Sediment metal and pesticide toxicant levels
 - (vi) Macro-invertebrates
 - (vii) Fish populations
 - (viii) Locations and length of stream with access of stock
 - (ix) Riparian zone condition – including measures of intactness
 - (x) Connectivity of streams, number of barriers with effective fish ways
 - (xi) Fluvial geomorphology as reflected in wetland location, area and connectivity with channels and floodplain.

4. Indicators of the state of reservoirs
 - (i) Reservoir volumes and variability, level of regulation
 - (ii) Physico-chemical measures of water quality (including turbidity, colour, N, P, Organic Carbon, Total Suspended Solids etc.)
 - (iii) Microbial pathogen populations
 - (iv) Thermal stratification patterns and profiles of oxidation status
 - (v) Algal biomass and species
 - (vi) Zooplankton biomass and species
 - (vii) Fish biomass and species
 - (viii) Sediment metal and pesticide toxicant levels
 - (ix) Reservoir Off-takes water quality as specified by legislation.

ATTACHMENT 9 REGULATORY ASSET BASE AND RATE OF RETURN

Financial year ending 30 June	2000	2001	2002	2003	2004	2005
Opening fixed asset value		667.8	727.3	795.1	847.4	879.5
plus net capital expenditure(1)		45.8	52.6	35.9	14.8	14.7
less depreciation		(6.8)	(7.3)	(7.7)	(8.1)	(8.4)
less disposals		-	-	-	-	-
plus indexation		20.5	22.4	24.2	25.4	26.4
Closing fixed asset value	667.8	727.3	795.1	847.4	879.5	912.1
Working capital (closing balance)	1.0	1.8	1.8	1.8	1.9	1.9
Total regulatory asset base	669	729	797	849	881	914
Operating expenditure	53.8	60.0	63.5	67.3	71.2	75.1
Depreciation	6.5	6.8	7.3	7.7	8.1	8.4
Expected return on assets	56.3	49.9	49.1	47.9	46.2	45.4
Expected revenue	116.6	116.7	119.9	122.9	125.5	128.9
Return on assets (% , real pre-tax) (2)	8.7%	7.1%	6.4%	5.8%	5.3%	5.1%

1. Net capital expenditure is capital expenditure net of capital contributions.
2. The return on assets is calculated on the average asset based for the year.

Note: Columns may not add due to rounding.

ATTACHMENT 10 WACC PARAMETERS

Parameter	Value
Nominal risk-free rate	6.41%
Real risk-free rate	3.52%
Inflation	2.79%
Market risk premium	5.0% to 6.0%
Debt margin	0.8% to 1.0%
Debt to debt plus equity	60%
Dividend imputation factor (Gamma)	0.5 to 0.3
Tax rate	30%
Asset Beta	0.30 to 0.45
Equity Beta	0.65 to 1.02
Cost of equity (nominal post tax)	9.7% to 12.5%
Cost of debt (nominal pre tax)	7.2% to 7.4%
WACC (nominal post tax)	6.2% to 7.6%
WACC (real pre tax)⁶⁵	4.8% to 7.8%

⁶⁵ The lower bound of 4.8 per cent is estimated by applying the so called 'reverse transformation' approach to the lower range of the parameters listed. The upper bound is estimated by applying the 'market' transformation to the upper range of the parameters listed.

