

Bulk Water Prices

Errata to Determination No 3, 2001 by the Independent Pricing and Regulatory Tribunal.

These errata have been issued to correct typographical errors in the printed copies of Determination No 3, 2001 that were distributed prior to gazettal.

In clause 4.2.4:

B = the maximum charge determined from the application of the formula in clause 4.3.3

Shall read

B = the maximum charge determined from the application of the formula in clause 4.2.3

In Table 5

- The reference to clause **4.3.3**
shall read clause **4.2.3**
- The reference to clause **4.3.4**
shall read clause **4.2.4**

In Table 6

- The reference to clause **4.3.3**
shall read clause **4.2.3**
- The reference to clause **4.3.4**
shall read clause **4.2.4**

For further information and inquiries on this supplementary note, please contact Mr Gerard O'Dea, Analyst, Water Pricing on 9290 8439

**DEPARTMENT OF LAND AND WATER
CONSERVATION**

BULK WATER PRICES

from 1 October 2001

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

**DEPARTMENT OF LAND AND WATER
CONSERVATION**

BULK WATER PRICES

from 1 October 2001

Determination No 3, 2001

December 2001

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1 INTRODUCTION AND OVERVIEW

The Independent Pricing and Regulatory Tribunal of New South Wales (the Tribunal) regulates the charges that the Department of Land and Water Conservation (DLWC) levies for services relating to the delivery of bulk water to farmers, irrigators, industrial users and town water suppliers. The Tribunal's role is to set the maximum prices DLWC can charge for these services, in accordance with Section 11(1) of the *Independent Pricing and Regulatory Tribunal Act, 1992*. The Tribunal's Determination will formally apply to the Water Administration Ministerial Corporation which is administered by DLWC.

Over the last five years, DLWC has made significant changes to its structure and accounting processes, aimed at improving the efficiency and transparency of its operations and enabling the introduction of fully cost reflective pricing. These reforms - which have been driven partly by the Tribunal's 1996 review of pricing policies for water services in NSW and by the Council of Australian Government's 1994 Water Reform Framework - include the separation of its water delivery services from its resource management activities by establishing State Water as a separate business and accounting unit within DLWC.

During this time, the Tribunal has not been able to set a price path of more than two years. The main reason was that DLWC could not provide it with the sound basis for establishing and allocating costs that is required to move bulk water prices towards cost reflective levels. In its 2000 Determination, the Tribunal indicated that it would consider setting a three-year price path as part of its review for its 2001 Determination, subject to DLWC making sufficient progress in implementing its recommendations on further institutional reform and activity costing.

The Tribunal notes that DLWC still has considerable scope to further refine its structural separation and financial information. However, it believes that the costing information DLWC has provided - together with the reports of two consultants the Tribunal commissioned to review State Water's operating and capital expenditure and water resource management expenditure within DLWC and State Water - has given it a sufficiently sound basis for calculating costs.

The ACIL Consulting review of water resource management costs indicated to the Tribunal that the level of water resource management costs sought by DLWC in its submission is likely to be conservative. The application of an efficient planning process is likely to expand rather than contract requirements for water resource management expenditure. Having considered this proposition, along with submissions, the Tribunal has decided to allow the full sum of water resource management costs sought by the Department. Whilst this results in an increase in the total cost base to be recovered, the Tribunal was satisfied that the inclusion of these costs was both appropriate to enable cost reflective pricing and necessary to encourage efficient resource management.

The ACIL consultancy also provided the Tribunal with a framework for allocating these costs between users and the broader community which was adopted by the Tribunal for the Draft Report¹. Having considered submissions received in response to the Draft Report the Tribunal has clarified some of the allocation principles proposed by ACIL and reconsidered the allocation of environmental and occupational health and safety compliance costs.

¹ IPART, *Bulk Water Prices from 1 October 2001 Draft Report*, October 2001.

The Tribunal has completed its review of the information provided by DLWC, consultants' reports and the input provided by other stakeholders, and made a Determination. It has decided to:

- **set a three-year price path from 1 October 2001 to 30 June 2004**
- **adopt an 'impactor pays' approach to allocating costs between bulk water users and the broader community, which involves allocating costs to individuals or groups in proportion to the contribution they make to creating the costs or the need to incur the costs**
- **set a maximum price for each of DLWC's bulk water charges, and to increase these prices each year so that prices move closer to full cost recovery level by the end of the determination period, with full recovery of the current cost base achieved in the majority of regulated rivers**
- **cap the amount by which any individual price can increase at 20 per cent (real) per annum for water extracted from unregulated rivers and groundwater sources and 15 per cent (real) per annum for water extracted from regulated rivers**
- **allow DLWC to progressively introduce a two-part tariff structure on unregulated rivers that includes a fixed charge and a variable charge based on usage.**

Because the current level of cost recovery varies between valleys, the prices in some valleys will increase by significantly less than the cap, particularly on regulated rivers, with users on the majority of these rivers facing real increases of 8.5 per cent per annum or less. The revised cost base and proposed prices will result in DLWC's overall level of cost recovery increasing from 61 per cent to 74 per cent during the determination period. For regulated rivers the overall level of cost recovery will increase from 81 per cent to 94 per cent during the determination period. However, it is likely that the total cost base will increase in future as the environmental impacts of water extraction become better defined.

The Tribunal has decided to accept DLWC's proposal to extend the two-part tariff structure to unregulated rivers because this structure emphasises consumption-based pricing, and thus will give users some capacity to manage their bulk water costs and encourage demand management.

This report discusses the Tribunal's Determination and the basis for its decisions in more detail:

- Chapter 2 outlines the review and price setting process the Tribunal followed to make the Determination and provides an overview of changes made between the draft and final reports.
- Chapter 3 assesses DLWC's progress since the 2000 Determination.
- Chapters 4, 5 and 6 explain the basis on which the proposed prices were set.
- Chapter 7 discusses the proposed maximum price for each charge.
- Chapters 8, 9 and 10 discuss the implications of these charges for DLWC, water customers and the environment.

2 THE TRIBUNAL'S REVIEW AND PRICE SETTING PROCESS

One of the Tribunal's primary considerations for this Determination is the need to set maximum prices for bulk water services that more adequately recover the costs DLWC incurs in providing these services, in line with a Government commitment to achieve full cost recovery for provision of bulk water. This commitment was made as part of the Council of Australian Governments' Water Reform Framework agreed in 1994.

In relation to bulk water, this Framework included a commitment to full cost recovery with prices set by a jurisdictional regulator, endorsement of consumption based pricing, full cost disclosure and institutional separation of service provision from water resource management, standards setting and regulatory enforcement.

The Tribunal recognises the importance of these commitments, particularly to ensure longer term environmental sustainability and economic efficiency. It recognises that it has an important role in defining what constitutes full cost recovery when it assesses and allocates costs. The cost base for bulk water has increased over time which, in part, is due to increasing recognition of the need for significant expenditure to better manage the bulk water system and mitigate its environmental impacts.

In setting prices the Tribunal is seeking to balance the need to implement these broader Government commitments with other important considerations, including the ability of bulk water users to absorb the price rises required to achieve full cost recovery and its own obligations under the IPART Act.

The review process

To achieve this objective, the Tribunal has undertaken a detailed review and price setting process. The first step of this process was to seek input from a wide range of stakeholders. It invited DLWC to submit a proposal on the maximum prices it believes are necessary to recover its costs for providing bulk water and related services over the period from 1 July 2001 to 30 June 2004. It also invited bulk water users, environmental groups and members of the public to make submissions. A public hearing, where selected parties presented their views, and two regional workshops, where key stakeholders discussed the proposals, were also held.²

In addition, the Tribunal commissioned two consultants' reports, to review and supplement DLWC's pricing proposal and financial information. PricewaterhouseCoopers (PwC) and ACIL Consulting (ACIL) were asked to:

- assess the appropriateness of State Water's proposed operating and capital expenditures
- comment on State Water's processes for determining future infrastructure expenditures
- identify any potential efficiency improvements in State Water's capital and operating expenditures
- review the level of water resource management expenditure

² The public hearing and workshops were held on 22 June, 29 June and 6 July 2001 respectively.

- review the extent to which water resource management expenditure should be recovered from bulk water users.

The Tribunal's next step was to determine whether DLWC had made sufficient progress towards meeting the requirements set out in the last Determination to enable the Tribunal to set a medium-term price path. The Tribunal believes that although DLWC has only gone part way towards meeting these requirements, it has made reasonable progress in some of the key areas. In particular, it has provided the Tribunal with significantly improved financial information. The Tribunal is confident that this information - together with the consultants' reports - provide it with a sufficiently robust understanding of DLWC's and State Water's cost base to enable it to set a three-year price path.

Finally, the Tribunal used the information gained in the steps above to determine a maximum price for each bulk water charge. The key steps in this process were to:

- establish the total level of efficient costs DLWC and State Water will incur during the determination period in managing and operating the bulk water system
- allocate these costs to the users of bulk water and to the Government, to determine the total costs to be recovered from users through bulk water charges
- calculate the price increases required to achieve full cost recovery by 2003/04, and determine a transition path that will protect users from unreasonable price increases
- determine bulk water prices in line with the outcomes of these steps.

Changes between the Draft and Final Reports

The Tribunal released a Draft Report and invited further submissions. It received a significant number of responses which it has considered carefully. Consequently this Report varies from the Draft Report in the following areas:

- Renewals and compliance capital expenditure will be funded through annuities. A return on assets in addition to the return inherent in the annuity payments will not be included in the cost base (section 4.3).
- The legacy and impactor pays principles are discussed in greater detail. The Tribunal has adopted a narrower interpretation of legacy costs than that proposed by ACIL and used in the Draft Report (section 5.1).
- In light of the review of the legacy principle some compliance cost allocation ratios have been revised to increase the proportion of these costs met by extractive users (section 5.1.4).
- The charges for users on unregulated rivers who will move to a two part tariff have been revised to apply a consistent 60:40 ratio between entitlement and usage charges (section 7.2.3).
- The relative charges for high and (general) low security entitlements have been further considered. The Tribunal does not have sufficient information to set cost reflective prices across all valleys at this stage. However, because there is a clear cost disparity in the Peel Valley the Tribunal has determined to hold low security entitlement charges at current levels, in real terms, in the Peel Valley as an interim measure (section 7.1.1).

The net impact of these changes and some other minor adjustments is to decrease the total cost base for the bulk water related activities of DLWC from \$97.3m in the Draft Report to \$96.2m. The amount allocated to users has increased from \$62.4m to \$63.0m. Charges to extractive users are expected to yield \$40.4m in 2001/02 compared with \$40.7m anticipated in the Draft Report. By 2003/04 charges are anticipated to yield \$47.1m compared with \$46.2m anticipated in the Draft Report (see Figure 5.1).

Throughout the review process, the Tribunal has had regard to its obligations under the IPART Act and other relevant government policy and legislation. The IPART Act requires it to achieve an appropriate balance between a range of economic, social and environmental considerations (listed in Section 15 of the Act), which include:

- economic efficiency
- financial sustainability
- the promotion of competition
- equity
- environmental sustainability
- simplicity and transparency
- certainty and control of the costs of regulation.³

The Tribunal was also mindful of the fact that the new *Water Management Act 2000* will be implemented over the period of its price determination, and this is likely to have significant impacts on bulk water users and on the management of environmental issues related to the extraction of bulk water. The interaction of this Act and the Tribunal's Determination are discussed in Chapter 10.

The Tribunal appreciates the significant contributions made by stakeholders to this review and would strongly encourage the development of joint approaches, where possible, by stakeholder groups and the Department prior to the next Determination.

The Tribunal members who considered this Determination are Dr Thomas Parry (Chairman), Mr James Cox (Full-time Member), and Dr Warren Musgrave (Member).

Copies of all submissions, a transcript of the public hearing and the ACIL Consulting and PricewaterhouseCoopers reports 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 The Section 15 requirements and the regard the Tribunal has had to these requirements are outlined in Appendix 2.

3 ASSESSING DLWC'S PROGRESS SINCE THE 2000 DETERMINATION

In its 2000 Determination, the Tribunal set out some specific requirements that DLWC would need to meet before the Tribunal would consider setting prices for more than one year.⁴ The most important of these was improved financial information that provided a rigorous and clearly defined cost base for bulk water delivery and water resource management from which the Tribunal could determine cost reflective prices.

The Tribunal has reviewed DLWC's progress, and recognises that it has not met all the requirements. However, the Tribunal believes that it does have sufficient information to enable it to make a determination for three years, and move prices towards cost reflective levels. The information DLWC has provided on its cost base is of a much higher quality than for previous determinations. In addition, the consultants commissioned by the Tribunal to investigate DLWC's costs and propose sound cost allocation principles have provided additional input that filled many of the remaining gaps.

This chapter summarises DLWC's progress on some of the key requirements, including the provision of information on the separation of State Water from the rest of DLWC, improved financial information, and improved levels of customer service.

3.1 Separation of State Water

While DLWC had established State Water as a separate business unit within DLWC at the time of the last Determination, it still had significant work to do to effectively separate State Water's role and responsibilities as bulk water supplier from DLWC's broader water management and regulator role. That work is ongoing, and the Tribunal expects that DLWC will issue State Water with an operating authority and a water access authority, effectively ring fence State Water's operations from the rest of DLWC and establish sound, transparent service agreements between State Water and DLWC.

3.1.1 Issuing an operating authority and water access authority

DLWC has made progress in developing operating and water access authorities for State Water which are intended to provide the framework for separating State Water's roles, responsibilities and accountabilities. These instruments are currently in draft form, and when finalised will require State Water to:

- make summaries of annual valley operating plans available to customers
- establish performance standards and an associated measurement and evaluation mechanism in consultation with Customer Service Committees (CSCs)
- establish, in consultation with CSCs, a Customer Service Charter that is to be reviewed annually
- maintain quarterly and annual financial reports in an auditable format and itemised performance against the Statement of Financial Performance
- prepare an annual report on each river operational system including performance against relevant IPART determinations or recommendations

⁴ See Appendix 6 for a complete list.

- allow a financial audit of State Water to be conducted in accordance with the directions of the Director-General and recommendations contained in IPART Determinations
- develop a document of similar format to the Statement of Financial Performance to be used as an internal DLWC planning tool.

The Tribunal expects that the introduction and effective administration of these authorities will result in more transparent separation and further improvement in State Water's information provision.

3.1.2 Ring fencing State Water from DLWC

DLWC believes that it has made satisfactory progress in ring-fencing State Water. It has established State Water as a separate business unit within its financial accounting system, and undertaken an extensive program to ensure that State Water operates in an independent and clearly separate way from DLWC and is assessed in relation to its performance against financial and commercial targets.

Many stakeholders⁶ are concerned about the method of separation, however, and believe State Water should be established as a separate legal identity. They believe that there are potential conflicts of interest between service provision and regulation, that there is a risk of costs being incorrectly allocated to State Water or DLWC, and of costs being double counted. The NSW Irrigators' Council⁷ believes that the method of separation does not satisfy the COAG framework of accountability, increased efficiency and minimisation of conflicts of interest.

The Tribunal retains some concerns about the degree of separation achieved. However, it has decided it will monitor the effectiveness of the current arrangements over the determination period, and review this issue at the next Determination.

3.1.3 Establishing sound, transparent service agreements

Critical for effective ring fencing is the existence of sound, transparent agreements for any service provision between related businesses. Ideally, the provision of these services should be subject to open tender so that customers can be confident that services of a particular standard are delivered at the lowest price. DLWC currently provides a range of services to State Water, only some of which are charged for by way of service agreements. DLWC considers⁸ that none of these services can be substituted by those of a commercial service provider, although some customers dispute this.⁹

⁵ IPART, *Transcript of Public Hearing*, 22 June 2001, p 7 (www.ipart.nsw.gov.au/transcri/GP220601.pdf).

⁶ See, for example, submissions from NSW Irrigators Council, Border Rivers Food and Fibre, Namoi Valley Water Users' Association Inc., Macquarie Customer Service Committee, Murray Customer Service Committee.

⁷ See NSW Irrigators' Council submission, p 10.

⁸ DLWC submission, Appendix 1, p 5.

⁹ See for example submissions from NSW Irrigators Council and Lachlan Valley Customer Service Committee.

As part of its review of State Water's operating and capital expenditure, PwC examined DLWC's service agreement process. It found that the existing agreements for service provided by DLWC to State Water fall into two categories - those related to program activities (such as technical services for river gauging, surveillance surveys, and software application development), and those related to corporate support and shared facilities (including payroll services, legal services, and human resources management). However, not all the services supplied by DLWC are covered by service agreements at this stage. The process is still developing, and some agreements have not been signed.

PwC recommends that service agreements for all services provided by DLWC to State Water and vice versa should:

- include output performance measures and monitoring processes
- clearly identify costs related to outputs
- be subject to documented and agreed variations
- be signed
- be subject to market testing.

The Tribunal expects DLWC to quickly formalise and finalise the process of charging for services between DLWC and State Water. It also expects that, as State Water becomes more experienced in conducting its business, it will be able to seek tenders from and engage external service providers for some of the services currently provided by DLWC.

3.2 Financial information

DLWC was required to provide a range of financial information including audited special purpose valley financial statements, and a copy of its current Total Asset Management Plan (TAMP).

3.2.1 Audited valley financial statements

State Water now produces valley financial reports, which provide better quality financial information than that supplied for previous reviews. However, the valley financial accounts are still not independently audited. DLWC believes an independent audit cannot be carried out because the valley financial reports are not derived from separate sets of accounts. The Tribunal is aware that there are cost implications in setting up separate accounts for each valley, but it considers that further work needs to be done to ensure the integrity of the cost database. The Tribunal notes that, in discussions, ACIL commented that while State Water's process for recording information is sound, it is not consistently implemented across all valleys.

3.2.2 Total Asset Management Plan (TAMP)

State Water has developed a TAMP, which provides a basis for its future asset management and hence asset related expenditure. PwC reports¹⁰ that the current TAMP provides a more detailed assessment of State Water's forecast costs than has been available in the past, and probably provides a better assessment than is available from most other major headwork owners. It notes, however, that the TAMP is undergoing continuing revision.

Some customers¹¹ have also commented on this revision, and are concerned that it seems to translate into increases in costs. They are also concerned about the complexity of some of the methods used to calculate costs, such as the use of annuities. The Tribunal has also had concerns about what has been an uncertain and varying cost base, although it anticipates a greater degree of certainty following the PwC capital and operating expenditure review.

3.3 Customer service

The Tribunal requested a range of information to show what progress DLWC had made in improving its customer service standards, including:

- consulting with user groups and other stakeholders
- reviewing and improving the billing system
- establishing a protocol for dealing with customer complaints
- establishing a Customer Service Charter; and
- conducting a customer satisfaction survey.

3.3.1 Consultation

At the time of the last Determination, State Water had already established customer service committees (CSCs) made up of representatives of bulk water customers in individual valleys to provide it with advice on issues such as service levels and asset management priorities. However, some customers were concerned about how effective the CSC could be in influencing costs and service levels. Twelve months later, these concerns remain. The Tribunal received several submissions from CSCs, in which they complained about a lack of information, late arrival of financial information, and lack of consultation over costs and service levels.

The Tribunal is concerned that the objective of the CSCs - to enable stakeholders to influence decisions about how bulk water services are delivered in their valley - may not be realised. The Tribunal expects that in meeting the obligations set out in its Operating Authority and Access Authority, State Water will better manage its consultation with CSCs in the period up to the next Determination.

¹⁰ PricewaterhouseCoopers, *Review of Capital and Operating Expenditure in the New South Wales Department of Land and Water Conservation's State Water Business*, July 2001, p 82.

¹¹ See, for example, submission from NSW Irrigators Council.

3.3.2 Billing system

State Water has made several improvements and changes to its billing system, including having an audit conducted by the NSW Auditor General. These appear to have been effective, as few stakeholders mentioned billing problems in submissions to the current Determination. However, the Tribunal will look at this issue again at the time of its next Determination, when it expects DLWC will have undertaken customer surveys that will give the Tribunal a better view of customer perceptions of the new billing system.

3.3.3 Protocol for dealing with customer complaints

DLWC has a customer complaint handling system which includes a protocol for staff to follow when handling and logging complaints. State Water has a complaints procedure which is currently under review with a view to enable electronic registration of complaints.

3.3.4 Customer surveys and customer service charter

The Tribunal notes that DLWC has not conducted a customer survey since 1999, but intends to do so in June 2002. It also notes that DLWC has not completed negotiating a customer service charter with CSCs, but that such a charter is being developed. The establishment and annual review of this charter has also been included in State Water's draft operating authority.

4 ESTABLISHING DLWC'S EFFICIENT COST BASE

The first step in determining maximum prices for bulk water services for this Determination was to assess the efficient costs of DLWC's water operations and water resource management activities. To do this, the Tribunal examined estimates of these costs submitted by DLWC¹², together with the reviews of these estimates it commissioned from PricewaterhouseCoopers (PwC) and ACIL Consulting (ACIL) and stakeholder submissions. The Tribunal concluded that the total efficient annual cost base for the period 2001/02 to 2003/04 is \$98.4m per annum (expressed in 2001/02 dollar values), which is 6.1 per cent less than DLWC's estimate of \$104.9m. The Tribunal then subtracted the estimated savings resulting from the implementation of *A New Tax System (Goods and Services Tax) Act, 1999* (ANTS)¹³, to arrive at an annual total cost base of \$96.2m. In the remainder of the report, all values presented are in 2001/02 dollars and after deducting ANTS savings, unless otherwise stated.

Table 4.1 summarises the Tribunal's revisions to DLWC's estimate of total costs for the NSW bulk water system. This system is the responsibility of the DLWC with bulk water delivery the primary responsibility of State Water, a business unit of the Department, with the latter also having broader responsibility for managing the system and its water resources. The balance of this chapter discusses these major components of this total cost figure - operating costs, water resource management costs and capital costs.

¹² To arrive at this estimate, DLWC took its 1999/2000 actual costs, then subtracted an amount for efficiency savings and added an amount for costs which it argues should be part of the operational costs recovered. These 'additional' costs are largely related to water resource management. The efficiency savings are not forecast productivity improvements per se, but rather are the unachieved portion of the savings required in the 1998 determination. The additional costs result from several factors, including higher levels of resource management, some reclassification of costs (from annuity capex to routine (asset maintenance) opex), implementation of TAMP, etc.

¹³ This savings estimate was based on the Econtech model, which has been widely used by regulators, business and government, to assess GST impacts.

**Table 4.1 Total efficient costs of the NSW bulk water system
(Post ANTS 2001/02 \$'000 constant for each year of the pricing period)**

Costs	DLWC's estimate	Tribunal's revised estimate
Operating and maintenance	33,011	29,925
Water resource management	41,251	41,251
Capital		
State Water renewal annuity	6,534	5,496
State Water compliance annuity	10,607	11,469
MDBC renewal annuity	5,793	3,777
MDBC compliance annuity	-	2,690
DBBRC annuity	83	83
Depreciation	1,556	1,556
Return on assets	3,709	-
Total capital	28,282	25,073
Total costs	102,544	96,248

Notes:

1. The costs have been indexed to real 2001/02 values using CPI for the 8 Capital Cities and IPART's forecast CPI of 3.0 per cent.
2. Totals may not add up due to rounding.
3. All values in this table including those submitted by DLWC have been adjusted for ANTS savings.