ATTACHMENT 11 FINANCIAL INFORMATION

	2000	2001	2002	2003	2004	2005
Ability to service debt						
Funds flow interest coverage	5.5	4.7	4.5	3.8	3.3	3.2
NSW Treasury (1994)	AAA	AAA	AAA	AA	AA	A
S&P - US Utilities (1995)	AA	AA	AA	AA	AA	AA
Pre-tax interest coverage	4.8	4.2	3.9	3.2	2.8	2.7
S&P - US Utilities (1995)	AA	AA	AA	AA	AA	A
Note : net interest used in all above ratios						
Ability to repay debt						
Funds flow net debt payback	3.9	5.3	6.4	7.2	7.7	7.9
NSW Treasury (1994)	AAA	AA	A	A	A	A
Funds from operations/total debt	23%	18%	15%	14%	13%	13%
S&P - US Utilities (1995)	AA	A	A	BBB	BBB	BBB
Total debt / total capital (regulatory value)	25%	24%	25%	26%	26%	25%
S&P - US Utilities (1995)	AA	AA	AA	AA	AA	AA
Ability to fund capex internally						
Internal financing ratio	85.5	55.2	36.2	39.8	77.6	84.9
NSW Treasury (1994)	AA	BBB	BB	BB	AA	AA
S&P - US Utilities (1995)	AA	BBB	BBB	BBB	AA	AA
Funds flow adequacy						
Funds from operations/(dividends+net capex)	0.86	0.61	0.48	0.59	0.90	0.93
Net debt						
Total debt less cash, ST and LT investments	147	168	201	222	224	225
Net debt as % expected revenue	126%	144%	168%	181%	179%	175%
EBIT / total revenue	49%	44%	41%	39%	37%	35%
EBITDA / total revenue	55%	50%	47%	45%	43%	42%
EBIT (\$ m)	58	52	49	48	46	45
EBITDA (\$ m)	65	59	56	56	54	54
Profit after tax	29	25	24	23	21	20

Note: 1 NSW Treasury. *Capital Structure Policy for NSW Government Trading Enterprises*, August 1994.

2 Standards and Poor's Debt Rating. *S&P's Corporate Finance Criteria*. 1995.

FINANCIAL INDICATORS	GENERAL DESCRIPTION	DEFINITION/COMPONENTS
Funds Flow Interest Coverage	How many times funds from operations covers interest payments	(Pre-tax funds flow + net interest) / net interest
Pre-tax Interest Coverage	How many times profit before tax covers interest payments	(EBIT – capital contributions) / net interest
Funds Flow Net Debt Pay Back	How many years will it take to payback total debt	Net debt / funds from operations
Funds from operations / total debt	Proportion of funds from operations to total debt	Funds from operations / total debt
Total Debt / Total Capital	Proportion of debt to equity capital	Total Debt / (Total Debt + Total Equity)
Internal Financing Ratio	Funds retained as a proportion of capital expenditure	(Net cash flow / net capital expenditure) x 100
Net Debt or (Cash holdings)	The amount of net debt or cash holdings	See definitions below

Where:

Capital contributions = cash and non-cash contributions of/towards physical assets

Capital expenditure = purchase of property, plant and equipment

Cash holdings = cash + short term investments

EBIT = earnings before (net) interest, tax abnormal items, but after capital contributions

Funds from operations = Profit after tax + depreciation and amortisation – capital contributions + movements in provisions + cost of assets sold + change in working capital – non-cash abnormal items

Net cash flow = funds from operations – dividends paid in year

Net interest = interest payable – net interest

Net debt = (total debt – cash – LT&ST investments)

Pre-tax funds flow = funds from operations + tax expense

Total debt = all interest bearing debt

Total equity = retained profits + reserves + share capital



**INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES**

Determination

Under the *Independent Pricing and Regulatory Tribunal Act, 1992*

Sydney Catchment Authority

**Determination No 10, 2000
Reference 99/206**

1 Definitions and Interpretation

1.1 Definitions

Expressions used in this Determination that are defined in the Appendix, have the meanings set out in the **Appendix**.

1.2 Interpretation

- 1.2.1 If there is any inconsistency between this Determination of the Tribunal and a previous determination of the Tribunal, this Determination will prevail to the extent of the inconsistency.
- 1.2.2 In the interpretation of this Determination a construction that would promote the purpose or object underlying the IPART Act (whether or not that purpose or object is expressly stated in the IPART Act) is to be preferred to a construction that would not promote that purpose or object.
- 1.2.3 In the event of any uncertainty, the notes in this Determination may be used for interpretation purposes.
- 1.2.4 The singular includes the plural and vice versa.

2 Application of this Determination

- 2.1 The following services supplied by the Authority have been declared government monopoly services under the IPART Act:
 - (a) water supply services,
 - (b) ancillary and miscellaneous services for which no alternative supply exists and which relate to the supply of those water services.