4.1 Operating costs

Operating and maintenance costs are those that relate to the daily operations and administration of DLWC's bulk water business. After considering DLWC's estimate of these costs and PwC's review of this estimate, the Tribunal has concluded that the DLWC estimate could be reduced by around 9 per cent. As a result, it has decided to assess operating and maintenance costs as \$29.9m per annum.

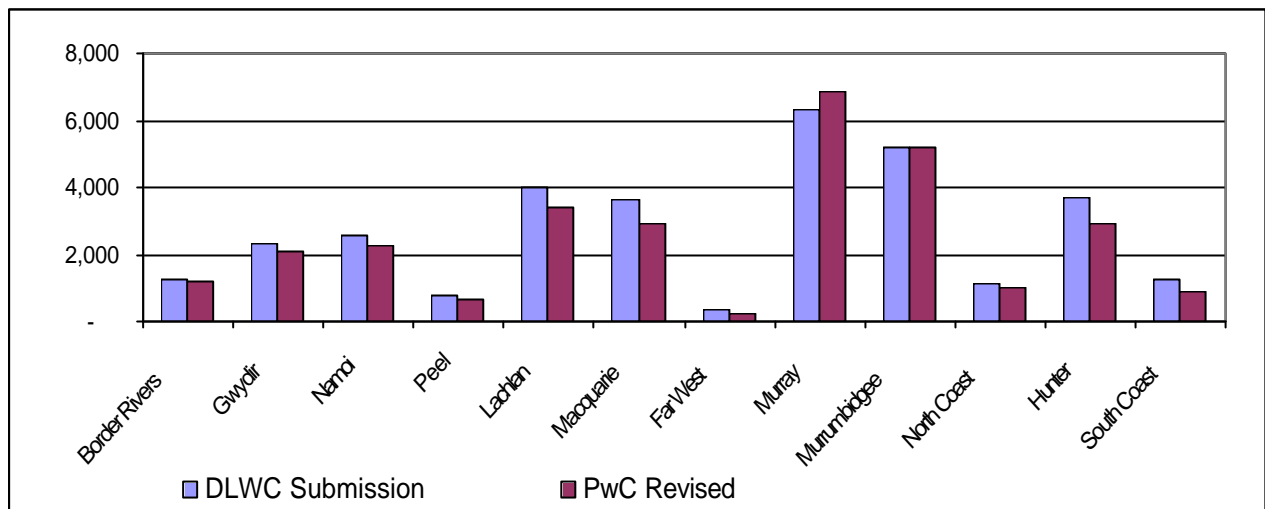
4.1.1 DLWC's estimate

DLWC estimated its operating and maintenance expenditure to be \$33.0m. This amount includes operating costs related to State Water, the Murray-Darling Basin Commission (MDBC) and the Dumaresq Barwon Border River Commission (DBBRC). While the costs related to DBBRC are very small, those estimated for MDBC are significant, at \$7.9m.

4.1.2 PwC's review

PwC examined the operating and maintenance costs included in DLWC's estimate at a detailed, sub-product level. PwC recommended a net reduction in total operating and maintenance costs of \$3.1m per annum, or around 9 per cent. This reduction resulted from removing costs that should not be included as operating and maintenance costs, scaling down proposed costs to benchmark levels, and identifying areas for efficiency improvements.

Figure 4.1 Operating Costs (Post ANTS 2001/02 \$'000)



PwC's recommended adjustments in operating costs vary from valley to valley as shown in Figure 4.1. In some valleys it has recommended reductions higher than the overall 9 per cent, while in other valleys it has recommended increases.¹⁴

After considering PwC's report and the arguments raised in submissions, the Tribunal has accepted PwC's revisions to DLWC's operating costs, as shown in Table 4.2. The Tribunal recognises that the industry is in the process of reform brought on by the introduction of the new Water Management Act which will continue for some years as the Act is progressively implemented.¹⁵ At the next review, DLWC's operating costs are likely to be reviewed again in the light of ensuing developments in the industry. Therefore the costs allowed in this Determination should not necessarily be regarded as the benchmark efficient costs for the longer term.

Table 4.2 Revised operating costs (Post ANTS 2001/02 \$'000)

	DLWC estimate	Revised estimate	Difference
Regulated	29,708	26,736	-2,972
Unregulated	2,706	2,598	-108
Groundwater	596	591	-6
Total	33,011	29,925	-3,086

Note:

1. The values in the table refer to operating costs after exclusion of efficiency savings and the inclusion of proposed additional costs.

¹⁴ For full details of the operating costs, please refer to the PwC report *Review of Capital and Operating Expenditure in the New South Wales Department of Land & Water Conservation's State Water Business*.

¹⁵ See Chapter 10 (p 65) for an overview of the *Water Management Act 2000*.

4.2 Water resource management costs

Water resource management (WRM) costs are those incurred by DLWC to manage river and ground water systems. There was some debate among stakeholders about what WRM costs should be considered for this Determination. ACIL's review of the WRM costs commented that:¹⁶

...the water resource management costs tabled by DLWC in its submission are almost certainly conservative in the sense that continued application of an efficient planning process is likely to expand rather than contract the expenditure items, possibly quite substantially...

After considering the various views expressed on this issue, together with DLWC's estimate of its WRM costs and ACIL's review of this estimate, the Tribunal has accepted the DLWC estimate of \$41.3m per annum.

4.2.1 WRM costs considered for this Determination

The term WRM is very broad, and can include a wide range of activities. WRM costs can be operating costs or capital costs or both. The Tribunal's main issue for this Determination was to isolate which WRM costs DLWC should recover in its bulk water prices. The Tribunal concluded that WRM costs are costs that are:

- made necessary as a consequence of extractive water use activities, including construction and operation of dams, weirs, pumps, etc
- concerned directly with the hydrology of the NSW surface and groundwater systems
- not justified by the benefits they provide to current and future extractive users alone.

Environmental groups and NSW Fisheries argued that WRM costs incurred by agencies other than DLWC, such as NSW Fisheries, should also be included as part of the assessment of the 'full cost' of the bulk water services and recovered from users. However, it is beyond the scope of the Tribunal's review to evaluate WRM costs that may be incurred by other agencies. An extension of the Tribunal's role to include evaluation of the costs of other agencies in the cost base used for bulk water price setting would be a matter for Government.

4.2.2 DLWC's estimate

DLWC estimated its WRM costs to be \$41.3m per annum. This estimate only includes operating costs relating to WRM. Capital costs incurred may serve several purposes including WRM, occupational health and safety and bulk water delivery but any WRM component of these costs has not been separately identified. They have therefore been included in the Tribunal's amended capital costs as outlined below.

¹⁶ ACIL, *Review of Water Resource Management Expenditure in the NSW Department of Land and Water Conservation and State Water Business*, p vii, 2001.

Table 4.3 DLWC estimate of non-capital WRM costs (Post ANTS)

	2001/02 \$'000
Regulated	19,324
Unregulated	14,432
Groundwater	7,494
Total	41,251

4.2.3 ACIL's review

ACIL commented that the ongoing water reform process and the introduction of the *Water Management Act, 2000* will affect DLWC's WRM costs, and that the full impact of these changes are not yet known. (For example, the new Act requires DLWC to introduce new systems and procedures, and the cost impact of this is not fully known.) Hence estimating efficient WRM costs for the current review period is an inherently uncertain process. In this context, ACIL recommends that the Tribunal approve the DLWC estimate of WRM costs for this pricing Determination, which they note is likely to be conservative.

Submissions received by the Tribunal have argued that the appropriate level of WRM expenditure is higher and should be determined following scientific research to establish base line data and the definition of environmental service standards.¹⁷ The Tribunal recognises that our understanding of the environmental consequences of water extraction is likely to continue to improve and this, combined with current changes in the industry, make it difficult to forecast efficient levels of WRM costs at this stage. For this reason the Tribunal has accepted DLWC's submission and ACIL's recommendation and allowed the full amount sought for WRM in the cost base.

4.3 Capital costs

Capital costs charged to users include recovery of the capital expended by DLWC (depreciation or equivalent) and a return on capital. Alternatively, users may fund capital expenditure directly. It is unreasonable for users to be charged a rate of return on funds which they have contributed.

DLWC charges for long-lived assets by estimating capital expenditure over a thirty year period and then converting these amounts into an annuity. These annuity payments form part of the cost base used to determine bulk water charges. The annuity payments include capital and interest components that will fund directly the capital expenditure when it is incurred.

¹⁷ Submission in response to Draft Report jointly prepared by World Wide Fund for Nature, Australian Conservation Foundation, Nature Conservation Council of NSW and Inland Rivers Network, 9th November 2001.

As part of its review of the operating and capital expenditure proposed by DWLC, PwC carried out an assessment of capital costs which includes:

- detailed review of the capital projects in the State Water Total Asset Management Plan (TAMP), reviewing the timing, necessity and reasonableness of the expenditure proposed in the TAMP
- review of the portion of the Murray Darling Basin Commission’s (MDBC) capital costs included by DLWC
- review of the portion of the Dumaresq Barwon Border Rivers Commission (DBBRC) capital costs included by DLWC.

The Tribunal has examined PwC’s detailed review of DLWC’s capital expenditure program. After careful consideration the Tribunal has accepted PwC’s recommendations for changes in the components of this capex program — both in the quantity and timing of expenditure. These changes reduce the total capital costs included in the cost base from \$28.3m to \$25.1m per annum. The Tribunal also believes the allocation and timing of expenditure in the revised capex program is more realistic.

Table 4.4 below shows DLWC’s estimated capital cost base. It excludes capital costs for capacity enhancements where DLWC and users have negotiated directly their respective cost shares. The rest of this section explains the revisions the Tribunal made to this base, in line with PwC’s recommendations.

Table 4.4 Updated DLWC estimate of capital cost (Post ANTS 2001/02 \$’000)

	Capital expenditure				Depreciation Charges	Return on Capital	Total
	State Water Renewals Annuity	State Water Compliance Annuity	MDBC Assets Renewals Annuity	DBBRC Asset Annuity			
Regulated	6,401	10,595	5,793	83	82	3,645	26,599
Unregulated	132	12	-	-	-	65	209
Groundwater	-	-	-	-	1,474	-	1,474
Total	6,534	10,607	5,793	83	1,556	3,709	28,282

Note:

1. The Groundwater depreciation charges were subsequently revised from \$0.9m in the original submission to \$1.5m. The \$0.9m was current at the submission date, but subsequently an updated version of the asset data was attained. This higher value of \$1.5m was reviewed by the consultants.

4.3.1 Capital expenditure (capex)

PwC derived DLWC’s estimate of capital expenditure over the next 30 years from its TAMP. PwC commented that the current TAMP provides a far more detailed assessment of DLWC’s projected capex than has been available in the past.¹⁸ Nevertheless, PwC found inconsistencies in how DLWC allocated costs to the areas of renewals, compliance and enhancements in the TAMP, and identified some areas where inadequate expenditure had

¹⁸ PwC, *Review of Capital and Operating Expenditure in the New South Wales Department of Land & Water Conservation’s State Water Business*, 2001 p 82.

been allowed. Its assessment concluded that revisions to DLWC's capex, particularly compliance capex, are needed in order to meet safety standards.

PwC revised the 30 year capital expenditure program to a level higher than proposed by DLWC. This was mainly a result of increasing compliance capital expenditure, and the inclusion of a component for compliance in MDBC costs. These are discussed below. Generally the Tribunal has adopted the revised capital expenditure numbers from PwC. The Tribunal intends, as part of its next bulk water review, to compare DLWC's actual capital expenditure with the amounts allowed for in this Determination. Note that the total capital expenditure used in the Determination is slightly higher than in the Draft Report and in PwC's published report. This is due to the use of an updated version of the TAMP, which was analysed by PwC and used by ACIL (after PwC's changes) in the analysis of user shares (see Chapter 5).

DLWC capex is broken up into the following major areas, which are discussed separately below:

- State Water's renewals works on dams, regulators and weirs to ensure the continuation of the function/services.
- State Water's compliance capital expenditure on dams, regulators and weirs incurred to ensure that the assets and operations meet relevant safety, environmental and technical standards set by various regulatory bodies.
- State Water's enhancement capital expenditure to augment the assets to increase their capacity.
- MDBC and DBBRC capital expenditure – these two organisations are inter jurisdictional bodies, set up to manage rivers systems bordering VIC, NSW and SA (MDBC) and QLD and NSW (DBBRC).

State Water renewals capex

Renewals capex relates to expenditure incurred to refurbish existing structures, or to replace them at the end of their useful life, so that the organisation retains the same service capacity. State Water's renewals capex is categorised according to the major asset type it relates to - either dams or regulators and weirs:

- **Dams.** A recent review of State Water's dams found that past maintenance was inadequate, and that the dams have deteriorated significantly. To rectify this, DLWC plans an intensive program of renewal works for dams in the coming few years. While PwC believes this expenditure is justified, it is concerned that the current TAMP may not include sufficient renewals capex in later years. This could result in another increase in renewals at the start of the next 30 year cycle of the TAMP. However, because increasing renewals capex in the later year will have only a small impact on the renewals annuity for this determination period, PwC did not recommend adjusting the capex forecast.
- **Regulators and weirs.** PwC believes the renewal expenditure for these assets is generally sufficient. However, it is concerned with the overall lower than expected levels allocated to major periodic maintenance/rehabilitation. In addition, some stakeholders commented on the large capital expenditures planned for the first five years of the TAMP. PwC comments that this expenditure is required due to inadequate maintenance in the past. The Tribunal notes that it is important that CSCs

and other stakeholders ensure that State Water’s maintenance program is implemented.

As Figures 4.2 and 4.3 show, PwC’s revised estimate of renewals capex is lower than the estimate included in DLWC’s submission. The main reasons for this are that PwC amended some costs and deferred the timing of some projects to future years. Additionally, PwC assessed a revised version of the TAMP which included lower costs.

Figure 4.2 Dam renewals capex - DLWC estimate compared to Tribunal’s revised estimate (2001/02 \$’000)

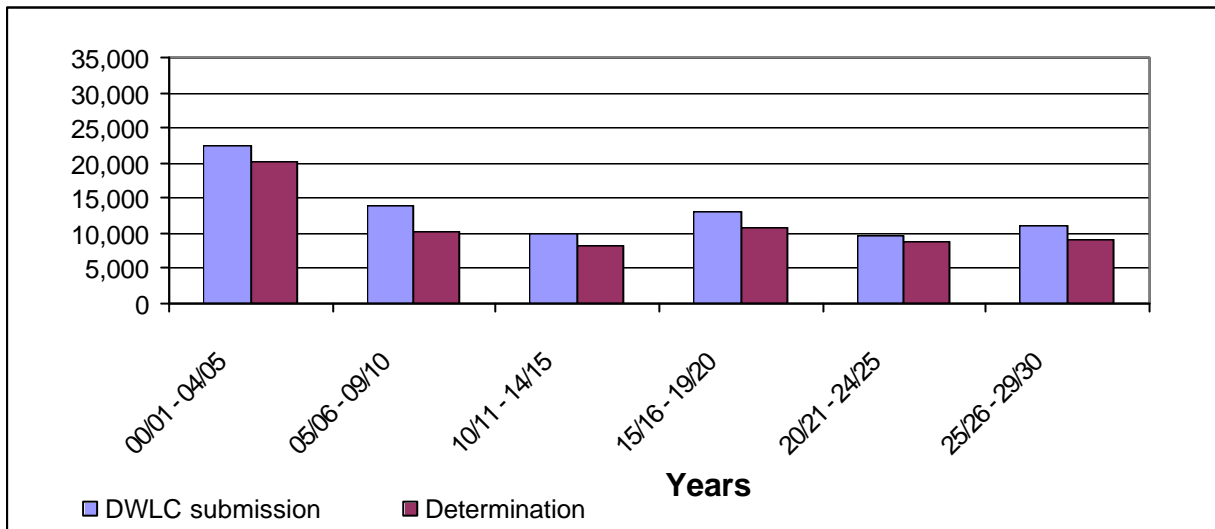
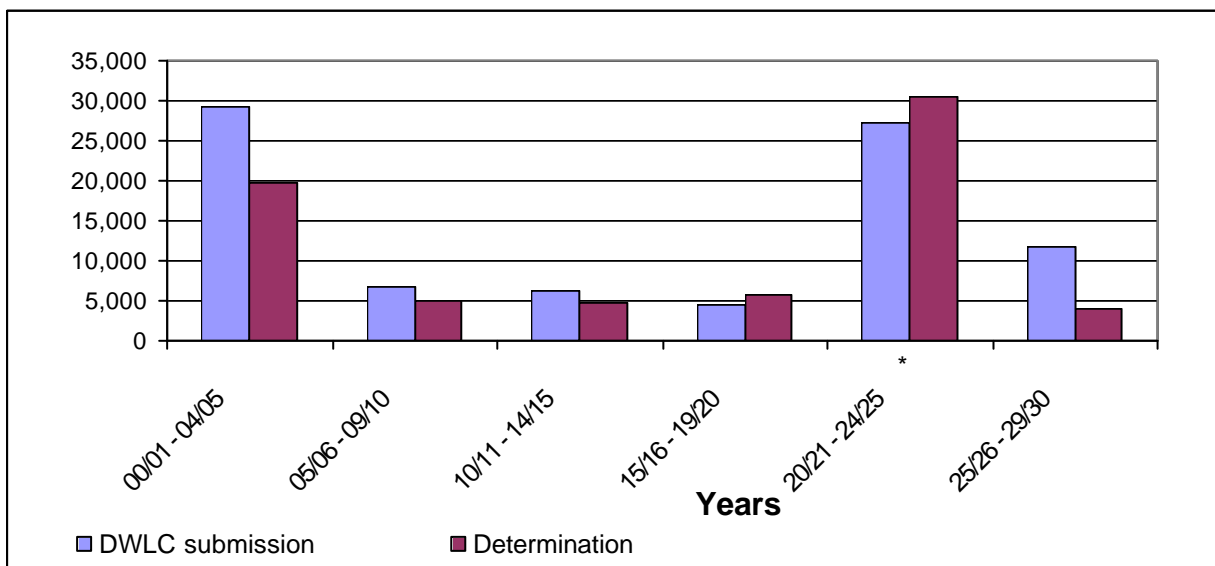


Figure 4.3 Regulator and weir renewals capex - DLWC estimate compared to Tribunal’s revised estimate (2001/02 \$’000)



Note:

*Allocation for 2020/21 – 2024/25 period includes allowance for replacement of Berembled Weir and Regulator.

State Water compliance capex

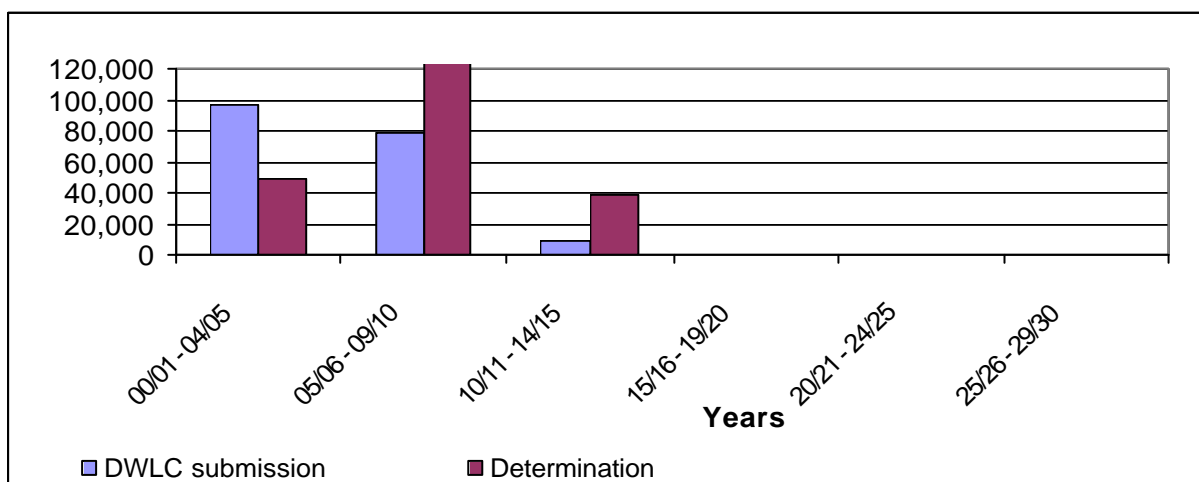
Compliance capex aims to ensure that an organisation's assets and operations meet the standard requirements set down by various authorities. It differs from renewal capex in that it increases an asset's functionality, whereas renewals capex merely maintains its current capacity and quality. As a result of its review, PwC has recommended significant changes to the timing and quantity of State Water's compliance capex:

- **Dams.** As Figure 4.4 shows, PwC recommends increasing the overall amount of compliance capital expenditure. This is largely to enable State Water to undertake more dam upgrades, so it can meet new guidelines in relation to floods and seismic activities. PwC also recommends adjusting the timing of this expenditure, extending it further into the future, as it believes that the current timetable in the TAMP is not achievable.

PwC also notes that more compliance capex on dams may be needed to address environmental impacts associated with extraction - for example to mitigate thermal pollution, create fishways and improve environmental flows - than is allocated by DLWC. However, because the available information was insufficient to estimate how much additional expenditure is required to offset environmental damage caused by water extraction, PwC did not recommend adjusting DLWC's compliance capex at this time. The Tribunal is aware that NSW Fisheries is working with DLWC to clarify the likely necessary expenditure and an increased compliance annuity may be required.

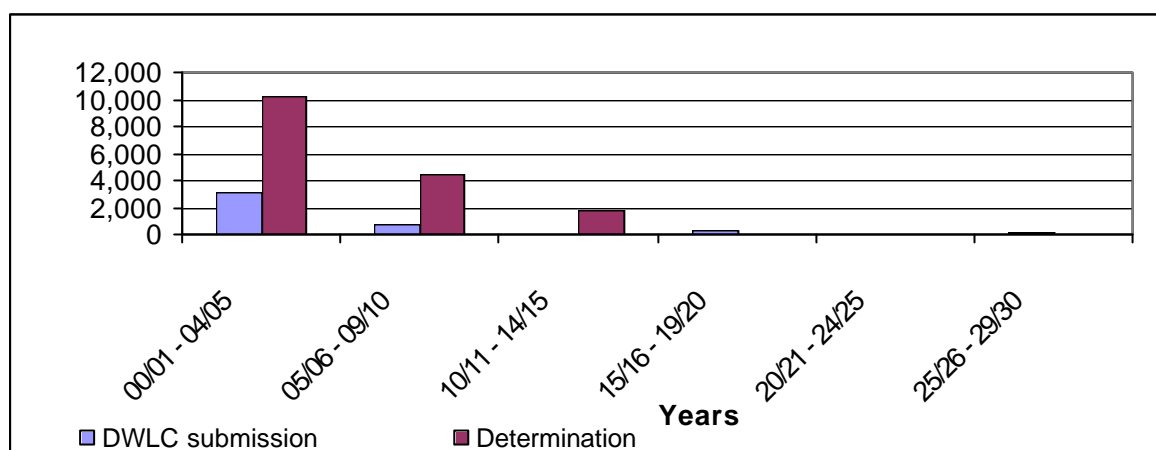
- **Regulators and weirs.** Most of the compliance capex DLWC allocated to State Water's regulators and weirs is to improve fishways and upgrade drop boards¹⁹ (for OH&S reasons). NSW Fisheries has argued for more fishways to be constructed on these river structures. PwC notes that DLWC's program in this area is unlikely to satisfy NSW Fisheries and proposed an increased allocation for this purpose. Additionally PwC recommends reallocation of additional expenditure from the Renewals/Replacement category in DLWC's submission into the OH&S Compliance category - principally for drop board upgrades. This is reflected in Figure 4.5.