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

- 2.2 This Determination is made by the Tribunal under the IPART Act.
- 2.3 This Determination applies to the services covered by paragraph 2.1.
- 2.4 Subject to paragraph 2.5, the maximum prices listed or calculated in this Determination apply to the Authority from 1 October 2000 to 30 June 2005, unless otherwise indicated.
- 2.5 For the avoidance of doubt, in this Determination:
 - (a) Volumetric Charges commence from the first billing period of the Authority on or after 1 October 2000; and
 - (b) Fixed Availability Charges commence from 1 October 2000.

3 Water supply services to Sydney Water Corporation

The total charge for water supplied by the Authority to the Corporation for the period from 1 October 2000 to 30 June 2005 consists of a Fixed Availability Charge plus a Volumetric Charge as set out in paragraphs 3.1 and 3.2 respectively.

3.1 Fixed Availability Charge

The maximum Fixed Availability Charge that may be levied by the Authority for water supplied by it to the Corporation is set out in Table 1.

**Table 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
Fixed Availability Charge (per calendar month)	\$4.8 million	\$4.8 million \times $(1 + \text{CPI}_1^{-\text{GST}})$	\$4.8 million \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$	\$4.8 million \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$	\$4.8 million \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$ \times $(1 + \text{CPI}_4^{-\text{GST}})$

Note: For example the Fixed Availability Charge to the Corporation for the month October 2000 is \$4.8 million.

3.2 Volumetric Charge

The maximum Volumetric Charge (per megalitre) that may be levied by the Authority for water supplied by it to the Corporation is set out in Table 2.

**Table 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
Volumetric Charge (per megalitre)	\$104	\$104 \times $(1 + \text{CPI}_1^{-\text{GST}})$	\$104 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$	\$104 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$	\$104 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$ \times $(1 + \text{CPI}_4^{-\text{GST}})$

Note: For example, the Volumetric Charge to the Corporation for the month October 2000 (on the assumption that the Corporation acquires 40,000 megalitres) is \$4,160,000. That is, $\$104 \times 40,000 = \$4,160,000$.

4 Water supply services to Wingecarribee Shire Council

The maximum Volumetric Charge (per megalitre) that may be levied by the Authority for water supplied by it to Wingecarribee Shire Council is set out in Table 3.

Table 3 Volumetric charges for 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
Volumetric Charge (per megalitre)	\$60	\$68 \times $(1 + \text{CPI}_1^{-\text{GST}})$	\$77 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$	\$86 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$	\$94 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$ \times $(1 + \text{CPI}_4^{-\text{GST}})$

5 Water supply services to Shoalhaven City Council

5.1 Supply to Kangaroo Valley

The maximum Volumetric Charge (per megalitre) that may be levied by the Authority for water supplied by it to Shoalhaven City Council for use in Kangaroo Valley is set out in Table 4.

Table 4 Volumetric charges for Kangaroo Valley – 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
Volumetric Charge (per megalitre)	\$60	\$68 \times $(1 + \text{CPI}_1^{-\text{GST}})$	\$77 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$	\$86 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$	\$94 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$ \times $(1 + \text{CPI}_4^{-\text{GST}})$

5.2 Tallowa Dam releases to Shoalhaven City Council

The maximum Volumetric Charge (per megalitre) that may be levied by the Authority for Tallowa Dam releases to Shoalhaven City Council during times of Drought is set out in Table 5.

Table 5 Volumetric Charges for Tallowa Dam releases to Shoalhaven City Council in times of Drought – 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
Volumetric Charge (per megalitre)	\$60	\$68 \times $(1 + \text{CPI}_1^{-\text{GST}})$	\$77 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$	\$86 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$	\$94 \times $(1 + \text{CPI}_1^{-\text{GST}})$ \times $(1 + \text{CPI}_2^{-\text{GST}})$ \times $(1 + \text{CPI}_3^{-\text{GST}})$ \times $(1 + \text{CPI}_4^{-\text{GST}})$

6 Raw water

The total charge for Raw water supplied by the Authority to a Customer for the period from 1 October 2000 to 30 June 2005 consists of a Volumetric Charge as set out in Table 6.

Table 6 Volumetric Charges for Raw Water – 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
Volumetric Charge (per kilolitre)	\$0.44	\$0.44	\$0.44	\$0.44	\$0.44

7 Unfiltered water

The total charge for Unfiltered water supplied by the Authority to a Customer for the period from 1 October 2000 to 30 June 2005 consists of a Fixed Availability Charge plus a Volumetric Charge as set out in paragraphs 7.1 and 7.2 respectively.

7.1 Fixed Availability Charge for Unfiltered Water

7.1.1 Subject to 7.1.2, the maximum Fixed Availability Charge for Unfiltered Water that may be levied by the Authority on a Customer in each of the periods:

- 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

is the Fixed Availability Charge corresponding to the relevant Service Connection in Table 7.

7.1.2 Despite 7.1.1, for the period 1 October 2000 to 30 June 2001, the Fixed Availability charge is 75 per cent of the relevant Fixed Availability charge in Table 7.

**Table 7 Fixed Availability Charges for Unfiltered Water –
1 October 2000 to 30 June 2005**

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	$(\text{nominal diameter})^2 \times 75/400$

7.2 Volumetric Charge for Unfiltered Water

The maximum Volumetric Charge for Unfiltered Water that may be levied by the Authority on a Customer is set out in Table 8.

Table 8 Volumetric Charges for Unfiltered Water – 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
Unfiltered Water Volumetric Charge (per kilolitre)	\$0.73	\$0.73	\$0.73	\$0.73	\$0.73
		$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_1^{\text{X-GST}} - 2\%)$
			$(1 + \text{CPI}_2^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_2^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_2^{\text{X-GST}} - 2\%)$
				$(1 + \text{CPI}_3^{\text{X-GST}} - 2\%)$	$(1 + \text{CPI}_3^{\text{X-GST}} - 2\%)$
					$(1 + \text{CPI}_4^{\text{X-GST}} - 2\%)$

8 Consistency of this Determination with the New Tax System

This Determination has been made on the basis that the maximum charges are free of the GST.

If any charge in this Determination is, or becomes subject to the GST, it will be taken to be amended so that the maximum charge that may be levied is the charge determined in accordance with the formula:

$$\text{Charge}^{+\text{GST}} = \text{Charge} \times (1 + \text{Y})$$

Where:

Charge^{+GST} means the charge calculated under this paragraph;

Charge means the relevant charge expressed or calculated under this Determination;

Y means the amount defined in *A New Tax System (Goods and Services Tax) Act, 1999* as the GST payable per dollar of taxable supply.

Appendix

Determination: Sydney Catchment Authority Determination No 10, 2000

Defined Terms

In this Determination:

Authority means the Sydney Catchment Authority constituted under the *Sydney Water Catchment Management Act, 1998*.

CPI means the consumer price index, All Groups index number for the weighted average of eight capital cities as published by the Australian Bureau of Statistics, or if the Australian Bureau of Statistics does not or ceases to publish the index, then CPI will mean an index determined by the Tribunal that is its best estimate of the index.

CPI^{-GST} means the CPI exclusive of the net impact of:

- a) the GST; and
- b) changes to any other Commonwealth, State or Territory taxes or charges, consequent upon the introduction of the GST,

as calculated and published by the Australian Bureau of Statistics from time to time. If the Australian Bureau of Statistics does not, or ceases to, calculate and publish it then CPI^{-GST} will mean:

- (i) an index published by Commonwealth Treasury which is its best estimate of the CPI^{-GST}; or
- (ii) if Commonwealth Treasury does not, or ceases to, publish an index then an index published by the Reserve Bank of Australia which is its best estimate of CPI^{-GST}; or
- (iii) if the Reserve Bank of Australia does not, or ceases to, publish an index, then at the Tribunal's discretion, either:
 - (A) an index published by a person appointed by the Tribunal which is that person's best estimate of CPI^{-GST}; or
 - (B) an index published by the Tribunal that is its best estimate of CPI^{-GST}.