Figure 4.4 Dam compliance capex - DLWC estimate compared to Tribunal's revised estimate (2001/02 \$'000)



¹⁹ Drop boards are structures on dams which may be raised or lowered to moderate the flow of water through the dam. Drop boards can be either manually operated or automated.

Figure 4.5 Weir and regulator compliance capex - DLWC estimate compared to Tribunal's revised estimate (2001/02 \$'000)



State Water's enhancement capex

The major enhancement capex included in DLWC's TAMP is the off-creek storage on Lake Mejum in the Murrumbidgee Valley. This project has been on the drawing board for the last 20 years, and has recently been the subject of renewed interest. However, its capital costs will be recovered directly from the users, not through this Determination (the price is to be negotiated at the inception of the project). It therefore falls outside this bulk water review, and is not included in the Tribunal's capex estimate.

MDBC and DBBRC capex

MDBC capital costs are shared between the NSW, Victorian, South Australian and Commonwealth governments. The Commonwealth Government pays 25 per cent of the capital costs, while the states pay a set proportion of the remaining 75 per cent in line with their share of operating costs (with NSW paying 40 per cent, Victoria 36 per cent and SA 24 per cent).

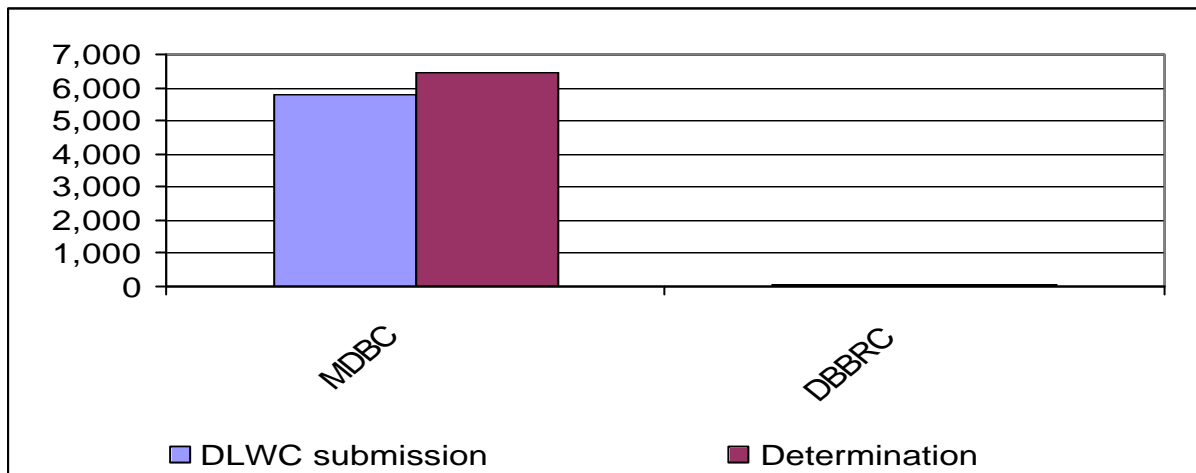
DLWC included a \$5.8m annuity for MDBC renewals capex in its estimate of capital costs. PwC recommends this amount be reduced to \$3.8m, in order to:

- take into account the Commonwealth Government's 25 per cent share of capital costs, which DLWC had not allowed for (thereby overstating NSW's share)
- exclude Hume Dam remedial works which have largely been completed
- convert the 100 year MDBC annuity to a 30 year annuity, in line with DLWC
- reallocate \$0.3m of renewals capex, which it believes is more appropriately allocated to the DLWC product dealing with salinity strategies.

DLWC did not include an annuity for MDBC's compliance capex. In its review, PwC have found that compliance capex is being incurred in relation to MDBC and recommends that an amount of \$2.7m be included to cover these costs.

DLWC included a small annuity for DBBRC's capex, which has remained unchanged.

Figure 4.6 Comparison of DLWC's submitted MDBC and DBBRC annuities and the Tribunal's revised annuities (Post ANTS 2001/02 \$'000 pa)



Note:

1. The MDBC annuity under DLWC's submission was \$5.8m (post ANTS) renewals annuity. Under the revised annuities, the MDBC capex is made up of \$3.8m (post ANTS) renewals and \$2.7m (post ANTS) compliance annuities.

4.3.2 Capital charge

The existing asset base

The Tribunal expressed its view in 1996²⁰ that it believed that many of the rural water infrastructure assets were put in place in the late nineteenth and early twentieth century because it was a government priority at the time to expand agriculture and rural development. Water prices had until recently contained substantial subsidies and there was never any stated intention by governments across Australia to fully recover these charges. This changed in 1994 when governments determined to implement plans to eventually recover the full economic costs of bulk water service.

The Tribunal does not believe that irrigators, originally attracted into agriculture by the provision of heavily subsidised infrastructure, should now be expected to pay commercial returns on assets that would not have been put in place if subjected to commercial scrutiny.²¹

The Tribunal decided to draw a 'line-in-the-sand' and determine that all water assets put in place prior to 1 July 1997 should not be included in the asset base for pricing purposes. This means that users will not be charged depreciation or a rate of return on pre 1997 expenditure.

However the Tribunal did state and reiterates its view that all new expenditure, including renewal and compliance expenditure, post 1997 that is attributed to users will attract commercial rates of return.²²

²⁰ IPART, *Bulk Water Prices - An Interim Report*, October 1996, pp 55-56.

²¹ *Ibid*, p 57 (Recommendation 5.4).

²² *Ibid*, p 57 (Recommendation 5.5).

New capital expenditure

There are two main methods through which DLWC can undertake new investment.

1. Pay for the work out of their own funds and charge a rate of return and depreciation on that work once the work has been undertaken.
2. Pay for the work through an annuity charged to users that has the discount rate set at DLWC's cost of capital. In this case the users will pay for the capital works by making the annuity payments.

The Tribunal considers that using renewals annuities is the most appropriate approach for long-lived, bulk water assets that need to be maintained, refurbished and/or replaced over time. This method involves estimating an organisation's future capital needs for renewal/refurbishment over a set time horizon, then calculating this as an annuity (or annual amount) that needs to be recovered from users or government to ensure that sufficient funds are available to meet these needs. Thus, the necessary revenue allocation or collection is 'smoothed' although expenditure of these funds may vary significantly from year to year. Short-lived assets that have a market value can be depreciated in the usual way.

Depreciation charges

DLWC included depreciation charges of \$1.556m (post ANTS) to cover the capital costs of assets for which the annuity approach is not appropriate.²³ Examples include depreciation on ground water monitoring bores and non-infrastructure assets like mobile plant and equipment. The Tribunal included this amount in its assessment of capital costs.

4.3.3 Return on assets

Return on Assets

In the Draft Report the Tribunal proposed a rate of return on post 1997 assets of 5 per cent. However, the Tribunal was persuaded by DLWC's submission²⁴ in response to the Draft Report and subsequent representations that the rate of return should better reflect the cost of capital of a stand alone bulk water business. The Tribunal is not convinced that this would be any higher than 7 per cent in real terms. The Tribunal has therefore decided to allow a 7 per cent real return. The Tribunal will review this rate at the next Determination in the light of new information and changed commercial rates.

No Separate Return on Assets beyond Annuity Charges

The Tribunal, in the Draft Report, proposed allowing a rate of return on assets funded through the renewals annuity in addition to the annuity payments. After receiving submissions from user groups in response to the Draft Report the Tribunal modelled both the annuity and direct investment with subsequent charges for return on asset and depreciation. The Tribunal is satisfied that they are the same in net present value terms and as such an additional return on assets above annuity payments would amount to double charging.

²³ These include assets that do not have to be replaced, have a ready market, are short lived, or provide surplus capacity. DLWC has many of these 'depreciable assets' within its Groundwater and Regulated river operations.

²⁴ DLWC submission, p 6.

Compliance Annuity

After reviewing the structure and function of renewals and compliance annuities the Tribunal has determined to treat all annuities in the same manner. That is all annuities will have a 7 per cent discount rate. The Tribunal has decided that where it needs to exercise its judgement in relation to the amount to be recovered from users it will do this through the allocation of costs between Government and users rather than through differential interest or discount rates.

4.3.4 State Water's renewals and compliance annuities

State Water submitted renewals and compliance annuities for regulated and unregulated rivers only. These annuities were based on the capital expenditure program outlined in its TAMP and calculated over a 30-year time horizon based on a discount factor of 7 per cent. Therefore, the adjustments the Tribunal has made to this capital expenditure program (discussed in section 4.3.1) need to be reflected in these annuities.

Figures 4.7 and 4.8 compare DLWC's submitted annuities with the Tribunal's revised annuities for each valley. The figures show that although the Tribunal has increased compliance capex significantly, because it has also 'postponed' substantial elements of this expenditure the net effect on the compliance annuity over the determination period is minimal. They also show that the annuities differ significantly across valleys. This is due to the different characteristics (and hence the required capital expenditures) of each valley.

Figure 4.7 Regulated renewals annuity (Post ANTS 2001/02 \$'000 pa) - DLWC submitted compared to Tribunal's revised

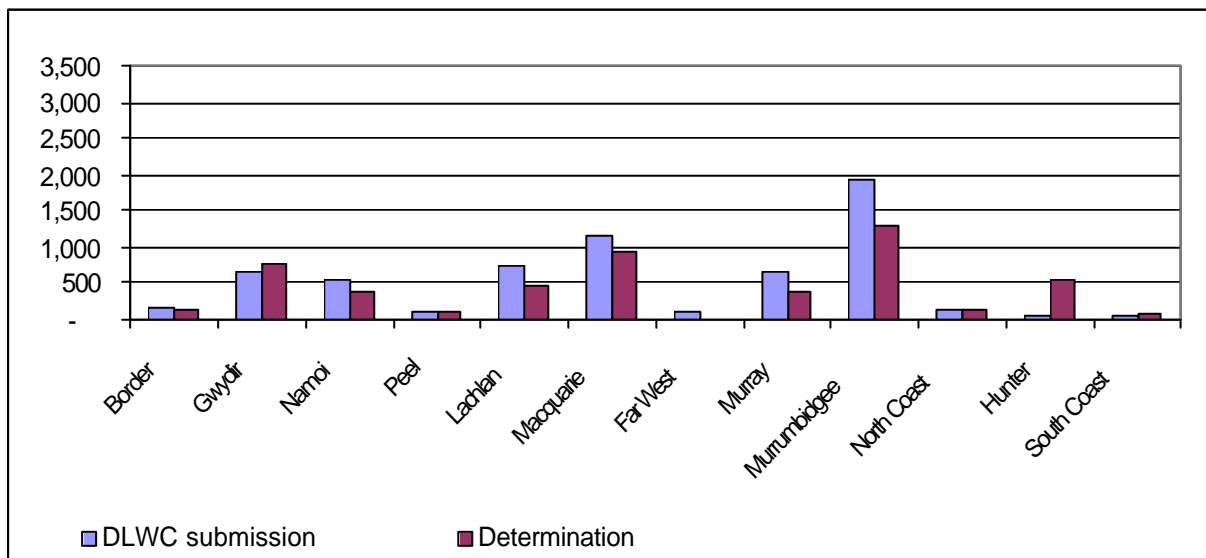
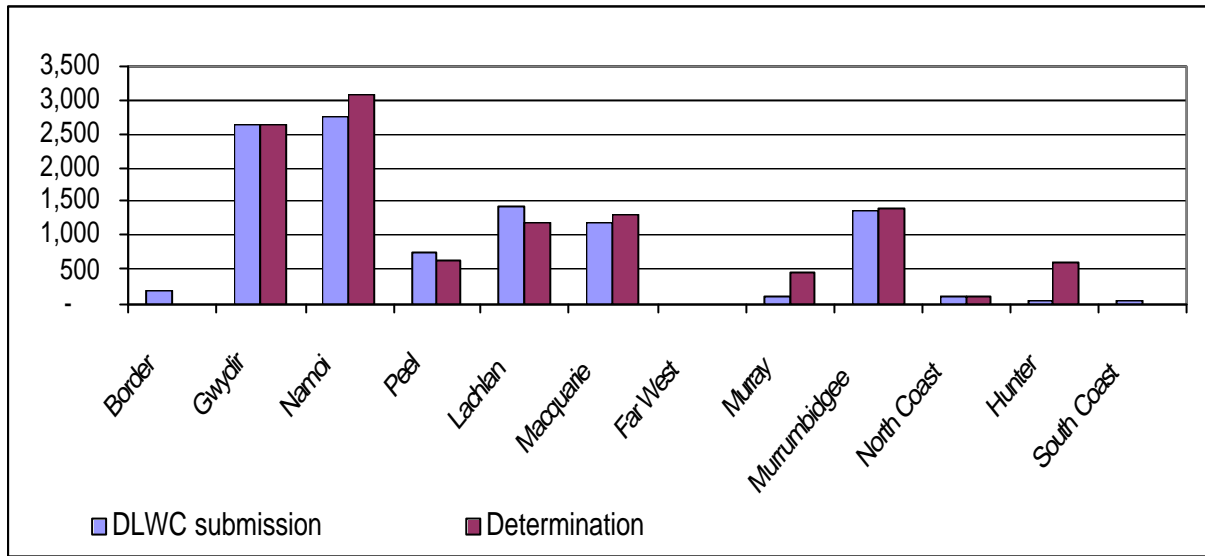


Figure 4.8 Regulated Compliance Annuity (Post ANTS 2001/02 \$'000 pa) - DLWC submitted compared to Tribunal's revised



5 COST ALLOCATION

The second key step in the Tribunal's price setting process was to determine what portion of the total efficient cost base should be allocated to the users of bulk water (and therefore recovered in bulk water charges) and what portion should be allocated to the Government (and therefore borne by the community). This issue arises because the costs incurred by DLWC in managing the rivers, dams, weirs and other parts of the NSW bulk water system are not related exclusively to bulk water delivery. For example, some of these costs are incurred to meet other needs, such as environmental protection, flood mitigation and navigation. In addition, some current and future costs relate to past practices and activities. The inclusion of these 'legacy' costs in today's prices may distort the signal to users of the current and future cost of providing bulk water services.

The Tribunal commissioned ACIL, as part of its review of DLWC's water resource management expenditure, to review the existing approach to cost allocation and recommend an appropriate way forward. It also asked ACIL to review the current basis for allocating NSW's share of MDBC water resource management costs.

Allocation between Government and users

The Tribunal has carefully considered ACIL's recommendations to revise the basis for total cost allocation by adopting an 'impactor pays' approach and excluding 'legacy costs' from current charges. It has also carefully considered the substantial comments received from key stakeholders about ACIL's suggested approach. In the light of persuasive argument about the classification of legacy costs, and the practical application of an impactor pays approach, it has decided to modify the allocation principles recommended by ACIL and reflected by the Tribunal in the Draft Report.

The impact of this review is on the allocation of 'compliance' capital costs incurred to ensure structures comply with occupational health and public safety standards and environmental standards. For this Determination, these costs will be allocated equally to the Government and to users. Prior to the next Determination the Tribunal will review, in consultation with stakeholders, the allocation of these and other compliance capital costs.

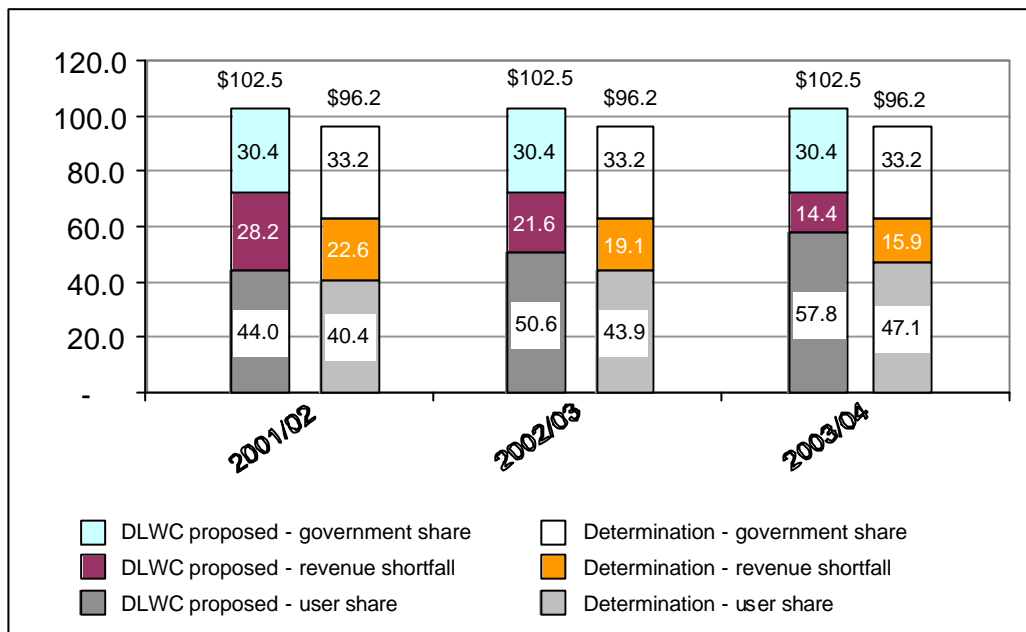
Allocation of MDBC costs

The Tribunal is concerned that neither of the methods for allocating MDBC water resource management costs suggested by ACIL or DLWC is sufficiently robust. DLWC proposed that the Murray be charged the bulk of these costs, as this is where the money is spent. ACIL proposed that the costs be charged to each valley in proportion to the amount of water extracted. ACIL used water extraction as a proxy for the impact of usage and the need to incur water resource management costs.

For the purposes of this Determination, the Tribunal has decided to allocate half the MDBC water resource management costs in the manner proposed by DLWC and half on the basis of relative long-term extractions from the Murray and Murrumbidgee only. This is a transitional approach in the absence of better information.

Figure 5.1 compares the DLWC proposed and Tribunal final cost allocations over the period of this Determination. It illustrates for each year the total cost base, the allocated Government share and the allocated user share. The gap or balance represents the shortfall which will be also be met by the Government until prices enable full recovery of the allocated user share.

Figure 5.1 Comparison of proposed total cost allocations to bulk water users (Post ANTS 2001/02 \$'000)



Notes:

1. Figures may not add up due to rounding.
2. The allocated user shares include miscellaneous income not shown in the equivalent figures in the Draft Report.

These aggregate total cost allocations between bulk water users and Government are allocated between the various valleys. Figure 5.2 shows the Tribunal's cost allocations and DLWC's proposed cost allocations on a valley by valley basis for 2001/02. Figure 5.3 shows the share of total costs allocated to users by the Tribunal on a valley basis compared with the user shares proposed by DLWC.

Figure 5.2 Valley by valley total cost allocations (Post ANTS 2001/02 \$'000)

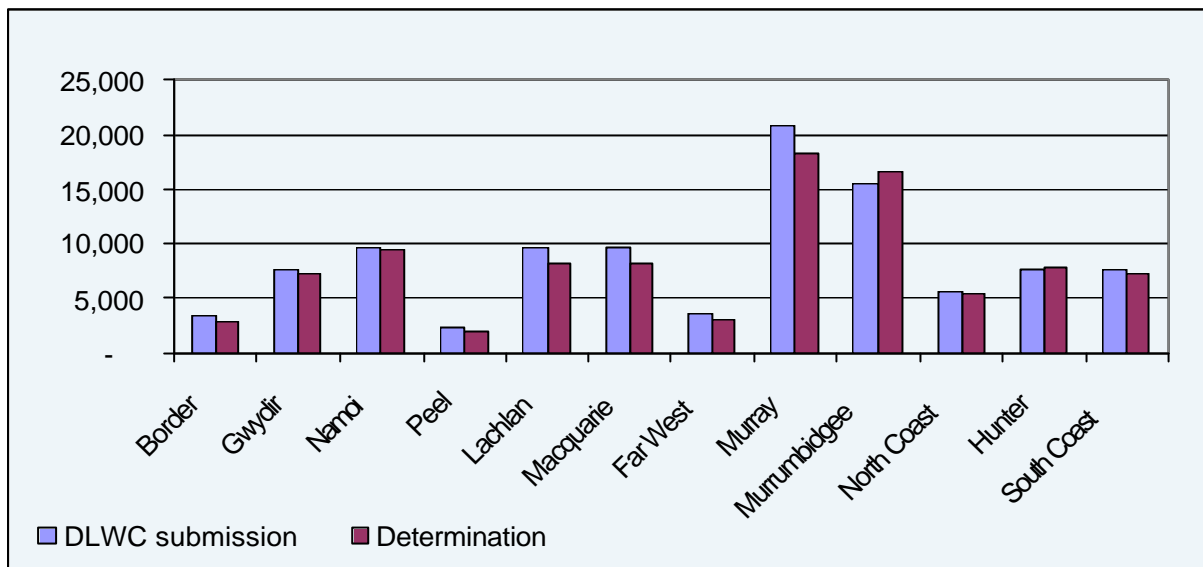
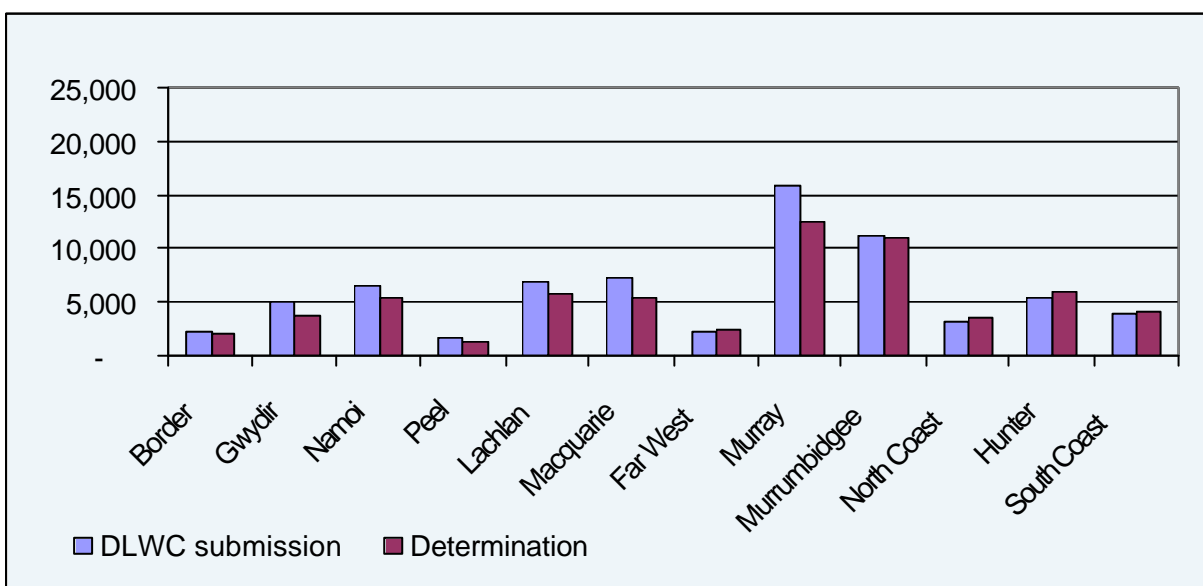


Figure 5.3 Valley by valley user share of total costs (Post ANTS 2001/02 \$'000)



5.1 Allocating total costs

In its 1998/99 report, the Tribunal nominated a set of ratios for allocating DLWC's costs between bulk water users and the Government. Individual ratios were allocated to 20 'products', which categorised DLWC's bulk water activities.²⁵ The ratios were essentially an outcome of a process which included significant negotiation with stakeholders including DLWC. Whilst not necessarily grounded in either approach, the allocations reflected a mix of 'impactor pays' and 'beneficiary pays' approaches. The cost allocations proposed by DLWC for this Determination were based on the same allocations.

²⁵ IPART, *Bulk Water Prices for 1998/99 and 99/00*, July 1998.

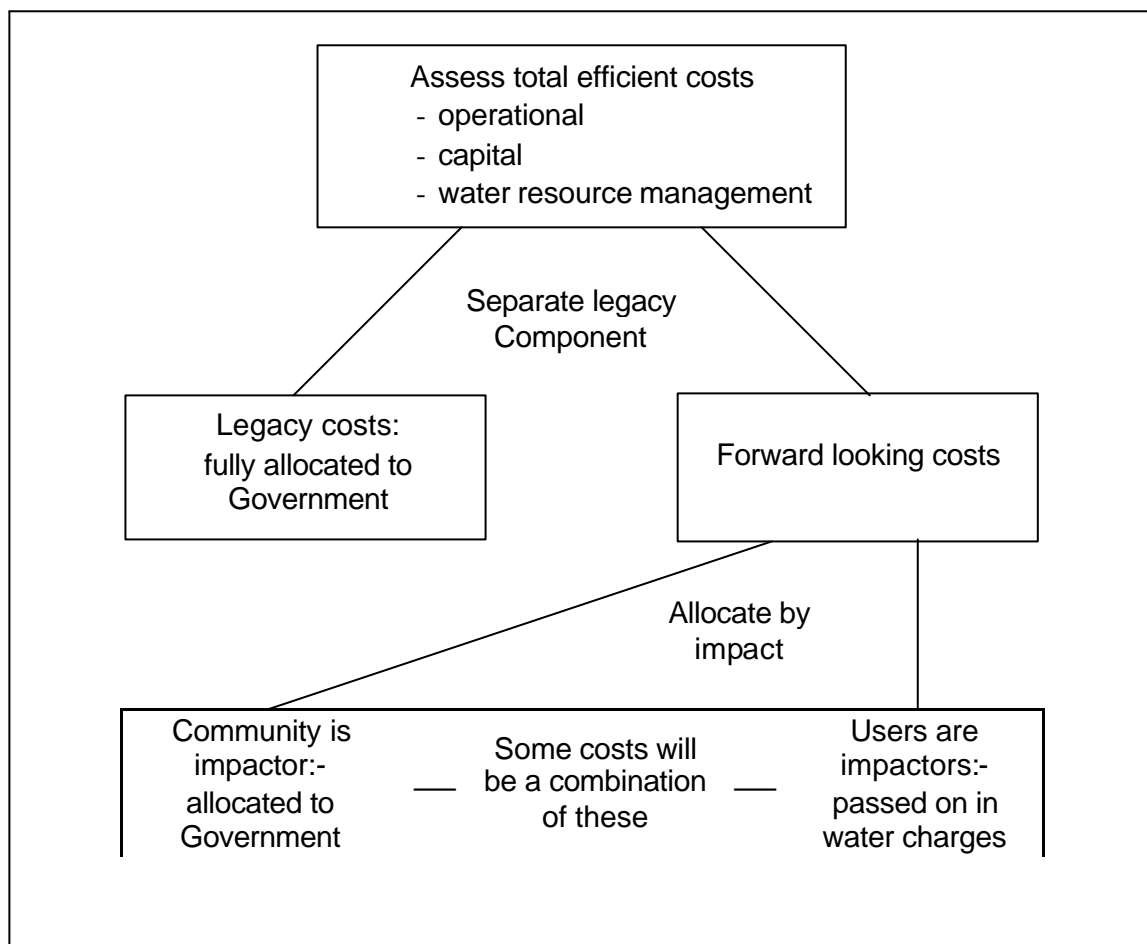
ACIL proposed a methodology for allocating costs between extractive users and the Government, with the latter effectively representing the broader community and the 'shareholder' of State Water. This approach involved the application of two key principles:

Legacy costs – principally current and future costs attributable to past activities. Current and future water users should not be required to meet the expenditure necessitated by the activities of past users. This approach is consistent with the Tribunal's prior decision to write infrastructure asset values down to zero at July 1997. ACIL recommended these costs be fully allocated to the Government.

Impactor pays – Non legacy costs were allocated to current stakeholders in proportion to the contribution their current and future actions have on the need to incur these expenditures.

The application of these principles to the allocation of costs is illustrated in Figure 5.4.

Figure 5.4 Cost allocation process



ACIL examined the expenditure related to approximately 100 DLWC 'sub products' seeking to apply these principles to determine allocation ratios for each. Invariably, judgement is involved in applying these principles. ACIL proposed ratios that resulted in a significant proportion being allocated fully to either extractive users or Government. This provides a clearer outcome from the cost allocation process, and may be perceived as providing clearer signals to the planning process. However, the Tribunal believes that situations where the costs of an activity are shared between groups are consistent with application of the impactor pays principle.

The Tribunal found value in the careful analysis undertaken by ACIL and adopted their proposed cost sharing ratios in the Draft Report. Most of these proposed ratios have been well accepted by stakeholders. The exception is capital costs to achieve compliance with environmental and other regulatory requirements. In particular, it has been expressed to the Tribunal in submissions and discussions that it is unreasonable for users to pay nothing towards the costs of upgrades to meet future occupational health and safety standards and environmental impact mitigation costs. The Tribunal sympathises with these views. Additionally, submissions made in response to the Draft Report have indicated that there remains some uncertainty about the future application of the legacy cost and impactor pays concepts. For these reasons the Tribunal has reviewed the application of these principles.

5.1.1 Legacy costs

In discussing legacy costs, ACIL referred to current stakeholders inheriting a set of contingent liabilities that need to be addressed. These included, for example, infrastructure repair and maintenance costs that are higher than they would have been if pre 1997 maintenance had been optimised, and costs associated with ongoing salinity intrusions attributable to past extractive uses.

Additionally, ACIL noted that there are other costs resulting from ongoing changes to community standards such as dam safety and occupational health and safety that might be interpreted as legacy costs. This implies that any enhancement of a standard, past or future gives rise to a legacy. Conversely ACIL also included as a component of forward looking costs those costs made necessary by the availability of new information or risk assessments that require changes to current practice.

Having considered the issue further, the Tribunal has concluded that it is more appropriate to draw a line in the sand at a particular date and to consider only expenditure required to meet standards established at or before that date as forming part of the legacy. Consistent with its views on valuing physical assets, the Tribunal has decided to draw the line in the sand at July 1997. Expenditure required to meet standards established after that time will therefore not form part of the legacy. The Tribunal sees limited value in attempting to distinguish between changes to community standards and the revision of information. In reality, changes to community standards will reflect new information and risk assessments.

Therefore the Tribunal will classify as legacy costs those current and future costs attributable to past (pre 1997) activities and/or the cost of restoring natural and artificial infrastructure to prevailing 1997 community standards.

In practice the allocation of costs where there is likely to be a legacy component, such as compliance costs (discussed at 5.1.4), will be a matter of judgement for the Tribunal. It does not anticipate that ascertaining the relevant 1997 standards with precision sufficient for this task will present particular problems.

5.1.2 Impactor pays

Impactor versus beneficiary

'Impactor pays' and 'beneficiary pays'²⁶ are both approaches for addressing the problem of how to allocate costs that arise within a system — such as the NSW bulk water system. These costs could arise directly, in order to deliver particular services. They could also arise indirectly, through investments designed to reduce the damage resulting from the service delivery.

Impactor is defined as any individual or group of individuals whose activities *generate the costs* or a justifiable *need to incur the costs* that are to be allocated. **The impactor pays principle** seeks to allocate costs to different individuals or groups *in proportion to the contribution* that each individual or group *makes to creating the costs or the need to incur the costs*.

Beneficiary is defined as any individual or group of individuals who *derive benefits from the costs* that are to be allocated. These benefits may result from their own use of the services involved (in which case the beneficiary is also the impactor) or be in the form of reduced damage to their interests due to the usage patterns of others. In the latter case the beneficiary is sometimes referred to as the victim. **The beneficiary pays principle** seeks to allocate costs to different individuals or groups *in proportion to the benefits* that each individual or group stands to derive from the costs being incurred.

Note that the allocation principles do not require that the costs be met solely by the direct impactor or beneficiary unless these are final consumers. The costs may well be passed on to end users in the form of higher prices for goods or services derived from the use of the resource system.

Whilst the Tribunal considers the 'impactor pays' principle is appropriate for bulk water cost allocation, it notes that there does not appear to be a universally accepted understanding about its application. The Tribunal has attempted to allocate costs between extractive users and the broader community, represented by the Government, essentially in proportion to the contribution each group makes to creating the costs or the need to incur the costs. In so doing the Tribunal considers that the impactors causing the need for expenditure variously include both:

- the community, in changing the standards which natural and built infrastructure is required to meet and in requiring increased levels of environmental resource and asset management; and
- bulk water users, by creating the need for system management expenditure, environmental mitigation and, effectively, by requiring ongoing bulk water delivery from assets which might otherwise be decommissioned rather than upgraded to meet contemporary standards.

²⁶ The two principles were recently addressed in some detail by the Productivity Commission in their report *Cost Sharing for Biodiversity Conservation: A Conceptual Framework*, accessible at the Productivity Commission website (<http://www.pc.gov.au/research/staffres/csbcc/csbcc.pdf>).

The Tribunal stresses that the adoption of this approach to cost allocation does not remove the significant level of judgement necessarily inherent in much of the cost allocation process, particularly as the allocation splits occur across expenditure categories aggregated from a wide range of specific cost items.

5.1.3 Application

The legacy and impactor pays principles were applied to more than 100 DLWC ‘sub-product’ expenditure categories to allocate costs between extractive users and the Government. These sub-product allocations were then used to allocate costs at a valley or DLWC region level.

Table 5.1 highlights the application of these principles to a range of cost categories.

Table 5.1 Examples of application of legacy and impactor pays principles

Expenditure area – examples	Legacy Government Component	Forward User Component	Forward Government Component
Asset rehabilitation necessitated by less than optimal past maintenance regimes	High	Low	Low
New major assets to support extractive use, incorporating flood/fish passage design elements purely to mitigate impacts of the asset	None	All	None
Activities to maintain functionality of assets	None	High	Low
Surface water quality data collection and management	None	Medium	Medium
Water health data collection and management	None	None	All
Operation of regulated river systems	None	All	None
Occupational health and safety capital upgrades	Low	High	Low
Interception of salt attributable to past irrigation practice or non-irrigation causes	All	None	None

5.1.4 Compliance costs

The areas of expenditure allocation which generated the highest level of stakeholder concern were compliance capital costs. These include capital costs associated with ensuring structures such as dams and weirs comply with relevant dam safety standards, meet relevant public safety and occupational health and safety standards and comply with contemporary standards to mitigate the environmental impacts of stream interruption.

Particular concerns have been raised with the Tribunal about capital costs for structures to mitigate environmental impacts. These include fish ladders to enable native fish passage past structures such as weirs, multi level water offtakes in dams to reduce cold water pollution and release valves in dams sufficient to enable high volume environmental flows.

In the Tribunal's view the need to incur this expenditure arises because of the community's expectation that the needs of the environment will be met at the same time as the needs of extractive users. There is a significant legacy component to some of these costs with evidence that fitting of fish ladders has occurred for many years although some constructed in earlier years are now thought to be inadequate. Ongoing extraction and changing community values both constitute impacts driving these areas of expenditure.

Having reviewed the arguments put to it, the Tribunal has concluded that environmental compliance capital expenditure has both legacy and non-legacy components and is attributable to both extractive users and the general community (on behalf of the environment).

The Tribunal has similarly reviewed the allocation of compliance capital costs in the areas of occupational health and safety and public safety and has similarly concluded that these represent a mix of legacy and non legacy costs which are attributable to both extractive users and the community.

The allocation adopted by the Tribunal for these particular costs is less polarised than that proposed by ACIL. However, the Tribunal believes this is likely to result in allocations that appropriately balance the competing interests of different stakeholders.

The Tribunal has therefore made the following changes to sub-product cost sharing ratios proposed by ACIL and used in the Draft Report.

Table 5.2 Changes to sub-product allocations

Sub Product Code	Sub Product Long Name	ACIL Proposed Allocation		Revised Allocation		Comment
		User - Government	Government - User	User - Government	Government - User	
PC330	Dam Compliance, Environment	33%	67%	50%	50%	A significant legacy component, but need for expenditure arises from continuing presence of structures. Removal would be an alternative option in some cases but for ongoing extraction requirement. Tribunal therefore considers equal share appropriate and consistent with the impactor pays principle.
PC331	Dam Compliance, OHS & Public Safety	0%	100%	50%	50%	OHS costs are borne by businesses generally rather than Government. Includes some public safety costs not necessarily attributable to extractive users and some legacy component, Tribunal considers it appropriate to pass through to users a significant share.
PC332	Regulated River Compliance, Environment	33%	67%	50%	50%	As with other environmental compliance sub-products, the Tribunal considers an equal sharing appropriate.
PC333	Regulated River Compliance, OHS and Public Safety	0%	100%	50%	50%	As with other OHS and public safety costs the Tribunal considers an equal sharing appropriate.
PC334	Unregulated River Compliance, OHS and Public Safety	0%	100%	50%	50%	As with other OHS and public safety costs the Tribunal considers an equal sharing appropriate.
PC335	Unregulated River Compliance, Environment	33%	67%	50%	50%	As with other environmental compliance sub-products, the Tribunal considers an equal sharing appropriate.

These changes increase the costs allocated to users by \$1.8m per annum. The full set of sub-product allocation ratios proposed in the ACIL report is available in full on the Tribunal's website.²⁷

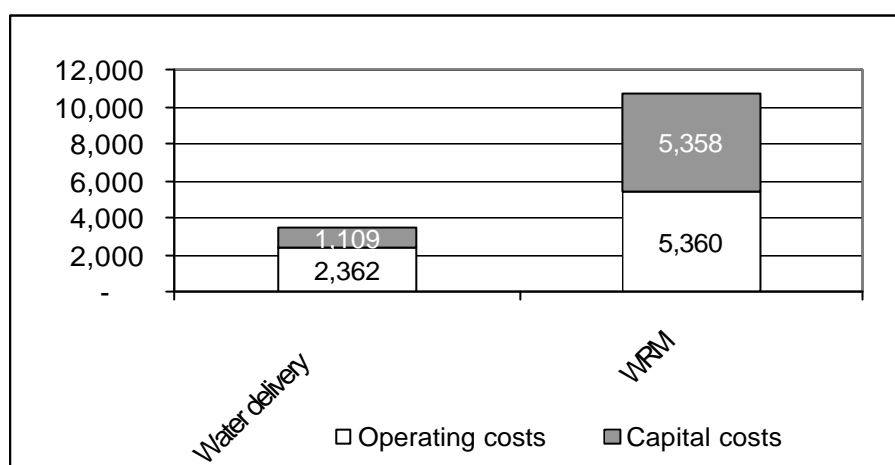
The Tribunal believes the cost allocations used in this report are a considerable advance over those used in previous Determinations. Nevertheless, they may benefit from further development. In particular the Tribunal would welcome development of a common view from stakeholder groups about the most appropriate basis for allocating these costs.

²⁷ www.ipart.nsw.gov.au/current.htm#bulk01

5.2 Allocating MDBC costs

MBDC costs comprise both water resource management (WRM) costs and the costs associated with water delivery. Both of these components, in turn, consist of operating and capital costs. As shown in Figure 5.4, according to the Tribunal's revised cost base (discussed in Chapter 4), water delivery costs comprise \$3.5m of the total cost of \$14.2m, and WRM costs comprise the remaining \$10.7m. Operating costs comprise 68 per cent of water delivery costs and 50 per cent of WRM costs.

Figure 5.4 The WRM and delivery components of MDBC costs (post ANTS 2001/02 \$'000)



In its submission, DLWC proposed allocating some 93 per cent of the water resource management costs to the Murray Valley, 5 per cent to the Murrumbidgee Valley and the remainder to the other inland valleys. ACIL also reviewed this issue, and commented that it believes the most appropriate approach would be to allocate MDBC costs according to the salinity impact of each inland valley in NSW (using EC salinity credits as a measure) because water resource management undertaken by the MDBC principally involve salinity mitigation. However, since the information required to apply this approach is not currently available, it recommended an alternative approach whereby these costs are allocated across all the inland valleys based on DLWC's estimates of long-term water extraction in each valley.

The Tribunal has considered the DLWC and revised ACIL approaches to allocating MDBC WRM costs. As Figure 5.5 shows, compared to the DLWC approach, the ACIL 'long term extractions' approach would result in a lower amount being allocated to the Murray Valley and a higher amount allocated to the Murrumbidgee Valley. It would also slightly increase the amounts allocated to the other inland valleys.

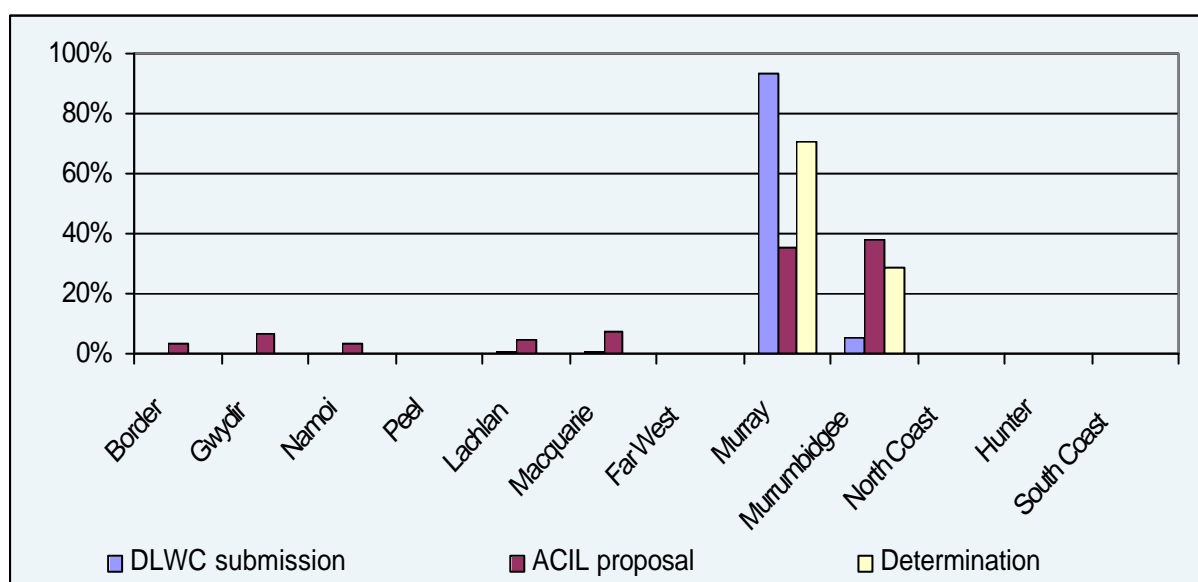
The Tribunal is concerned that users in the Murray should not pay for more than their fair share of the MDBC WRM costs. It therefore favours the allocation of these MDBC costs to valleys other than the Murray, on an impactor pays basis. While it acknowledges the merits of ACIL's suggested approach, it is not convinced, at this stage, that this method is sufficiently robust to be adopted in full.

As a way forward, for the purpose of this Determination, the Tribunal has decided that:

- all the water delivery cost (\$3.5m) is to be allocated to the Murray Valley
- 50 per cent of MDBC’s WRM costs are to be allocated in the manner proposed by DLWC, (hence an immaterial amount would be allocated to some inland valleys)
- the remaining 50 per cent of WRM costs are to be allocated on the basis of long-term extractions to the Murrumbidgee and Murray only, along the lines of ACIL’s suggestion.

Once these costs are allocated to the valleys, the user cost shares are applied to determine the portion that should be recovered from users and the Government. Figure 5.5 presents the percentage allocation of MDBC water resource management costs under DLWC’s approach, ACIL’s approach and the Tribunal’s decision.

Figure 5.5 Percentage of MDBC WRM costs allocated to valleys under the DLWC approach, the ACIL approach and the Tribunal’s proposed approach



Note:

1. Allocations to the other inland valleys under the Tribunal’s decision are between 0.1 per cent and 0.2 per cent.

In the course of this review, the Tribunal and its consultants have gathered much information in relation to the nature of the MDBC’s costs and how NSW’s share of these costs are allocated to users. It greatly appreciates the assistance of the MDBC in this regard. In addition, given the new information now available, the Tribunal has decided to require DLWC to develop a robust and transparent method of allocating MDBC costs to users for the next Determination.

6 DETERMINING A REASONABLE TRANSITION PATH TO ACHIEVE FULL COST RECOVERY

The third step in the Tribunal's price setting process was to calculate the price increases required to achieve full cost recovery by 2003/04, and determine a transition path that will move prices significantly closer to this level without subjecting bulk water users to unreasonably steep price rises. This included considering the impact of water charges on irrigation customers, and the concerns of some stakeholders that increased water charges could affect the viability of certain irrigation businesses, and the prosperity of regions that depend on irrigated agriculture.

The Tribunal acknowledges that significant increases in bulk water prices will put pressure on profit margins throughout the irrigation sector. It also acknowledges that some irrigators are currently experiencing financial difficulties, and price increases will exacerbate these problems. However, it believes that pricing is not the best instrument to achieve social goals. Nevertheless, it believes it is in the best interests of all parties, including the wider community, to phase in tariff increases over a reasonable period to allow users to adjust to the higher prices.

The Tribunal has therefore capped price increases on regulated rivers at 15 per cent per year over the period 2001/01 to 2003/04, and prices on unregulated rivers and for ground water at 20 per cent per year over this period (with an adjustment for the CPI also allowed in 2002/03 and 2003/04).

6.1 What proportion of costs do current prices recover?

Current tariffs recover varying proportions of the costs allocated to users. As Table 6.1 shows, the proportions vary from as low as 7 per cent in the North Coast to 116 per cent on regulated rivers in the Macquarie Valley.²⁸ This means that in some valleys, only small (if any) increases to regulated water charges are required to achieve (or maintain) full cost recovery. In other valleys, however, very large increases in both regulated and unregulated water charges and ground water charges would be required to achieve full cost recovery by 2003/04.