CPI₁^{-GST} means the number derived from the application of the following formula:

$$CPI_1^{-GST} = \left(\frac{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}}{CPI_{Jun1999} + CPI_{Sep1999} + CPI_{Dec1999} + CPI_{Mar2000}} - 1 \right) \times 100\%$$

where:

- CPI is as defined and where the corresponding subtext (for example _{Jun1999}) means the CPI for the quarter of the year indicated (in the example, the June quarter for the year 1999);

- CPI^{-GST} is as defined and where the corresponding subtext (for example $_{Dec2000}$) means the CPI^{-GST} of the quarter and the year indicated (in the example, the December quarter for the year 2000).

CPI_2^{-GST} means the number derived from the application of the following formula:

$$CPI_2^{-GST} = \left(\frac{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}}{CPI_{Jun2000}^{-GST} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}} - 1 \right) \times 100\%$$

where:

- CPI is as defined and where the corresponding subtext (for example $_{Jun2000}$) means the CPI for the quarter of the year indicated (in the example, the June quarter for the year 2000);
- CPI^{-GST} is as defined and where the corresponding subtext (for example $_{Dec2000}$) means the CPI^{-GST} of the quarter and the year indicated (in the example, the December quarter for the year 2000).

CPI_3^{-GST} means the number derived from the application of the following formula:

$$CPI_3^{-GST} = \left(\frac{CPI_{Jun2002}^{-GST} + CPI_{Sep2002}^{-GST} + CPI_{Dec2002}^{-GST} + CPI_{Mar2003}^{-GST}}{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}} - 1 \right) \times 100\%$$

where:

- CPI is as defined; and
- CPI^{-GST} is as defined and where the corresponding subtext (for example $_{Dec2001}$) means the CPI^{-GST} of the quarter and the year indicated (in the example, the December quarter for the year 2001).

CPI_4^{-GST} means the number derived from the application of the following formula:

$$CPI_4^{-GST} = \left(\frac{CPI_{Jun2003}^{-GST} + CPI_{Sep2003}^{-GST} + CPI_{Dec2003}^{-GST} + CPI_{Mar2004}^{-GST}}{CPI_{Jun2002}^{-GST} + CPI_{Sep2002}^{-GST} + CPI_{Dec2002}^{-GST} + CPI_{Mar2003}^{-GST}} - 1 \right) \times 100\%$$

where:

- CPI is as defined; and
- CPI^{-GST} is as defined and where the corresponding subtext (for example _{Dec2002}) means the CPI^{-GST} of the quarter and the year indicated (in the example, the December quarter for the year 2002).

Corporation means the Sydney Water Corporation constituted under the *Sydney Water Corporation Act, 1994*.

Customer means a person to whom the Authority supplies water, other than the Corporation, water supply authorities, prescribed local councils or prescribed county councils as described in section 16 of *the Sydney Water Catchment Management Act, 1998*.

Tallowa Dam releases describes the circumstance where the Shoalhaven City Council requests the Authority to release from Tallowa Dam water in excess of that which would usually be released by the Authority so as to enable the Shoalhaven City Council to provide water to towns within its local government area in times of water shortage.

Fixed Availability Charge means a fixed charge imposed by the Authority for water supplied by the Authority to a person, irrespective of the amount of water consumed by the person.

GST means the Goods and Services Tax as defined in *A New Tax System (Goods and Services Tax) Act, 1999*.

IPART Act means the *Independent Pricing and Regulatory Tribunal Act, 1992*.

Kangaroo Valley means the township of Kangaroo Valley within the local government area of the Shoalhaven City Council.

Raw Water is water that has not been treated in any way.

Shoalhaven City Council means the Shoalhaven City Council as constituted under the *Local Government Act, 1993 (NSW)*.

Tribunal means the Independent Pricing and Regulatory Tribunal of New South Wales established under the IPART Act.

Unfiltered Water means water that has been chemically treated but not treated at a water filtration plant.

Volumetric Charge means a charge imposed by the Authority for water supplied by the Authority to a person where the charge is based on the amount of water consumed by the person.

Wingecarribee Shire Council means the Wingecarribee Shire Council as constituted under the *Local Government Act, 1993 (NSW)*.