²⁸ Over-recovery in the Macquarie Valley in 2000/01 is the result of a downward revision of both operating and capital costs compared to the costs used to determine existing tariffs.

Table 6.1 Proportion of allocated costs recovered from tariffs in 2000/01

	Cost recovery in 2000/01		
	Regulated Water	Unregulated Water	Ground Water
Border	83%	26%	
Gwydir	87%	53%	Barwon region
Namoi	81%	26%	22%
Peel	44%	Included in Namoi	-----
Lachlan	83%	17%	Central West
Macquarie	116%	43%	21%
Far West	No regulated rivers	20%	----- 21%
Murray	82%	20%	34%
Murrumbidgee	91%	43%	17%
North Coast	7%	13%	16%
Hunter	36%	19%	15%
South Coast	24%	13%	6%
Total	81%	19%	20%

Notes:

1. Tariffs for 2000/01 were determined with reference to DLWC's previous cost estimates. These tariffs more than recover the current estimate of costs in the Macquarie Valley due to the downward revision of these costs.
2. The levels of cost recovery differ from those in the Draft Report due to the changes in the cost base discussed in Chapters 4 and 5.

6.2 How would increasing prices to full cost recovery level affect farm incomes?

Much of the analysis on the impact of water prices on farm incomes previously presented to the Tribunal has focussed on water usage charges as a percentage of variable farm costs. The conclusion has generally been drawn that water is too small a proportion of (variable) costs to be cause for concern. DLWC argued along these lines in its submission to the Tribunal for this Determination.²⁹

However, the Tribunal believes this approach can be misleading, as entitlement charges (a fixed cost) are often the major component of a farmer's water bill. The significance of these fixed entitlement charges is reflected in the fact that DLWC expects to derive 68 per cent of its total revenue from regulated water charges in 2000/01 from entitlement charges. The proportions range significantly between the valleys, but are never lower than 50 per cent. This suggests that fixed costs should be included in any analysis of the impact of water prices on farm profitability.

²⁹ See Chapter 6 (Impact Assessment) and Appendix 7 of DLWC's 2001 submission.

6.2.1 Impacts on farmers using regulated water

The Tribunal had limited information with which to assess the likely impact on irrigation farmers using regulated water. However, these farmers are likely to be the most severely affected by the large price increases required to meet cost recovery levels in some valleys. This is because the costs related to regulated water are significantly higher than those for unregulated water and ground water in most valleys.

The best information comes from two studies recently conducted by NSW Agriculture on irrigation farming in the Peel and Lachlan Valleys.³⁰ These studies divided each of the valleys into a number of geographical zones, and constructed a 'representative' commercial farm for each of the zones. They then investigated the impact on farm profitability of the price increases needed to achieve full cost recovery by 2003/04. The main findings of these studies were as follows (see Appendix 9):

- In the Peel Valley, prices would need to increase by almost 200 per cent to achieve DLWC's initial estimates of full cost recovery levels. Price increases of this size would reduce net farm incomes by more than 10 per cent on all the farms, and by more than 20 per cent on two of the four 'representative' farms.³¹
- In the Lachlan Valley, prices would need to increase by some 60 per cent in order to achieve DLWC's initial estimates of full cost recovery levels. Price increases of this size would reduce net farm incomes by between 4 per cent and 8 per cent on five of the six 'representative' farms, and 19 per cent on the remaining farm.

In both studies, a farm's level of profitability was the main indicator of its ability to absorb the required price increases. There may be a number of less profitable farmers in the Peel and the Lachlan Valleys who would find it difficult to absorb large and ongoing price increases. It is likely that this would also be true in other valleys, at least to some extent, although no similar studies have been done.

6.2.2 Impacts on farmers using unregulated water and ground water

To the Tribunal's knowledge, no information is available on the impact on farm incomes of increases in the price of unregulated water and ground water. However, water from these sources is significantly cheaper to provide than regulated water (see Chapter 7). Therefore the impact of price increases required to meet full cost recovery on total farm costs, and thus on profitability, is likely to be smaller than is the case for regulated water. Nevertheless, it is likely that some irrigators at least would face significant problems in adjusting to these price increases if they occurred over the next determination period.

³⁰ *Economic Assessment of Water Charges in the Peel Valley. Report to the Department of Land and Water Conservation*, Jason Crean, Fiona Scott and Anthea Carter, NSW Agriculture, July 2000, and *Economic Assessment of Water Charges in the Lachlan Valley. Report to the Department of Land and Water Conservation*, Rohan Jayasuriya, Jason Crean and Rendle Hannah, NSW Agriculture, February 2001.

³¹ Neither DLWC nor the Tribunal have proposed such large price increases. Both parties accept that costs in the Peel Valley will not be fully recovered by 2003/04.

6.3 What is a reasonable transition path?

Given the NSW Government's commitment to move bulk water prices towards full cost recovery - and to achieve this level by 2001/02 wherever practical - the Tribunal believes its primary task in setting the transition path is to balance the interests of the extractors and DLWC, while taking into account possible signalling effects. It believes that pricing is not usually the best instrument to achieve social goals, such as assisting struggling farmers. Nevertheless, it did take the impacts discussed above into account in considering the maximum rate of increase in prices and the price structure for this Determination.

6.3.1 The rate of increase in prices

In its submission, DLWC proposed that tariff increases be capped at 20 per cent per year in real terms, because of the potential impacts on customers of increases to full cost recovery over a three-year period. After considering the interests of all parties, the Tribunal has determined that prices on regulated rivers should be permitted to increase by no more than 15 per cent per year, plus an adjustment for inflation in 2002/03 and 2003/04. Prices on unregulated rivers and for ground water will be permitted to increase by 20 per cent per year, plus an adjustment for inflation in 2002/03 and 2003/04. The higher increases allowed for unregulated water and ground water charges are justified given their currently low level and low levels of cost recovery relative to those for regulated water. It is noted that the users on the majority of regulated rivers, including the largest river systems, will face real increases of 8.5 per cent per year or less.

6.3.2 The structure of prices

The structure of water prices affects the level and variability of the costs incurred by extractors and the revenue raised by DLWC. Price structures also serve a signalling function to extractors, which can affect both the volumes of water they use and, where a market exists, the volumes they trade.

The Tribunal recognises that the current balance of charges between fixed entitlement charges and volume-based usage charges in the two-part tariff for regulated water may not be ideal. However, for reasons discussed in Chapter 7, it has chosen not to change the tariff structure. DLWC is progressively introducing a two-part tariff for unregulated water (discussed in Chapter 7). The Tribunal believes that this structure will provide better signals to users and DLWC.

7 MAXIMUM PRICES

Based on the outcomes of the process outlined in Chapters 4 to 6, the Tribunal has set a maximum price for each bulk water charge for each year of the determination period. The prices are designed to move each charge towards full cost recovery. Most prices include an increase in each year, but the size of the increase varies. This is because the proportion of user-allocated costs that current prices recover varies widely – from more than 100 per cent for regulated water in the Macquarie Valley to only 7 per cent for regulated water in the North Coast. However, the Tribunal has limited the rate by which prices can increase to 15 per cent per year (in real terms) for tariffs for bulk water on regulated rivers and 20 per cent per year (in real terms) for bulk water on unregulated rivers and from groundwater sources.

This chapter discusses the maximum prices and changes to tariff structure for bulk water on regulated rivers, unregulated rivers and from groundwater sources, and the proposed changes to large customer charges and licence fees. The Tribunal's rationale for capping increases to bulk water tariffs at 15 and 20 per cent per year is discussed in Chapter 6.

7.1 Regulated river tariffs

The Tribunal has set a maximum price for each bulk water charge on regulated rivers for each year of the determination period. These prices include an increase of up to 15 per cent in 2001/02, and a further increase of up to 15 per cent plus an adjustment of inflation in both 2002/03 and 2003/04. As Table 7.1 shows, in the majority of valleys prices will increase by less than 15 per cent.

Table 7.1 Bulk water charges in 2001/02 and maximum increases on regulated rivers

Region/river valley	Charges in 2001/02			Annual increase before CPI adjustment
	Fixed charge (\$/ML of entitlement)		Usage charge (\$/ML)	
	High security	General security		
Border	4.87	3.26	3.79	7.5%
Gwydir	4.52	3.00	3.50	6.0%
Namoi	8.17	5.45	6.52	8.5%
Peel	8.66	5.02	6.91	15.0% & 0% ¹
Lachlan	5.62	3.74	4.29	8.0%
Macquarie	4.37	3.36	4.54	0% & -3% ²
Far West	No regulated rivers			
Murray	4.51	4.09	1.10	8.0%
Murrumbidgee	3.54	3.36	0.88	4.5%
North Coast	7.88	6.06	4.04	15.0%
Hunter	6.16	4.40	4.38	15.0%
South Coast	7.88	6.06	4.04	15.0%

Notes:

1. The general security entitlement charge in the Peel Valley remains unchanged in 2001/02, and increases by CPI in 2002/03 and 2003/04. The remaining charges increase by 15 per cent per annum plus CPI adjustments (see Section 7.1.1).
2. Prices in the Macquarie Valley will remain unchanged in 2001/02 in nominal terms, then decrease by 3 per cent in real terms.

All tariffs on regulated rivers have a two-part structure - comprising a volume-based entitlement (fixed) charge and a usage charge. Entitlement charges vary according to whether the customer's entitlement is classified as high or low security, with high security entitlements attracting a higher charge. For this Determination the Tribunal has not changed the difference between high and low security entitlement charge, with the exception of charges in the Peel Valley (see section 7.1.1). In addition, it has not changed the balance between entitlement and usage charges (all bulk water charges in a valley are to be increased by the same rate). Finally, it has not changed the discounts applied to the entitlement charges of wholesale customers.

Table 7.2 compares the current prices with the maximum prices allowed under this Determination in 2003/04 (the latter expressed in 2001/02 dollar values).

Table 7.2 Bulk water charges on regulated rivers in 2000/01 and 2003/04 (\$/ML)

	2000/01 tariffs			2003/04 tariffs		
	(\$/ML in 2000/01 dollars)			(\$/ML in 2001/02 dollars)		
	HS entitlement	LS entitlement	Usage charge	HS entitlement	LS entitlement	Usage charge
Border	4.53	3.03	3.53	5.63	3.76	4.39
Gwydir	4.26	2.83	3.30	5.07	3.37	3.93
Namoi	7.53	5.02	6.01	9.62	6.41	7.68
Peel	7.53	5.02	6.01	11.45	5.02	9.14
Lachlan	5.20	3.46	3.97	6.55	4.36	5.00
Macquarie	4.37	3.36	4.54	4.12	3.17	4.28
Far West	No regulated rivers					
Murray	4.18	3.79	1.02	5.27	4.77	1.28
Murrumbidgee	3.39	3.22	0.84	3.87	3.67	0.96
North Coast	6.85	5.27	3.51	10.42	8.02	5.34
Hunter	5.36	3.83	3.81	8.15	5.82	5.79
South Coast	6.85	5.27	3.51	10.42	8.02	5.34

High flow licences permit access to water only when river flows reach a certain height. The Tribunal proposes to continue the current charging method for high flow water with users billed the relevant valley specific, regulated water usage charge for the extractions of high flow water that they make.

7.1.1 Difference between high and low security entitlement charges

DLWC levies a fixed annual charge for the entitlement to extract each megalitre of water under a licence. These charges are categorised as being high and low security entitlements depending on the level of water security, or likelihood of the licence holder being able to extract the entitlement in a particular year. Owners of high security entitlements are usually able to extract the total volume of the entitlement in all but the severest drought, while owners of low security entitlements are able to extract a specified proportion of the entitlement volume each year, which varies according to water availability. The costs involved in providing high security entitlements are higher than those for low security entitlements, because greater storage capacity is required.

The current low and high security entitlement charges do not necessarily reflect the different costs involved. For example, in some valleys it appears to be cheaper (per megalitre of water received) for an extractor to hold a high security licence than a low security licence where the amount of water extracted by a user is usually less than the full entitlement. DLWC noted in its submission that some of State Water's customer service committees are concerned about this issue. The coastal valleys in particular have asked the Tribunal to address it. Peel irrigator representatives believe the relative price of high entitlements should be increased, to share the fixed costs more equitably between low and high security entitlement holders.

The Tribunal has carefully considered these and other representations and has undertaken some preliminary analysis comparing the 'effective price' for high and low security entitlements.³² This analysis is presented in Appendix 7.

The Tribunal's analysis shows there is substantial variation between valleys in the ratios between the effective high security and low security prices. It is not clear that these differences have any basis in costs. The Tribunal believes this issue should be addressed prior to the next Determination. It did not have sufficient information available to set cost reflective prices at this stage. It notes that water sharing rules currently being developed for each valley should be in place before the next Determination and that these will assist in development of prices more reflective of relative levels of water security.

The very small allocations made to low security users in the Peel Valley result in a clear disparity between the effective prices paid by low and high security users in that valley. This disparity is of a magnitude significantly greater than in any other valley. The Tribunal is of the view that the current disparity in the Peel Valley is so great that some correction is required for this Determination. Therefore, whilst usage charges and high security entitlement charges in the Peel Valley will rise by 15 per cent (real) for each of the next three years, the low security entitlement charge will remain at the 2000/01 level in real terms for the period of this Determination.

³² The effective price is calculated by multiplying the entitlement volume by the per megalitre entitlement charge to produce a total entitlement charge and then dividing this by the long term average annual volume a user is allowed to extract.

7.1.2 The balance between entitlement and usage charges

There is currently a wide variation in the balance between entitlement and usage charges in different valleys. For example, the usage charge, expressed as a percentage of the low security entitlement charge, varies from 26 per cent in the Murrumbidgee Valley to 135 per cent in the Macquarie Valley. These variations do not reflect the different costs involved, but rather are a result of the Tribunal's decision to moderate the impact on individual customers and DLWC's revenue when the current two-part tariff structure was introduced in July 1997.

The Tribunal is aware that the current balance may be problematic in individual valleys. However, as it does not have a sufficiently sound basis on which to propose an alternative structure and DLWC did not propose any significant changes to the current balance,³³ it has not changed the balance for this Determination. However, it encourages DLWC to investigate the matter further before the next Determination. Such an investigation would need to include an assessment of the impact of changes on different customers and the effectiveness of consumption price signalling.

7.1.3 Wholesale customer discounts

Wholesale irrigation customers currently receive discounts on their entitlement charges. DLWC believes these are not justified on cost grounds, but because the wholesalers provide information that assists DLWC in performing its functions, DLWC has proposed that the discounts be retained at current levels. The Tribunal accepts this proposal, primarily because the information required to fully evaluate these discounts is not available. However, the Tribunal intends to review wholesale customer discounts in the next Determination, and encourages DLWC to investigate them further in the intervening period.

In addition, the Tribunal has modified the way the discounts are calculated and applied:

- in the 2000/01 Determination, the discount was calculated in such a way that the discounted low security entitlement price was applied to both high and low security entitlement volumes
- the discounts have been recalculated in such a way that the discount is now applied to both the high and the low security entitlement volume at the applicable high and low security entitlement prices.

This modification will not have an impact on wholesale customers' bills. Table 7.3 shows the proposed discounts applicable to wholesale customers during this Determination period.

³³ In DLWC's submission, usage charges increase slightly relative to entitlement charges in the Border region, and decrease slightly in the Lachlan, Macquarie and Murray valleys.

Table 7.3 Wholesale customer discounts on high and low security entitlements

Licence holder	Discount applied to the price of high and low security entitlements %
Murray Irrigation	40
Western Murray Irrigation	27
West Corurgan	35
Moira Irrigation Scheme	30
Eagle Creek Scheme	25
Murrumbidgee Irrigation	29
Coleambally Irrigation	32
Jemalong Irrigation	27

7.2 Unregulated river tariffs

The Tribunal has increased each bulk water charge on unregulated rivers by a maximum of 20 per cent in 2001/02, and by a maximum of 20 per cent plus CPI in both 2002/03 and 2003/04. The exception is the \$100 fixed charge per licence paid by those town water supply agencies and industrial customers who have not yet been allocated an entitlement volume (explained in section 7.2.2). This charge will remain unchanged in 2001/02, and increase by the CPI in 2002/03 and 2003/04.

DLWC is in the process of introducing a two-part tariff that comprises a fixed entitlement charge and a volume-based usage charge. For irrigators, this involves two stages - converting current licences to volumetric licences and introducing the two-part tariff. Table 7.4 shows the proposed maximum prices for customers at Stage 1, and Table 7.5 shows the proposed maximum prices for customers at Stage 2. Town and industrial customers will be put on the two-part tariff once entitlement volumes have been negotiated. The remainder of this section explains the new licences and tariff structure, and the introduction process in more detail.

Table 7.4 Maximum Stage 1 Entitlement charges on unregulated rivers (\$/ML)

	2000/01 \$/ML (2000/01\$)	2001/02 \$/ML (2001/02 \$)	2002/03 \$/ML (2001/02 \$)	2003/04 \$/ML (2001/02 \$)
Border	1.86	2.23	2.68	3.21
Gwydir	1.86	2.23	2.68	3.21
Namoi	1.86	2.23	2.68	3.21
Peel	1.86	2.23	2.68	3.21
Lachlan	1.50	1.79	2.15	2.58
Macquarie	2.19	2.63	3.16	3.79
Far West	1.01	1.21	1.46	1.75
Murray	1.50	1.80	2.16	2.59
Murrumbidgee	2.63	3.16	3.79	4.55
North Coast	1.99	2.39	2.87	3.45
Hunter	1.30	1.55	1.87	2.24
South Coast	1.46	1.75	2.11	2.53

Note:

1. The prices shown for 2002/03 and 2003/04 are indicative only. The application of CPI increases will alter the actual price applicable in these years.

Table 7.5 The two-part tariff applicable to unregulated rivers (\$/ML, 2001/02 \$)

	2001/02 (2001/02 \$)		2002/03 (2001/02 \$)		2003/04 (2001/02 \$)	
	Entitlement \$/ML	Usage \$/ML	Entitlement \$/ML	Usage \$/ML	Entitlement \$/ML	Usage \$/ML
Border	1.34	0.89	1.61	1.07	1.93	1.29
Gwydir	1.34	0.89	1.61	1.07	1.93	1.29
Namoi	1.34	0.89	1.61	1.07	1.93	1.29
Peel	1.34	0.89	1.61	1.07	1.93	1.29
Lachlan	1.08	0.72	1.29	0.86	1.55	1.03
Macquarie	1.58	1.05	1.90	1.26	2.27	1.52
Far West	0.73	0.49	0.87	0.58	1.05	0.70
Murray	1.08	0.72	1.30	0.86	1.56	1.04
Murrumbidgee	1.90	1.26	2.27	1.52	2.73	1.82
North Coast	1.44	0.96	1.72	1.15	2.07	1.38
Hunter	0.93	0.62	1.12	0.75	1.34	0.90
South Coast	1.05	0.70	1.26	0.84	1.52	1.01

Note:

1. The prices shown for 2002/03 and 2003/04 are indicative only. The application of CPI increases will alter the actual price applicable in these years.

7.2.1 Converting to volumetric licences and introducing a two-part tariff

DLWC is in the process of converting licences previously based on the area (ha) or the licence holder's pump capacity to volumetric licences. The conversion of licences will occur in two stages:

- Stage 1 involves granting each licence holder an annual volumetric entitlement, by converting the authorised irrigation area using a crop conversion ratio (developed by DLWC and NSW Agriculture). The conversion ratios within a valley may differ, according to the customer's irrigation practices, climatic conditions and crop type. This stage is nearly completed.
- Stage 2 involves defining the volume of water the licence holder is authorised to extract from different flow events. This will require DLWC to meter and monitor unregulated rivers. Some irrigators will be required to install meters at their own expense.

As licences are converted, DLWC will change the way it calculates bills:

- In Stage 1, customers will be charged per ML of their entitlement (\$/ML), instead of the old area-based charge (\$/ha). The charge per ML for each valley is calculated using the average crop conversion rate for the valley.³⁴
- In Stage 2, a two-part tariff will be introduced so customers will be charged a volumetric entitlement component (\$/ML) and a usage component (\$/ML). The two-part tariff will be set by splitting the customer's stage 1 entitlement charge into a stage 2 entitlement charge and a usage charge.³⁵

Table 7.6 shows the average crop conversion rates and converted charges for 2001/02 by valley.

³⁴ For example, in the Murray Valley, where 2.5ML/ha is the average conversion rate $(\$4.50/\text{ha})/(2.5 \text{ ML}/\text{ha}) = \$1.80/\text{ML}$.

³⁵ For example, for the Murray Valley:
 $\$1.80/\text{ML}$ stage 1 charge = $\$1.24$ stage 2 entitlement charge + $\$0.56/\text{ML}$ usage charge.

Table 7.6 Conversion of area-based charges to Stage 1 entitlement charges and two-part tariffs (2001/02)

	Area-based charge (\$/ha)	Average conversion ratio (ML/ha)	Stage 1 Entitlement charge (\$/ML)	Two-part tariff Entitlement charge (\$/ML)	Usage charge (\$/ML)
Border	7.14	3.20	2.23	1.34	0.89
Gwydir	7.14	3.20	2.23	1.34	0.89
Namoi	7.14	3.20	2.23	1.34	0.89
Peel	7.14	3.20	2.23	1.34	0.89
Lachlan	7.90	4.40	1.79	1.08	0.72
Macquarie	7.90	3.00	2.63	1.58	1.05
Far West	7.90	6.50	1.21	0.73	0.49
Murray	4.50	2.50	1.80	1.08	0.72
Murrumbidgee	7.90	2.50	3.16	1.90	1.26
North Coast	7.90	3.30	2.39	1.44	0.96
Hunter	6.84	4.40	1.55	0.93	0.62
South Coast	7.90	4.50	1.75	1.05	0.70

Note:

1. There may be differences due to rounding.

The new tariffs are set in such a way that:

- a bill calculated on a Stage 1 entitlement charge will be the same as one calculated on area-based charges if the average conversion ratio for the valley is used to convert the licence
- a bill calculated on the two-part tariff will be the same as one calculated on Stage 1 entitlement charges if usage is 100 per cent of entitlement.

High flow licences permit access to water only when river flows reach a certain height. High flow users in unregulated valleys will be charged the relevant valley specific, unregulated water charge, on the same basis as other licence holders in the valley or region. For licence holders whose usage is metered, the usage component of the two part tariff will apply.

7.2.2 Converting town water supply agencies and industrial customers to the two-part tariff

Town water supply agencies and industrial customers whose usage is metered, but who have not yet been allocated an entitlement volume, will pay a charge per licence (currently \$100) per year plus a usage charge (\$/ML). Once these customers have been allocated an entitlement volume, the charge per licence will no longer apply and the valley-specific two-part tariff will apply.

The usage charge that will apply prior to the allocation of an entitlement volume is the current charge, increased by 20 per cent per year plus an adjustment for CPI in 2002/03 and 2003/04 (see Table 7.7).

Table 7.7 Usage charges for town and industrial customers on unregulated rivers before the allocation of entitlement volumes (\$/ML)

	2000/01 \$/ML (2000/01\$)	2001/02 \$/ML (2001/02 \$)	2002/03 \$/ML (2001/02 \$)	2003/04 \$/ML (2001/02 \$)
Border	0.83	1.00	1.20	1.43
Gwydir	0.83	1.00	1.20	1.43
Namoi	0.83	1.00	1.20	1.43
Peel	0.83	1.00	1.20	1.43
Lachlan	0.91	1.09	1.31	1.57
Macquarie	0.91	1.09	1.31	1.57
Far West	0.91	1.09	1.31	1.57
Murray	0.47	0.56	0.68	0.81
Murrumbidgee	0.91	1.09	1.31	1.57
North Coast	0.91	1.09	1.31	1.57
Hunter	0.79	0.95	1.14	1.37
South Coast	0.91	1.09	1.31	1.57

7.2.3 The structure of the two-part tariff

In the Draft Report, the two-part tariff was set in such a way that the usage component was the same as the usage charge paid by town water supply and industrial customers who had not yet been allocated an entitlement volume. The entitlement component was the difference between the stage 1 entitlement charge and the usage component. This formula led to wide variations in the balance between the entitlement and usage component of the two-part tariff.

The two-part tariff in this Determination is set so that the ratio between the entitlement charge and the usage charge is 60:40. The Tribunal believes that this is a fair compromise between the need for consumption based price signalling and DLWC's desire for a stable revenue flow, particularly in the light of the fact that DLWC's costs tend to increase during dry periods.

7.3 Ground water tariffs

The Tribunal has set maximum prices for all ground water tariffs that include an increase of up to 20 per cent in 2001/02, and up to 20 per cent plus a CPI adjustment in 2002/03 and 2003/04. The exception is the \$75 base charge per property in nonmanaged areas, which will remain unchanged in 2001/02 and will increase by the CPI in 2002/03 and 2003/04.

Table 7.8 shows the maximum increase for each ground water charge. The 2001/02 increases are in nominal terms, while the latter two years are in real terms. Additional increases will be permitted in 2002/03 and 2003/04 to take account of inflation.

Table 7.8 Maximum increases in ground water charges

	2000/01	2001/02	2002/03	2003/04
	Current tariff	Proposed increases		
		Nominal	Real	Real
Base charge per property in nonmanaged areas	\$75	0%	0%	0%
Base charge per property in managed areas	\$100	20%	20%	20%
Entitlement charges (managed and nonmanaged areas)	Vary between valleys (see Table 7.9)	20%	20%	20%
Usage charges (managed areas only)	Vary between valleys (see Table 7.9)	20%	20%	20%

The Tribunal has retained the current difference between charges in managed and nonmanaged areas, as it reflects DLWC’s higher costs in managed areas. (Managed areas require higher levels of information collection, analysis, monitoring and management, and metering of water usage.)

Table 7.9 shows the maximum tariffs for ground water. Future prices are shown in 2001/02 dollar values (ie, excluding the impact of CPI increases).

Table 7.9 Maximum ground water prices (\$/ML)

	2000/01		2001/02		2002/03		2003/04	
	(2000/01 dollars)		(2001/02 dollars)		(2001/02 dollars)		(2001/02 dollars)	
	Entitlement	Usage	Entitlement	Usage	Entitlement	Usage	Entitlement	Usage
Border	0.42	0.21	0.50	0.25	0.60	0.30	0.72	0.36
Gwydir	0.42	0.21	0.50	0.25	0.60	0.30	0.72	0.36
Namoi	0.42	0.21	0.50	0.25	0.60	0.30	0.72	0.36
Peel	0.42	0.21	0.50	0.25	0.60	0.30	0.72	0.36
Lachlan	0.67	0.34	0.80	0.41	0.96	0.49	1.15	0.59
Macquarie	0.67	0.34	0.80	0.41	0.96	0.49	1.15	0.59
Far West	0.73	0.37	0.88	0.44	1.06	0.53	1.27	0.63
Murray	0.66	0.33	0.79	0.40	0.95	0.48	1.14	0.58
Murrumbidgee	0.41	0.20	0.49	0.24	0.59	0.29	0.71	0.35
North Coast	0.73	0.37	0.88	0.44	1.06	0.53	1.27	0.63
Hunter	0.73	0.37	0.88	0.44	1.06	0.53	1.27	0.63
South Coast	0.73	0.37	0.88	0.44	1.06	0.53	1.27	0.63

7.4 Large customer charges

DLWC levies a range of charges on large users who have Part 9 Water Management licences,³⁶ including Sydney Catchment Authority (SCA), Hunter Water Corporation (HWC) and Macquarie Generation (MG). These three large users made submissions to the Tribunal questioning the charges proposed by DLWC, which include usage charges to recover the costs of supply; application and annual charges to recover the costs of water licences; and a charge specific to SCA to fund an aquatic weeds task force. The Tribunal's Determination on these charges is discussed below.

7.4.1 Usage charges

After considering DLWC's proposal and the arguments and evidence put forward by SCA, HWC and MG, the Tribunal has decided that these large users' usage charges should be in line with those of other users in their respective valleys. Its main reason is that DLWC has not provided appropriate evidence to support its proposal for differential charges for large users.

Sydney Catchment Authority and Hunter Water Corporation

DLWC proposed to increase these customers' usage charge by 20 per cent per annum, because the level of the charge has not changed since its introduction in 1995 and there is a need to increase the charge to move towards full cost recovery. The Tribunal investigated the evidence presented to support DLWC's proposal, but found it was not conclusive enough to justify levying SCA and HWC charges different to other users.

HWC proposed that the current usage charge should be held at \$1.80 per megalitre until the charges of other customers in their respective valleys reach that level. At that point, it proposes that their charges increase in line with those for other users. The Tribunal accepts the principle that HWC and SCA should be charged on the same basis as other users in their valley or region. However, as these agencies do not have an entitlement, total usage will be used as a substitute. Effectively, this means that the valley specific entitlement charge and usage charge components of the two-part tariff will be combined and billed for each megalitre used.

For example, the charge derived by adding the entitlement (\$1.05/ML) and the usage (\$0.70/ML) portions of the two-part tariff for 2001/02 for the South Coast (see Table 3 of Determination attached) is \$1.75/ML. The charge for the SCA for 2001/02 is therefore \$1.80/ML. Note that the Tribunal has also determined that HWC be charged for groundwater and surface water separately, based on usage, in line with HWC's request for separate charging.

³⁶ Part 9 Water Licences under the *Water Act 1912* are granted to the following water management authorities: Sydney Water Corporation; Hunter Water Corporation; Sydney Catchment Authority; Delta Electricity; Eraring Energy; Macquarie Generation.

Macquarie Generation (MG)

The Tribunal accepts DLWC's proposal to set MG's usage charge in line with that of other users. Prior to this Determination, the structure of MG's charges was complicated and the Tribunal requested³⁷ that DLWC normalise MG's licensing arrangements and hence pricing structures. DLWC and MG have undertaken extensive negotiations which have resulted in DLWC issuing a Part 9 licence to MG, and introducing usage charges for MG equivalent to other users in the Hunter valley. MG supports the principle that it should be charged bulk water rates similar to those of other users, but believes it should be compared to other large users with Part 9 licences. Under this Determination, both SCA and HWC will in due course be charged usage charges similar to those charged to other users in their areas.

7.4.2 Application and annual management charges

The Tribunal notes that DLWC has negotiated application and annual management charges with SCA, HWC and MG in relation to these Part 9 licences. At least one of these agencies has questioned the basis for these charges. In the Draft Report the Tribunal indicated that it would consider whether it should set these charges. Following consideration of information about the nature of the charges and the steps taken by DLWC to disclose costs to these agencies, the Tribunal will not be determining these charges.

7.4.3 Charges to fund Aquatic Weeds taskforce

DLWC proposes to charge SCA a special levy to fund an aquatic weeds task force. This task force is to be formed to reduce the threat posed by aquatic weed infestations in the Hawkesbury-Nepean. The Tribunal does not believe it has the legislative power to determine the proposed aquatic weeds levy.

7.5 Licence fees

DLWC have advised the Tribunal that as part of the implementation of the Water Management Act it will be reviewing the structure of and fees for licences during the course of this determination period. Although licence fees will remain at current levels at this stage, the Tribunal's Determination allows for reconsideration of licence fees prior to June 2004. Any review of licence fees undertaken by the Tribunal will include public consultation.

³⁷ IPART, *Bulk Water Prices for 1998/99 and 1999/00*, p 45.

8 IMPLICATIONS FOR DLWC AND STATE WATER

The proposed maximum prices will result in an increase in DLWC's total revenue of around \$8.9m over the determination period. This translates into an increase in the proportion of costs recovered from 61 per cent in 2000/01 to 74 per cent in 2003/04.

8.1 Increase in revenue

As Table 8.1 shows, DLWC's total revenue from bulk water tariffs is projected to increase by approximately \$7.8m between 2000/01 and 2003/04 (in 2001/02 dollars). The largest portion of this increase - \$5.4m - will come from increased tariffs on regulated rivers (based on DLWC's long-term usage volumes). A further \$1.3m will come from increased tariffs on unregulated rivers (assuming that the two-part tariff is not yet in operation³⁸). Increased tariffs for ground water will contribute another \$1.1m (assuming that the volume of extraction and the proportions of managed and nonmanaged areas remain unchanged). However, revenue from ground water tariffs may be less than the projected amount due to lower usage volumes.

Table 8.1 DLWC's total projected revenue by water source (2001/02 \$'000)

	2000/01	2001/02	2002/03	2003/04
Regulated Rivers	32,858	33,485	36,001	38,260
Unregulated Rivers	1,950	2,173	2,696	3,221
Ground Water	1,829	2,022	2,487	2,953
Miscellaneous income	2,705	2,705	2,705	2,705
Total	39,341	40,384	43,889	47,139

Notes:

1. Revenue from regulated rivers has been calculated using DLWC's estimated long-term usage.
2. Revenue for unregulated water has been calculated using the Stage 1 Entitlement charge for irrigators and the \$100 fixed charge plus usage charge for towns and industry. It has been assumed that irrigators' entitlement volumes remain unchanged. Revenue from Sydney Catchment Authority and Hunter Water Corporation has been excluded.
3. Projected revenue from ground water has been calculated assuming that entitlement and usage volumes will remain unchanged, and that no more areas will become managed areas.
4. DLWC receives \$2.7m per year in miscellaneous income on regulated rivers. This amount is offset against costs when the level of cost recovery on regulated rivers is calculated.

³⁸ It is not possible to make an accurate prediction of revenue from the two-part tariff, firstly because town water supply agencies and industrial customers have not yet been given entitlement volumes, and secondly because irrigators' usage volumes are unknown. Revenue from towns and industries will increase once the two-part tariff is adopted, but revenue from irrigators may decrease if usage volumes are lower than entitlement volumes.

8.2 Improvement in cost recovery

Based on the costs and cost allocation methodology used for this Determination, the proposed maximum price increases will result in an increase in the level of cost recovery, from 61 per cent in 2000/01 to 74 per cent in 2003/04. As Table 8.2 shows, the overall level of cost recovery across the valleys will vary significantly, from 96 per cent in the Murray Valley to 19 per cent in the South Coast in 2003/04. The Tribunal notes that the level of cost recovery is significantly influenced by the cost base allowed which has changed over time. The likely growth in water resource management costs, discussed at 4.2, and refinement of the cost allocation methodology may result in continuing variability in the cost base.

Table 8.2 Percentage of costs recovered by valley (all water sources)

	2000/01 %	2003/04 %
Barwon Region (Border, Gwydir, Namoi, Peel)	66	82
Central West (Lachlan, Macquarie)	81	89
Far West	20	33
Murray	77	96
Murrumbidgee	78	88
North Coast	12	20
Hunter	30	45
South Coast	12	19
Total NSW	61	74

Table 8.3 shows that levels of cost recovery are far higher on regulated rivers than on unregulated rivers or for ground water in all valleys except the North Coast. The majority of regulated rivers will reach full cost recovery by 2003/04. However, levels of cost recovery will improve for all sources between 2000/01 and 2003/04.

Table 8.3 Percentage of allocated costs recovered from charges in 2003/04

	Cost recovery in 2003/04		
	Regulated Water	Unregulated Water	Ground Water
Border	100%	42%	
Gwydir	100%	89%	Barwon region
Namoi	100%	43%	37%
Peel	55%	Included in Namoi	-----
Lachlan	100%	28%	Central West
Macquarie	107%	71%	35%
Far West	No regulated rivers	33%	----- 34%
Murray	100%	33%	56%
Murrumbidgee	100%	71%	28%
North Coast	11%	21%	22%
Hunter	53%	31%	21%
South Coast	35%	20%	8%
Total	94%	31%	32%

Note:

1. Cost recovery levels in 2000/01 are shown in Table 6.1.

The continuing low level of cost recovery in some valleys is due to several reasons. In the Far West, there are no regulated rivers, and current prices for unregulated water and ground water in this area are low relative to the costs involved. In the coastal valleys, most of the bulk water used is from unregulated rivers and ground water with current prices well below the delivery costs. In addition, the current price on coastal regulated rivers is low relative to costs, largely because there are relatively few extractors to share the costs of the infrastructure. It is possible that the costs on some coastal valley rivers will never be fully recovered.

The prices set by the Tribunal will result in a shortfall in DLWC's revenue of \$15.9m in 2003/04, as shown Table 8.4. Whilst the largest portion of DLWC's revenue comes from regulated river tariffs, the bulk of its revenue shortfall comes from tariffs for unregulated water (\$7.0m) and ground water (\$6.3m). This indicates the new levels of cost recovery on unregulated rivers and for ground water are still significantly lower than the level on regulated rivers.

**Table 8.4 Revenue shortfall in 2003/04 by valley and water source
(\$m, 2001/02 dollars)**

	Regulated rivers	Unregulated rivers	Ground Water	Total
Border	0	0.1		
Gwydir	0	0.0	Barwon region	Barwon region
Namoi	0	0.3	1.4	2.2
Peel	0.4	Included in Namoi		
Lachlan	0	0.3	Central West	Central West
Macquarie	-0.2	0.2	1.0	1.2
Far West	na	0.9	0.8	1.6
Murray	0	0.2	0.4	0.5
Murrumbidgee	0	0.1	1.1	1.2
North Coast	0.4	2.0	0.4	2.8
Hunter	1.9	0.8	0.4	3.2
South Coast	0.3	2.2	0.8	3.3
Total	2.6	7.0	6.3	15.9

Note:

1. Numbers may not add up due to rounding.

9 IMPLICATIONS FOR CUSTOMERS

The maximum prices set represent significant increases in bulk water charges for many bulk water users, and some customers may find it difficult to absorb these increases. However, given that prices need to move towards full cost recovery level, the Tribunal believes its proposed price path represents a fair balance between the interests of customers, DLWC and the broader community. It is also of the view that the problem of declining farm profitability in some regions which may be exacerbated by price rises is better addressed through mechanisms other than pricing.

This section looks at the implications of the prices set by the Tribunal for customers that use regulated water, unregulated water and ground water.

9.1 Implications for regulated water users

Customers on regulated rivers will pay a maximum of 15 per cent more each year, in real terms, for the same entitlement and volume extracted. As Table 9.1 shows, a typical bill for a customer with a low security entitlement of 1,000ML per year and an extraction rate equal to the long-term average for the valley will change by between approximately \$0 and \$4,113 over the period 2000/01 to 2003/04 in nominal terms, assuming an inflation rate of 3 per cent in 2002/03 and 2003/04.

Table 9.1 Examples of bills for customers on regulated rivers

	Usage as % of entitlement volume ¹	Bill in 2000/01 (2000/01 \$ per year)	Bill in 2003/04 (2003/04 \$ per year)	Total increase (nominal \$)
Low Security Entitlement = 1,000ML				
Border	75	5,670	7,473	1,803
Gwydir	66	5,020	6,343	1,323
Namoi	83	10,029	13,590	3,561
Peel	21	6,263	7,332	1,068
Lachlan	39	4,995	6,676	1,681
Macquarie	61	6,132	6,132	0
Far West	No regulated rivers			
Murray	84	4,651	6,216	1,565
Murrumbidgee	73	3,831	4,638	807
North Coast	5	5,440	8,778	3,338
Hunter	75	6,704	10,816	4,113
South Coast	26	6,196	9,998	3,801

Notes:

- Entitlements vary significantly in size both within and between valleys. This table calculates the bill for an entitlement volume of 1 000 ML for comparability between valleys.
- The bills are calculated using DLWC's projections of average long-term usage per valley.
- The bills for 2003/04 have been calculated assuming 3 per cent inflation in 2002/03 and 2003/04.

Increases of this magnitude may have significant impacts on farm incomes in some areas. However, the cumulative increases between 1999/00 and 2003/04 that will result from the Tribunal's prices are significantly lower than the increases used in the NSW Agriculture impact studies in the Peel and the Lachlan valleys (discussed in Chapter 6), and the impact on farm incomes will be similarly lower. Table 9.2 compares the cumulative increase in prices between 1999/00 and 2003/04 with those used in the NSW Agriculture studies.

Table 9.2 Cumulative price increases compared with those used in NSW Agriculture studies in the Peel and Lachlan valleys

	Cumulative increase in a typical bills, ^{1,2} 1999/00 – 2003/04	
	Increase with Tribunal's prices (real)	Increase used in NSW Agriculture study
Peel Valley	10%	200%
Lachlan Valley	30%	65%

Notes:

1. Typical bills were calculated assuming usage of 21 per cent of entitlement volumes in the Peel Valley, and 39 per cent in the Lachlan Valley. These are DLWC's projections of long-term usage. Low security entitlement prices were used.
2. Percentage increases are rounded to the nearest 5 per cent.

9.2 Implications for unregulated water users

Bills for water from unregulated rivers will increase by a maximum of 20 per cent per year in real terms over the determination period (assuming the customer remains on the same tariff structure and no change in other conditions, such as area, entitlement and/or usage volumes). Nominal increases will be higher in 2002/03 and 2003/04, as the maximum price increase allowed will be adjusted for inflation.

The bills of irrigation customers may increase by more than 20 per cent when they are converting to the two-part tariff structure. However, they may also increase by less than 20 per cent, depending on the crop conversion rate applied and on the customer's usage volumes. The bills of most town water supply agencies and industrial customers will increase by a relatively large amount when they are converted to the two-part tariff. However, these customers currently pay little for water from unregulated rivers. The increases will result when they move on to the same tariffs as irrigators.

9.2.1 Irrigation farmers

The Tribunal's changes to prices and the tariff structure for irrigation farmers using unregulated water will result in a significant increase in the bills of many of these farmers. However, in dollar terms, water from unregulated rivers is much cheaper than water from regulated rivers in all valleys. Therefore, bulk water payments to DLWC are likely to remain a small proportion of total farm costs.

Table 9.3 illustrates how the bills of irrigation farmers may change during the determination period, as a result of price increases and conversion to the two-part tariff. Column 2 shows that bills for farms converted to a volumetric licence (and thus paying a Stage 1 entitlement charge) and with an entitlement of 1,000ML per year are likely to increase by between \$840 and \$2,200 over the period from 2000/01 to 2003/04 in nominal terms (assuming 3 per cent inflation in 2002/3 and 2003/04). For farms converted to the two-part tariff who use only 80 per cent of their 1,000ML annual entitlement, the increase is likely to be smaller (Column 3). This is because the conversion ratio assumes that 100 per cent of an entitlement is extracted each year although typically actual usage will be less than this.

Table 9.3 Examples of bills for customers on unregulated rivers under the current tariff structure and the two-part tariff

	Bill in 2000/01 Entitlement charge only (2000/01\$ per year)	Bill in 2003/04 Entitlement charge only (2003/04\$ per year)	Bill in 2003/04 Two-part tariff with usage of 80% of entitlement (2003/04 \$ per year)
Entitlement = 1,000ML			
Border	1,859	3,409	3,136
Gwydir	1,859	3,409	3,136
Namoi	1,859	3,409	3,136
Peel	1,859	3,409	3,136
Lachlan	1,495	2,742	2,522
Macquarie	2,193	4,021	3,699
Far West	1,012	1,856	1,707
Murray	1,500	2,750	2,530
Murrumbidgee	2,632	4,825	4,439
North Coast	1,994	3,655	3,363
Hunter	1,295	2,375	2,185
South Coast	1,463	2,682	2,467

Note:

1. The bills for 2003/04 have been calculated assuming 3 per cent inflation in 2002/03 and 2003/04.

However, note that when customers convert from the area-based charge to the volumetric entitlement charge, the actual change in their bill will depend on the crop conversion rate used to establish their entitlement volume. If the average rate for the valley is used, no change will be experienced. The entitlement volume is subject to negotiation between irrigators and DLWC. Conversion to the two-part tariff will only result in a smaller increase in the bill if the volume of extraction is lower than the entitlement volume. Given that a farm's long-term usage will usually be lower than its entitlement volume, most customers should be better off as a consequence of conversion to the two-part tariff.

9.2.2 Town water supply agencies and industrial customers

Most town water supply agencies and industrial customers will face large increases in their bills when they convert to the two-part tariff. However, the Tribunal is satisfied that bulk water costs are usually a very small proportion of total costs. Since town water supply agencies and industrial customers currently pay very little for the water, the impact of the increases on total costs should be small. In addition, the bills for customers with licences for small extraction volumes may be lower, as the \$100 per year fixed charge will be removed.

In general, the impact on individual customers will vary, depending on:

- the size of the entitlement charge, which varies from \$0.73/ML in the Far West to \$1.90/ML in the Murrumbidgee Valley in 2001/02
- the size of the entitlement volume
- the percentage of this volume they use.

9.3 Implications for ground water users

Ground water users will face fairly large price increases in relative terms. However, the dollar value of these increases is small compared to total farm costs.

Table 9.4 compares the (nominal) bills for ground water customers with an entitlement of 500ML per year in 2000/01 with the bills for those customers in 2003/04, assuming an inflation rate of 3 per cent in 2002/03 and 2003/04. The bills for customers in nonmanaged areas are lower than those for customers in managed areas, and will increase by less, firstly because they do not pay a usage charge and secondly because the \$75 per property base charge will remain unchanged in real terms after 2001/02.

Table 9.4 Examples of bills for customers using ground water

	Bill in 2000/01 (2000/01 \$ per year)	Bill in 2003/04 (2003/04 \$ per year)	Total increase (nominal \$)
Nonmanaged areas – 500ML per year entitlement (\$ per year)¹			
Barwon Region (Border, Gwydir, Namoi, Peel)	283	461	178
Central West (Lachlan, Macquarie)	408	691	282
Far West	442	752	310
Murray	404	683	279
Murrumbidgee	279	454	175
North Coast, Hunter, South Coast	442	752	310
Managed areas – 500ML per year entitlement and usage (\$ per year)²			
Barwon Region (Border, Gwydir, Namoi, Peel)	413	756	344
Central West (Lachlan, Macquarie)	604	1,108	503
Far West	650	1,192	542
Murray	596	1,092	496
Murrumbidgee	404	741	337
North Coast, Hunter, South Coast	650	1,192	542

Notes:

1. The average size of entitlements in nonmanaged areas is approximately 650ML per licence.
2. The average size of entitlements in managed areas is approximately 150ML per licence.
3. The bills for 2003/04 have been calculated assuming 3 per cent inflation in 2002/03 and 2003/04.

10 IMPLICATIONS FOR THE ENVIRONMENT

In developing the Determination, the Tribunal considered its implications for the environment. In particular, it examined DLWC's water resource management expenditure in the light of the new *Water Management Act, 2000*. The Tribunal believes that the adoption of the impactor pays approach to allocating costs to users will serve to encourage efficient environmental outcomes in the longer term.

The Tribunal has previously stated its belief that the most effective way of addressing environmental problems on NSW rivers is for DLWC to manage water use within ecologically sustainable river flow regimes. This approach is consistent with that of the new Water Management Act (discussed in *Brief overview of the Water Management Act, 2000*, below). The role of water pricing in this context is to ensure DLWC has adequate funding to cover its water resource management costs, and to encourage demand management.

10.1 Ensuring adequate funding for water resource management

The Tribunal is concerned to ensure that the prices it sets provide adequate funding to cover DLWC's efficient water resource management activities. For this Determination, it commissioned ACIL to assist it in determining:

- the appropriate level of water resource management expenditure to be allowed for in determining prices
- the extent to which water resource management expenditure should be recovered from users.

ACIL found that the water resource management costs tabled by DLWC in its submission are almost certainly conservative. It believes that the continued application of an efficient planning process is likely to expand rather than contract the expenditure items, possibly quite substantially, over the three years for which DLWC has estimated costs.

The Tribunal has allowed for total water resource management expenditure of \$41m (post ANTS). This is in line with ACIL's recommendation and the amount proposed by DLWC in its submission.

10.2 Environmental compliance costs

As discussed in Section 5.1.4, the Tribunal has reviewed the allocation of costs for environmental compliance capital expenditure. These include the costs associated with the installation of fish ladders, facilities to mitigate thermal pollution and to enable environmental flows which mimic natural river flow cycles.

The Tribunal has concluded that these costs should be shared by extractive users and the Government, representing the broader community. It notes community expectations that the needs of the environment will be met at the same time as the needs of extractive users. Submissions received by the Tribunal indicate that the need for capital expenditure in this area is likely to increase.

10.3 Encouraging demand management

The Tribunal considers that the prices it determines should encourage water conservation. However, the full nature of the impact of price changes on the demand for bulk water is not clear. The Tribunal recognises that price plays a supplementary role in encouraging demand management, but believes that decisions or planning instruments such as the MDBC cap are likely to be much more effective. It also notes the significant emphasis the new Water Management Act gives to securing environmental outcomes. In particular, the Act will provide priority and security for environmental water allocations. In addition, it will introduce a more effective water trading regime that is likely to lead to more efficient use of available water resources.

Most irrigators incur substantial costs in using bulk water in addition to water usage charges, including pumping and equipment costs. The Tribunal believes these costs alone would send some signals encouraging the efficient use of water, and the price increases resulting from this Determination in a number of valleys will serve to further reinforce these signals. In addition, the expansion of the two-part tariff structure to unregulated water and ground water customers should further encourage the efficient use of water, as this structure includes a substantial component based on the volume of water the customer uses.

The Tribunal conducted a preliminary examination of the current balance between the fixed entitlement charge and the variable usage charge in DLWC's two-part tariffs on regulated rivers. It found that the costs DLWC incurs to provide the services related to these charges consist substantially of fixed costs. If the balance was adjusted to better reflect the cost base the usage component of water charges would probably be substantially lower. The Tribunal believes such rebalancing would be inappropriate, and prefers to maintain a strong consumption-based price signal to encourage demand management.

Brief overview of the Water Management Act 2000

The Water Management Act 2000 will replace several older Acts including the Water Act 1912, the Rivers and Foreshores Improvement Act, the Irrigation Corporations Act and others. Provisions of the new Act are likely to have significant impacts on bulk water users and also on the management of environmental issues related to the extraction of bulk water.

The Water Management Act 2000 was created to better manage the water resources of NSW. It will take some five years to fully implement as regulations covering the detail of water management are progressively introduced. The Act aims to:

- protect and enhance water sources by establishing Water Management Plans, by issuing water use approvals, and by establishing water source protection zones
- strengthen the water rights of landholders by legislating for basic water rights, and by establishing a new system of water licensing with tradeable water access licences.

The Tribunal believes provisions of the new legislation relating to measures such as mandatory environmental flows in rivers and the establishment of Water Management Plans will provide the Government with significant new tools for water resource management.

The Act establishes Water Management Committees, with broad stakeholder representation, which will have the task of developing Water Management Plans. These are proposed as a means of reconciling multiple objectives and ensuring consideration of economic, social and environmental objectives.³⁹ The Committees, through the development of Water Management Plans, are intended to have significant input to water resource management decision making.

From the Tribunal's viewpoint, one of the most important objectives of the new water legislation is an improved framework for water entitlement trading. The Tribunal believes that a pragmatic system for trading will assist in facilitating the development of an efficient water market

³⁹ See second reading speech introducing the Water Management Bill 2000, delivered by the Minister for Agriculture and Minister for Land and Water Conservation, The Hon R Amery MP, Legislative Assembly 22 June 2000.

APPENDIX 1 GLOSSARY/ABBREVIATIONS

AAA	Agriculture-Advancing Australia
ACCC	Australian Competition and Consumer Commission
ACIL	ACIL Consulting
Artificial Water Asset	Structures or equipment built as part of water system such as dams, weirs, fish ladders, irrigation channels.
ANTS	A New Tax System (Goods and Services Tax) Act, 1999
Capex	Capital Expenditure (refer Section 4.3.1)
COAG	Council of Australian Governments
CPI	Consumer Price Index
CSC	Customer Service Committee
DBBRC	Dumaresq Barwon Border River Commission
DLWC	Department of Land and Water Conservation
GST	Goods and Services Tax
Ha	Hectare
HWC	Hunter Water Corporation
IPART	Independent Pricing and Regulatory Tribunal
KPA	Key Performance Area
KRA	Key Results Area
Legacy Costs	Current and future costs attributable to past activities (refer p 31).
Line-in-the-sand	Tribunal Determination in 1998 to write down all pre 1 July 1997 assets to zero value, for pricing purposes.
MDBC	Murray-Darling Basin Commission
MEERA	Modern Engineering Equivalent Replacement Asset - An asset value calculated on the basis that the asset is constructed at the time of valuation in accordance with the modern engineering practice and the most economically viable technologies, which provides similar utility functions to the existing asset in service.
Natural Capital Assets	Ecological goods and resources associated with living things, their modes of life and habitats. Rivers, aquifers, fish and water birds are natural capital assets.
NCC	National Competition Council
NSW	New South Wales
OH&S	Occupational Health and Safety
Opex	Operating Expense
PwC	PricewaterhouseCoopers (Consultants)

R&D	Research and Development
Regulated River	Those rivers or sections of rivers in which the water flow is controlled by a regulating structure, such as a dam or weir, owned by State Water (DLWC).
ROA	Return on Assets (refer Appendix 7)
SCA	Sydney Catchment Authority
Statement of Financial Performance	A statement of financial performance specifies a State Government Agency's and Treasury's commitments, establishes financial and performance targets for the agency, and sets out the agreed principles upon which the funding and delivery of services in the agency's area of responsibility will be based.
TAMP	Total Asset Management Plan
Tribunal	Independent Pricing and Regulatory Tribunal
Unregulated River	Those rivers, or stretches of rivers, which are not controlled by a dam or weir that is owned by State Water (DLWC).
WRM	Water Resource Management (refer Section 4.2)
WRSAP	Water Reform Structural Adjustment Program

APPENDIX 2 IPART ACT REQUIREMENTS

A2.1 Section 15 compliance

Section	Reference
s15(1)(a) the cost of providing the services concerned	The Tribunal has reviewed the cost of providing bulk water and the appropriate allocation of these costs. Its consideration of these issues is discussed in Chapters 4 and 5 .
s15(1)(b) the protection of consumers from the abuses of monopoly power in terms of prices, pricing policies and standard of services	Chapters 4 and 5 discuss how the Tribunal has analysed costs and adopted those that it believes are appropriate. Chapter 6 discusses the impact of price increases on customers and how the Tribunal has determined a transition period for increases in 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	Chapter 4 discusses the rate of return chosen by the Tribunal and the reasoning behind that decision.
s15(1)(d) the effect on general price inflation over the medium term	Chapters 6 and 7 discuss Tribunal's proposed price increases. Whilst substantial in percentage terms in some valleys, the Tribunal does not expect that the increase in prices will have a significant effect on general price inflation.
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	Chapter 4 discusses the outcomes of the independent consultancy commissioned by the Tribunal to analyse the efficiency of DLWC's costs.
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	Chapter 10 discusses implications of the new prices for 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	DLWC is not required to pay dividends or raise capital. The appropriate levels of capital expenditure were reviewed by a consultancy commissioned by the Tribunal. Its findings and provision for asset renewal through an annuity are discussed in Chapter 4 .
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	Not applicable.
s15(1)(l) the need to promote competition in the supply of the services concerned	Chapter 3 discusses the progress towards separating State Water as an independent body. The Tribunal notes comments made by the PricewaterhouseCoopers consultancy that scope exists for market testing some activities undertaken by DLWC.

Section	Reference
s15(1)(j) consideration of demand management (including levels of demand) and least cost planning	Chapter 10 outlines the Tribunal's consideration of pricing strategies to promote demand management.
s15(1)(k) the social impact of the determinations and recommendations	Chapter 6 discusses limits the Tribunal has placed on price movements and Chapter 9 discusses implications for customers.
s15(1)(l) standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).	The Tribunal has endeavoured to ensure that prices are appropriate to the level of service provided. Chapter 3 discusses the progress made by State Water since the last determination.

A2.2 Section 16 Compliance

Section 16 of the IPART Act requires an assessment of the likely annual cost to the NSW Government's consolidated fund if bulk water prices are not increased to the maximum level and DLWC was compensated for the revenue foregone. Given DLWC's estimate of long term water usage, the Tribunal estimates that DLWC would forego a total of \$19.7m (2001/02 dollars) over the determination period if the new maximum bulk water prices were not applied from 1 October 2001. This calculation is based on a projected inflation rate of 3.0 per cent per year.

APPENDIX 3 ISSUES FOR THE NEXT DETERMINATION

As a result of the Tribunal's inquiries, consultants reports and submissions received from stakeholders in the lead up to this Determination the Tribunal has identified a number of issues that need attention by DLWC prior to the next Determination. These issues are:

- **Progressive movement towards a two-part tariff for all bulk water**

The Tribunal notes that the staged process for the introduction of a two-part tariff on unregulated rivers has started and would expect to see this progressed significantly by the next Determination.
- **The balance between entitlement and usage charges in structuring two-part tariffs**

There is wide variation between the ratios of entitlement charges to usage charges across regulated rivers. The reasons for this may not necessarily be due to cost reflectivity. The Tribunal encourages DLWC to further investigate the composition of the tariffs with reference to its implications for DLWC revenues, impact on customers, and the potential signalling effects of the charges.
- **High security and low security entitlement charges**

The Tribunal is aware that the costs of storage to cater for high security customers are significantly greater than for low security customers. The Tribunal is also aware that in some valleys it is cheaper for users to convert from low security to high security entitlements for the same expected volume of water. This decreases the revenue that DLWC receives but not DLWC's costs. Arguably this may result in some general security users paying a relatively higher price than warranted. The Tribunal encourages DLWC to review these ratios for consideration at the time of the next Determination.
- **Wholesale customer discounts**

The Tribunal is aware that, whilst DLWC believes these discounts are not justified on cost grounds, bulk water customers do provide information that assists DLWC to perform its functions. The Tribunal foreshadows that it will review wholesale discounts at the time of the next Determination and requests that DLWC investigate and review these discounts in the intervening period.
- **Separate Valley Accounts**

The Tribunal is aware that there are cost implications for State Water setting up separate valley accounts. However, the Tribunal considers that further work needs to be conducted to ensure the integrity of the cost database and to facilitate independent auditing.
- **Ring Fencing**

The Tribunal expects that DLWC will quickly formalise and finalise the process of charging for services between itself and State Water. This will enable State Water to issue tenders for and, where appropriate, engage external providers for services currently provided by DLWC.
- **Customer Service Committees**

To help guarantee the objectives of the CSCs in ensuring that stakeholders have meaningful input into how bulk water services are delivered in their valley the Tribunal expects that State Water will better manage its consultation with and information provision to CSCs in the period up to the next Determination.

- **Operating Costs**

Given the probability of significant developments within the industry the Tribunal is likely to review in detail the operating costs of DLWC at the next Determination. It notes that the costs used for this Determination should not be regarded as the benchmark efficient costs.

- **Capital Expenditure**

The Tribunal has accepted PwC's revised capital expenditure calculations. PwC's revised capital program made allowance for additional compliance expenditure. At the next investigation the Tribunal will review DLWC's capital expenditure over the price path to ensure that capital expenditure has been undertaken on the projects that it was earmarked for.

- **Murray Darling Basin Commission Costs**

To ensure that MDBC costs are appropriately assigned on an impactor pays basis for the next Determination and thus ensure that Murray valley users do not pay more than their fair share of these costs, the Tribunal requires DLWC to develop a robust and transparent method of allocating MDBC costs for the next Determination.

APPENDIX 4 LIST OF SUBMISSIONS

Submissions received prior to release of Draft Report

Organisation

Bathurst City Council
 Border Rivers Food and Fibre
 Coastal Valleys Customer Service Committee
 Coffs Harbour City Council
 Coffs Harbour City Council
 Cooma-Monaro Shire Council
 Cowra Shire Council
 Cudgegong Valley Water Committee
 Dept of Land & Water Conservation
 Environment Protection Authority
 Friends of the Earth Sydney
 Gwydir Valley Irrigators Association
 Gwydir Valley Irrigators Association
 Hunter Valley Water Users Association
 Hunter Water Corporation
 Lachlan Valley Customer Service Committee
 Lachlan Valley Water
 Local Government & Shires Associations
 Lower Clarence County Council
 Macquarie Generation
 Macquarie River Food & Fibre
 MIA Council of Horticultural Associations Inc
 Moira Board of Management
 Mungindi - Menindee Advisory Council Inc.
 Murray Customer Service Committee
 Murray Irrigation Limited
 Murray Valley Ground Water Users Association
 Murrumbidgee Customer Service Committee
 Nambucca Valley Water Users & Management Group
 Namoi Regulated River Management Committee
 Namoi Valley Water Users Association
 Narromine Irrigation Board of Management
 NSW Fisheries
 NSW Irrigators' Council
 NSW Irrigators' Council

Representative

Mr Phillip Perram
 Mr Bruce McCollum
 Mr Bob Doyle
 Mr W Davison
 Mr Mark Ferguson
 Mr Neil Watt
 Mr Carl Berry
 Mr Trevor Crosby
 Dr Robert Smith
 Ms Lisa Corbyn
 Mr Dietrich Willing
 Mr John Seery
 Mr John Seery
 Mr Arthur Burns
 Mr David Evans
 Mr Dennis Moxey
 Ms Mary Ewing
 Mr Murray Kidnie
 Mr Ian Preston
 Mr John Neely
 Ms Michelle Ward
 Ms Belinda Wilkes
 Mr Michael Barlow
 Mr Peter Cottle
 Mr Colin Thomson
 Mr Bill Hetherington
 Mr Leigh Chappell
 Mr Rel Heckendorf
 Mr Barry Kerr
 Mr Jim McDonald
 Mr Jeremy Killen
 Mr E O Whittle
 Mr Steve Dunn
 Mr Brad Williams
 Mr Brad Williams

NSW Irrigators' Council	Mr Brad Williams
Pechelba Trust	Mr Ian Cush
Peel Valley Water Users Association	Mr Laurie Pengelly
Peel Valley Water Users Association	Mr Adrian Snowden
Rous Water	Mr Wayne Franklin
Shoalhaven City Council	Mr John Gould
Southern Riverina Irrigation Districts' Council	Ms Deborah Kerr
Stratharlie Pastoral Company Pty Ltd	Mr Thomas Woolaston
Sydney Catchment Authority	Mr Jeff Wright
Tamworth City Council	Mr Bruce Logan
Tweed Shire Council	Mr Mike Rayner
Warren Shire Council	Mr Ashley Wielinga
Water Directorate	Mr Gary Mitchell
West Corugan Private Irrigation District	Mr Peter Wallis
Western Murray Irrigation Ltd	Mr Anthony Couroupis
World Wide Fund for Nature Australia	Mr Warwick Moss

Individual

Mr Robert Caldwell
Mr Stephen Crossling
Mr Barry Gilbert
Mr Philip Griffith
Mr J E Hodges
Mr AB & GF Jarrett
Mr & Mrs IW & G McKnight
Mr Ildu Monticone
Mr Laurie Pengelly
Mrs G Thrift
Mr D A Woods

Submissions received following release of Draft Report

Organisation

Border Rivers Food and Fibre
 Dept of Land & Water Conservation
 Friends of the Earth Sydney
 Gwydir Valley Irrigators Association
 Lachlan Valley Water
 Macquarie River Food & Fibre
 Murray Irrigation Limited
 Murray Valley Ground Water Users Association
 Murrumbidgee Irrigation
 Namoi Valley Water Users Association
 NSW Fisheries
 NSW Irrigators' Council
 Pechelba Trust
 Peel Valley Water Users Association
 Southern Riverina Irrigation Districts' Council
 Sydney Catchment Authority
 Tamworth City Council
 Toonumbar Dam Water Users' Association
 World Wide Fund for Nature Australia

Representative

Mr Bruce McCollum
 Dr Robert Smith
 Mr Dietrich Willing
 Mr John Seery
 Ms Mary Ewing
 Ms Michelle Ward
 Mr Bill Hetherington
 Mr Leigh Chappell
 Mr John Chant
 Mr Jeremy Killen
 Mr Steve Dunn
 Mr Brad Williams
 Ms Robyn Cush
 Mr Laurie Pengelly
 Mr Trevor Clark
 Mr Graeme Head
 Mr Ray Hezkial
 Mr Gordon Bebb
 Mr Warwick Moss

Individual

Mr Robert Caldwell
 Mr Stephen Crossling
 Mr Roger O'Farrell
 Mr R J Oldfield
 Mr D A Woods

APPENDIX 5 PRESENTERS AT THE PUBLIC HEARING

Organisation	Presenters
Department of Land and Water Conservation	Dr Chris Guest, Mr Robert Marsh, Mr Abel Immaraj
NSW Irrigators Council	Mr Brad Williams, Mr Ted Morgan, Mr Dick Thompson, Ms Michelle Ward
Combined Environmental Groups	Mr Warwick Moss, Dr Stuart Blanch
Coastal Valleys Customer Service Committee	Mr Bob Doyle, Mr Arthur Burns
Hunter Water Corporation	Mr Kevin Young, Mr Andrew Amos
Sydney Catchment Authority	Mr Richard Warner

APPENDIX 6 COMPLIANCE WITH INFORMATION REQUIREMENTS FROM LAST DETERMINATION

At the time of the last Determination the Tribunal indicated the information it required from DLWC to enable a medium term price path to be determined. This appendix lists those requirements and the Tribunal's assessment of DLWC's compliance with supplying the information.

Item	Tribunal's assessment of DLWC's compliance	Comment
General information		
1. Description of the scope of activities for State Water and each DLWC water related program.	Partial	State Water activities described.
2. Description of how ring fencing of costs and activities works within the DLWC.	Partial	Description provided but separately auditable accounts are not available and cannot be produced given current accounting systems.
3. Current organisational chart.	Full	Submission Appendix 1.
4. Description of how services are charged between related business units, ie transfer prices to and from State Water, where relevant.	Partial	Provided. PwC has quantified the nature of these services but greater formalisation is required.
5. DLWC's Corporate Plan and any documentation explaining its resource management role.	Partial	State Water does not have these plans in the sense commonly used. A high level Vision Mission type plan and KRA's have been provided. No documents explaining its resource management role.
6. Description of asset valuation methodology used for financial reporting and regulatory purposes, where different.	Full	Submission Table 2 MEERA valuation.
7. Description of cost allocation methodology.	Full	Submission section 4.
8. Review of progress in implementing the NSW Government's water reform agenda and its implications for operating and capital costs of water related activities.	Partial	Only a brief description in Submission section 1. ACIL has reported on this.
9. Review of implications of NCC review of NSW compliance with COAG water reforms.	Substantial	Only a brief description in Submission section 1. ACIL has reported on this.

Item	Tribunal's assessment of DLWC's compliance	Comment
Separation of State Water		
10. Copies of State Water's Operating Licence, Water Access Authority and Statement of Corporate Intent.	Partial	Draft Operating Authority Draft Access authority provided.
11. Clear accounting of the resource management activities recovered in the bill sent by the resource manager to State Water.	Substantial	Valley Accounts for 1999/2000 show details. However, this can only be done manually at year-end.
12. Clear separation in the operating licence of State Water's functions from the resource management functions.	Partial	Draft Operating Authority is referred to in submission.
13. Description of service agreements between DLWC and State Water.	Partial	Copies have been provided but about \$2m seems to be unaccounted for by service agreements. PWC has reported on this.
14. Review of degree to which any service agreements are contestable.	No	Review not carried out. State Water says no contestability is possible on the grounds none of these services can be obtained commercially.
Customer service		
15. Description of recent improvements in customer service.	Full	Submission Appendix 2.
16. Copy of a Customer Service Charter negotiated with a customer service committee.	Partial	Still being developed. Copy of pro-forma provided.
17. Review of the billing system and any steps taken to improve it.	Full	Submission Appendix 2.
18. Copy of State Water's complaints protocol (and any similar documentation for DLWC).	Full	Submitted separately.
19. Copy of current customer satisfaction surveys.	Substantial	Full details of the last survey in April 1999 provided, next survey is in June 2002.
20. Description of processes for consultation with user groups and other stakeholders on regional/valley accounting, and negotiation of service levels, where appropriate.	Substantial	Description of the processes are provided but concerns remain about how they are implemented.

Item	Tribunal's assessment of DLWC's compliance	Comment
Financial information		
21. Financial statements for State Water including: <ul style="list-style-type: none"> • profit and loss account – audited previous year, current and 5 year forecast • balance sheet – audited previous year, current and 5 year forecast • cash flow – audited previous year, current and 5 year forecast • capital expenditure forecasts – 30 years • debt and interest profiles – plus 10-year forecasts. 	Substantial	Valley Profit and loss accounts provided in Appendix 2. Balance sheet – 3 year projections only provided separately. Separate detailed TAMP, summary in submission Appendix 4. DLWC / State Water has no debt.
Capital costs		
22. Copy of current Total Asset Management Plan.	Full	
23. Description of how future capital works are affected by dam risk assessments and current or potential environmental flow rules.	Substantial	Described in section 4 of Submission and TAMP.
24. Description of asset value for the current review, tracing additions to initial capital base since the last review.	Substantial	Described in section 4 of Submission. Spreadsheets provided separately.
25. The requested rate of return and calculations that support this request.	Partial	Basis of claim stated but calculations not provided.
26. Depreciation expense by major asset class for those capital items excluded from the asset annuity, indicating the method of depreciation, average asset life, and a comparison of depreciation expense for tax or tax equivalent purposes.	Substantial	Underlying details for tax purposes not provided.
27. Evidence that MDBC asset annuity is based on engineering assessments of asset conditions and financial calculations from asset plans.	Partial	Some MDBC details have been provided. However, both PWC and ACIL have reviewed in detail.
Operating costs		
28. Audited special purpose valley financial statements for years 1999/00 and 2000/01.	Partial	Unaudited statements are provided in Submission Appendix 2.
29. Staff numbers by valley/region by year.	Full	Provided separately.
30. Wages and salaries by valley/region by year.	Full	Provided separately.

Item	Tribunal's assessment of DLWC's compliance	Comment
31. Total overhead costs prepared on an accruals basis.	Full	Provided separately.
32. Assigned corporate overheads, indicating the total amount of the corporate overhead, the amount assigned to each valley/region, and the basis and calculation of that allocation.	Substantial	Embedded in the underlying models provided separately. Some problems with consistency of application.
33. Separate identification of costs charged by the Murray Darling Basin Commission (MDBC) and any associated MDBC water business, and description of associated works.	Substantial	Much information has been made available to IPART and the consultants separately. Both PwC and ACIL have reviewed in detail.
34. Description and measurement of efficiency improvements since the last review, and targets for the proposed price path period.	Partial	Details tracking levels of service have been provided but the nature of the efficiency savings is not documented. In areas where the Tribunal's previously determined cost savings of 20 per cent were not achieved, the proposed costs have been adjusted down to reflect this.
35. Results of any internal benchmarking between regions/valleys and externally with other utilities.	No	Will only be available in June 2002. PwC performed 'desktop' internal benchmarking in its review.
Performance measures and operating statistics		
36. Description of performance management system and efficiency measures.	Partial	Some areas show compliance (eg the TAMP for Asset Management KPA) while other areas show less compliance (eg no customer charter for the Customer Service KPA).
37. Number of customer complaints by year (where available), by water source and major category (eg service quality, problems, prices too high, tariff structures).	Partial	Some statistics provided separately. DLWC enquiry system is being revised.
38. Map of river network showing dams, weirs, and any other regulatory structure.	Full	Provided separately.
39. Profile of water use on regulated rivers for the past five years and projections for the coming year, showing water use in each regulated river broken into allocation water, off-allocation water and high flow usage.	Partial	Some details provided. ACIL's further consultancy is reviewing this.

Item	Tribunal's assessment of DLWC's compliance	Comment
40. Description of the method used to determine water allocations on regulated rivers and any relevant changes to this method in the preceding five years or over the proposed price path.	No	
41. Description of water use on unregulated rivers and projections over proposed price path by region/valley, and description of methods used to permit or restrict water usage.	Partial	Some information in models. Future information should be better after metering program is completed.
42. Profile of water use from ground water sources by valley/region over the preceding five years (differentiating management and non-management areas) and projections over the proposed price path, and description of the system for determining allocations.	Partial	Some historical information in models. Projections over the proposed price path not clearly identifiable.
Proposed prices and tariff reform		
43. Requested revenue as developed from these inputs.	Full	Provided in submission and separately.
44. Proposed prices, describing the current prices, and proposed changes over the requested price path.	Full	Provided in submission and separately.
45. Revenue analysis, indicating the amounts of revenue derived from each valley/region by year, by water source.	Substantial	Revenue figures provided for 2003/04 in submission, other years provided separately.
46. Description of the method used to derive proposed prices and major drivers in the application of that method.	Full	Provided separately.
47. Pricing models, updated for changes to licence system and water usage data.	Substantial	Provided separately.
48. Description of actions taken to rationalise existing tariffs and licensing system to overcome charging anomalies (eg Macquarie Generation, industrial water use, town water supply, recreational, high flow).	Substantial	Information in section 5 of submission.
49. Description and review of the method used to determine premiums for high security water use.	Partial	Some information in section 5 of submission.
50. Review of the existing proportions of fixed and usage charges.	Partial	Some information in section 5 of submission.

Item	Tribunal's assessment of DLWC's compliance	Comment
51. Review of the cost-reflectivity of high security premiums.	No	
52. Review of the existing discounts on wholesale access fees and the commercial viability of charging arrangements with these wholesale customers, including any legislative obstacles to charging for system losses.	Partial	Some information in section 5 of submission. No changes are proposed to the current system.
53. Comparison of existing and proposed prices with bulk water prices in Queensland, Victoria and any other relevant jurisdictions.	Full	Provided separately.
Impact analysis		
54. Description of the impact of proposed prices on typical bills for water users by water source.	Partial	Section 6 of submission and separate information provides percentage changes in total but no details.
55. Assessment of the financial impact of proposed prices on typical water users by region/valley.	Partial	Department of Agriculture report on the Peel and Lachlan valleys and gross margin analysis provided.
56. Assessment of the socio-economic impact of proposed prices by region/valley.	Partial	Department of Agriculture report on the Peel and Lachlan valleys and gross margin analysis provided.
Licence fees and other miscellaneous charges		
57. A schedule of licence fees and identification of any changes over the past three years.	Full	Provided separately.
58. Review of licensing administration processes and efficiency levels.	No	Not provided for this review. No changes proposed.
59. Description of any changes proposed to licensing administration and fees and the time frame for this.	Full	No changes proposed.
60. A schedule listing other miscellaneous charges levied by the DLWC or State Water.	Full	No changes proposed to list in the 1997 IPART Determination (Appendix 3).
61. Revenues raised from each of those miscellaneous charges, by year.	Substantial	Provided separately in DLWC models.
62. Description of any actions to develop fee-for-service charging for access to DLWC's information database.	No	Not addressed in the submission.
63. Separate identification of resource management actions and costs attributed to metropolitan water authorities and any other 'large' customers.	Partial	Some information gained from separate meeting with SCA and DLWC.

APPENDIX 7 EFFECTIVE PRICES OF LOW AND HIGH SECURITY ENTITLEMENTS BASED ON LONG-RUN AVERAGE ALLOCATION IN REGULATED RIVERS

The effective High and Low Security Entitlement Charges for the Hunter and Peel Valleys have been calculated by using DLWC's long term average cap estimates and subtracting the long-run average high security usage from the cap estimates to determine the average amount of water available to low security users.

For all the other inland valleys long-run average high security usage figures were not available from DLWC. In these cases the High Security Entitlement figure was used as a proxy. This underestimates the amount of water available to low security users and thus over-estimates the effective low security entitlement charge in these valleys. This only serves to make the conclusions about the Peel Valley more robust.

DLWC has not yet modelled long term average cap estimates for the North Coast and South Coast. Estimates for the cap have been calculated assuming that the cap is the same percentage of the Total Entitlements as for the Hunter Valley. Long-run average high security usage figures for the North Coast and South Coast valley were also not available so they have been treated in the same way as the inland valleys. This overestimates the relative problem in these two valleys.

It can be seen from the table (column 13) that the relative high and low security entitlement charges are unlikely to be cost reflective. DLWC has also indicated some concern about this problem and intends to address this issue over the course of this Determination. Nevertheless it is apparent that there is a particular problem with the Peel Valley.

The numbers in this table for the Peel Valley have already been calculated using the 2000/01 low security entitlement charge.

Column 14 highlights the level of cost recovery in all valleys when both the high and low security users are charge the respective valley Low Security Entitlement Charge.

Table A7.1 Effective Prices of Low and High Security Entitlements based on long-run average allocation in Regulated Rivers

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Valley/Region	H/S Entitlement (mL)	L/S Entitlement (mL)	Total Entitlements (mL)	Cap Estimates (mL)	H/S Entitlements % of Total Cap	H/S Entitlement Charge (2001/02)	L/S Entitlement Charge (2001/02)	H/S Long Run Average Allocation	L/S Long Run Average Allocation	Effective Price H/S Entitlement	Effective Price L/S Entitlement	% by which the Effective L/S Price exceeds the Effective H/S Price	Cost recovery if all entitlement charged at Effective LS price
Murray	242877	2078314	2321191	1871000	12.98%	\$4.51	\$4.09	12.98%	87.02%	\$4.51	\$5.22	16%	107%
Murrumbidgee	293613	2015951	2309564	2002000	14.67%	\$3.54	\$3.36	14.67%	85.33%	\$3.54	\$3.96	12%	95%
Lachlan	49606	622693	672299	319000	15.55%	\$5.62	\$3.74	15.55%	84.45%	\$5.62	\$8.64	54%	157%
Macquarie	36184	635269	671453	443000	8.17%	\$4.24	\$3.26	8.17%	91.83%	\$4.24	\$5.09	20%	138%
Namoi	8161	255826	263987	233000	3.50%	\$8.17	\$5.45	3.50%	96.50%	\$8.17	\$6.20	-24%	89%
Gwydir	16964	510359	527323	334000	5.08%	\$4.52	\$3.00	5.08%	94.92%	\$4.52	\$4.83	7%	116%
Border	2750	260656	263406	188000	1.46%	\$4.87	\$3.26	1.46%	98.54%	\$4.87	\$4.59	-6%	103%
Hunter	40000	129266	169266	78000	51.28%	\$6.16	\$4.40	51.28%	48.72%	\$6.16	\$14.97	143%	85%
Peel	8000	31063	39063	12000	66.67%	\$8.66	\$5.02	66.67%	33.33%	\$8.66	\$38.98	350%	237%
North Coast	5	6171	6176	2470.4	0.20%	\$7.88	\$6.06	0.20%	99.80%	\$7.88	\$15.17	92%	20%
South Coast	836	14320	15156	6062.4	13.79%	\$7.88	\$6.06	13.79%	86.21%	\$7.88	\$16.60	111%	60%

APPENDIX 8 ACIL COST SHARES

The resulting overall cost shares, at a product level, as derived by ACIL in their Review of Water Resource Management Costs are shown below.⁴⁰

Table A8.1 Implied user shares, aggregating up from the sub-product level - different allocation rules (%)

Code	ProductName	Current	2001/02 to 2003/4					
		IPART 1998/99	Proposed DLWC (a)	Legacy Share	Impacter 0% Legacy	Impacter 25% Legacy	Beneficiary 0% Legacy	Beneficiary 50% Legacy
PA1	Surface Water Database	50%	50%	7%	65%	67%	37%	41%
PA2	Groundwater Database	70%	70%	0%	100%	100%	100%	100%
PA3	Other Water Databases	0%	0%	0%	0%	0%	0%	0%
PA4	Water Information Product	0%	0%	25%	50%	56%	19%	31%
PB1	Surface Water Allocation Strategies	50%	50%	0%	100%	100%	0%	0%
PB2	Surface Water Licences	100%	100%	0%	100%	100%	90%	90%
PB3	Groundwater Allocation Strategies	70%	70%	0%	100%	100%	70%	70%
PB4	Groundwater Licences	100%	100%	0%	100%	100%	90%	90%
PC1	Rural Water Supply Strategies	90%	90%	0%	100%	100%	80%	80%
PC2	Rural Water Operations	90%	90%	0%	100%	100%	90%	90%
PC3	Flood Operations	50%	50%	91%	6%	29%	0%	46%
PC4	Rural Water Infrastructure	90%	90%	16%	80%	84%	76%	84%
PD1	River Quality / Flow Reforms	0%	50%	18%	39%	43%	0%	9%
PD2	Blue Green Algae Strategies	50%	50%	1%	89%	89%	0%	1%
PD3	River Salinity Strategies	50%	50%	50%	10%	22%	0%	25%
PD4	Bacterial, Chemical and Other Strategies	0%	0%	0%	100%	100%	0%	0%
PD5	Groundwater Strategies	70%	70%	0%	100%	100%	100%	100%
PD6	Wetland Strategies	0%	0%	50%	50%	62%	0%	25%
PD7	Water Industry Strategies	0%	0%	0%	0%	0%	50%	50%
PE1	Rivers and Groundwater Income	0%	100%	0%	100%	100%	100%	100%
	Total	N/A	68%	22%	64%	70%	49%	60%
Notes:								
(a) The total in this column is an amount calculated by allocating DLWC proposed shares to the revised costs, it is not a DLWC proposed share.								

Note:

A detailed allocation of user-shares at the sub-product level is presented in Appendix 5 of the ACIL report 'Review of Water Resource Management Expenditure in the NSW Department of Land and Water Conservation and State Water Business 31 July 2001'. This report is available at the Tribunals website: www.ipart.nsw.gov.au/current.htm#bulk01

⁴⁰ ACIL, *Review of water resource management expenditure in the NSW Department of Land and Water Conservation*, July 2001, p 54.

Table A8.2 Implied user shares, aggregating up from the sub-product level - different allocation rules (\$)

Code	ProductName	Current	2001/02 to 2003/4					
		IPART 1998/99	Proposed DLWC (a)	Legacy Share	Impacter 0% Legacy	Impacter 25% Legacy	Beneficiary 0% Legacy	Beneficiary 50% Legacy
PA1	Surface Water Database	50%	\$4,649,204	\$676,106	\$6,038,699	\$6,207,726	\$3,476,119	\$3,814,173
PA2	Groundwater Database	70%	\$1,793,674	\$0	\$2,562,391	\$2,562,391	\$2,562,391	\$2,562,391
PA3	Other Water Databases	0%	\$0	\$0	\$0	\$0	\$0	\$0
PA4	Water Information Product	0%	\$0	\$280,396	\$560,792	\$630,891	\$210,297	\$350,495
PB1	Surface Water Allocation Strategies	50%	\$1,850,683	\$0	\$3,701,366	\$3,701,366	\$0	\$0
PB2	Surface Water Licences	100%	\$2,677,704	\$0	\$2,677,704	\$2,677,704	\$2,409,933	\$2,409,933
PB3	Groundwater Allocation Strategies	70%	\$310,347	\$0	\$443,352	\$443,352	\$310,347	\$310,347
PB4	Groundwater Licences	100%	\$324,656	\$0	\$324,656	\$324,656	\$292,191	\$292,191
PC1	Rural Water Supply Strategies	90%	\$1,107,436	\$0	\$1,230,484	\$1,230,484	\$984,387	\$984,387
PC2	Rural Water Operations	90%	\$9,294,173	\$0	\$10,326,859	\$10,326,859	\$9,294,173	\$9,294,173
PC3	Flood Operations	50%	\$7,277,310	\$13,296,044	\$909,538	\$4,233,549	\$0	\$6,648,022
PC4	Rural Water Infrastructure	90%	\$30,497,998	\$5,421,933	\$26,947,370	\$28,302,853	\$25,678,462	\$28,389,429
PD1	River Quality / Flow Reforms	0%	\$5,618,135	\$2,035,955	\$4,360,421	\$4,869,410	\$0	\$1,017,977
PD2	Blue Green Algae Strategies	50%	\$331,295	\$7,305	\$588,012	\$589,839	\$0	\$3,652
PD3	River Salinity Strategies	50%	\$850,710	\$850,710	\$170,142	\$382,819	\$0	\$425,355
PD4	Bacterial, Chemical and Other Strategies	0%	\$0	\$0	\$87,355	\$87,355	\$0	\$0
PD5	Groundwater Strategies	70%	\$2,939,576	\$0	\$4,199,394	\$4,199,394	\$4,199,394	\$4,199,394
PD6	Wetland Strategies	0%	\$0	\$363,690	\$363,690	\$454,613	\$0	\$181,845
PD7	Water Industry Strategies	0%	\$0	\$0	\$0	\$0	\$664,816	\$664,816
PE1	Rivers and Groundwater Income	0%	\$231,607	\$0	\$231,607	\$231,607	\$231,607	\$231,607
	Total	N/A	\$69,754,507	\$22,932,139	\$65,723,833	\$71,456,868	\$50,314,117	\$61,780,187
	Total as Percentage		68%	22%	64%	70%	49%	60%

Notes:

(a) This is an amount calculated by allocating DLWC proposed shares to the revised costs, it is not a DLWC proposed amount.

APPENDIX 9 'REPRESENTATIVE' FARMS IN NSW AGRICULTURE'S PEEL AND LACHLAN VALLEY STUDIES

The following tables report the results of NSW Agriculture's studies of the impacts of increased water charges on irrigation farming in the Peel and Lachlan valleys respectively. The prices used in the studies achieve DLWC's initial estimates of full cost recovery in 2003/04. Note that these prices are significantly higher than those set by the Tribunal (see Table 9.2).

Table A9.1 The financial impacts of the proposed increase in the price of bulk water on 'representative' farms in the Peel Valley

	Node 21	Node 22	Node 20	Node 23
Physical characteristics				
Irrigated Area (Ha)	24	35	37	50
Farm Size (Ha)	78	111	151	502
Irrigated area as % total area	31%	32%	25%	10%
Water allocation(ML)	126	314	253	471
Water use (ML)	65	86	103	184
ML/Ha irrigated land	2.7	2.5	2.8	3.7
Primary activities	Irrigated lucerne, dryland wheat and livestock			
Financial impacts				
Total water costs as % total farm costs, 1999/00	2.0%	3.5%	2.6%	2.2%
Total water costs as % total farm costs, 2003/04	5.9%	9.8%	7.4%	6.5%
Net farm income 1999/00 ¹	13,505	13,289	29,943	28,635
Net farm income 2003/04	11,742	9,713	26,702	22,692
% change in net farm income	-13%	-27%	-11%	-21%
Business return 1999/00 ²	2,378	1,680	17,762	11,395
Business return 2003/04	615	-1,896	14,521	5,434
% change in business return	-74%	-213%	-18%	-52%
Return on equity 1999/00 ³	0.7%	0.4%	4.6%	1.7%
Return on equity 2003/04	0.2%	-0.5%	3.8%	0.8%

Source:

Economic Assessment of Water Charges in the Peel Valley. Report to the Department of Land and Water Conservation. Jason Crean, Fiona Scott and Anthea Carter, NSW Agriculture, July 2000.

Notes:

1. Net farm income = income less variable and overhead costs.
2. Business return = net farm income less farmer's labour (valued at base level of \$10,000), interest and rent on leases.
3. Return on equity = ratio of business return to equity.

Table A9.2 The financial impacts of the proposed increase in the price of bulk water on 'representative' farms in the Lachlan Valley

	Zone 1	Zone 2	Zone 3 Large farm	Zone 3 Small farm	Zone 5	Zone 4
Physical characteristics						
Irrigated Area (Ha)	110	160	200	200	350	550
Farm Size (Ha)	304	800	5,000	1,000	2,000	7,500
Irrigated area as % total area	36%	20%	4%	20%	18%	8%
Water allocation(ML)	600	1,000	972	972	1,400	4,000
Water use (ML)	454	509	525	731	1,353	4,838 ³
ML/Ha irrigated land	4.1	3.2	2.6	3.7	3.9	8.8
Farming activities						
Irrigated activities	lucerne, wheat, canola	lucerne, wheat, canola, pasture	wheat, oats, pasture	lucerne, wheat, oats, pasture	wheat, canola, maize, pasture	wheat, cotton, maize, pasture
Dryland activities	above and pasture, sheep	above and sheep, cattle	above and canola, sheep, cattle	wheat, canola, sheep, cattle	above and oats, sheep, cattle	wheat, pasture, sheep, cattle
Financial impacts						
Total water costs as % total farm costs, 1999/00	1.8%	1.5%	1.0%	2.3%	1.7%	2.9%
Total water costs as % total farm costs, 2003/04	3.0%	2.4%	1.6%	3.8%	2.8%	4.7%
Net farm income 1999/00 ¹	39,247	63,276	90,489	51,761	28,750	240,844
Net farm income 2003/04	36,893	60,003	87,227	47,959	23,188	220,408
% change in net farm income	-6%	-5%	-4%	-7%	-19%	-8%
Business return 1999/00 ²	-3,303	8,576	7,989	13,661	-3,000	167,494
Business return 2003/04	-5,657	5,303	4,727	9,859	-8,562	147,058
% change in business return	-71%	-38%	-41%	-28%	-185%	-12%

Source:

Economic Assessment of Water Charges in the Lachlan Valley. Report to the Department of Land and Water Conservation.

Rohan Jayasuriya, Jason Crean and Rendle Hannah, NSW Agriculture, February 2001.

Notes:

1. Net farm income = income less variable and overhead costs.
2. Business return = net farm income less farmer's labour, interest and rent on leases.
3. Return on equity = ratio of business return to equity.

APPENDIX 10 COST TABLES

Table A10.1 Opex

	Regulated		Unregulated		Groundwater		Total	
	Total	User share	Total	User share	Total	User share	Total	User share
Border	1,103	1,012	72	72	16	16	1,192	1,100
Gwydir	2,034	1,671	46	46	79	79	2,159	1,795
Namoi	2,157	1,964	72	72	139	139	2,369	2,175
Peel	579	522	53	53	56	56	688	631
Lachlan	3,329	3,046	81	81	75	75	3,485	3,202
Macquarie	2,652	2,292	247	246	13	13	2,912	2,551
Far West	-	-	184	183	6	6	190	188
Murray	5,962	4,999	62	62	110	110	6,133	5,171
Murrumbidgee	5,806	4,837	139	139	43	43	5,988	5,019
North Coast	313	244	645	643	24	24	982	911
Hunter	2,485	2,168	426	424	12	12	2,923	2,604
South Coast	314	268	570	566	19	19	903	853
Total	26,736	23,024	2,598	2,587	591	591	29,925	26,201

Table A10.2 WRM

	Regulated		Unregulated		Groundwater		Total	
	Total	User share	Total	User share	Total	User share	Total	User share
Border	1,071	676	202	126	104	101	1,377	903
Gwydir	1,327	818	132	81	195	192	1,655	1,090
Namoi	1,402	846	694	388	973	967	3,069	2,201
Peel	215	139	19	12	280	279	514	430
Lachlan	1,854	934	551	308	506	502	2,910	1,744
Macquarie	1,543	785	621	336	697	692	2,861	1,813
Far West	-	-	1,602	1,025	1,022	1,018	2,624	2,042
Murray	5,203	2,722	288	191	606	602	6,096	3,515
Murrumbidgee	4,293	2,108	588	290	1,270	1,268	6,151	3,665
North Coast	139	77	3,442	1,882	481	463	4,061	2,422
Hunter	2,191	1,388	994	698	554	546	3,738	2,631
South Coast	103	69	5,284	2,198	807	801	6,194	3,068
Total	19,340	10,562	14,416	7,534	7,494	7,429	41,251	25,525

Table A10.3 Total Capital Costs for the year 2003/04 (Post ANTS 2001/02 \$'000)

Post ANTs 2001/02 \$'000	State Water Renewals Annuity	State Water Compliance Annuity	MDBC Assets Renewal	MDBC Assets Compliance	DBBRC Assets Annuity	DLWC & State Water Depreciation Charges	State Water Return on Capital	Total Asset Costs
Regulated River								
Border	142	14	-	-	83	-	-	239
Gwydir	772	2,629	-	-	-	4	-	3,406
Namoi	412	3,080	-	-	-	6	-	3,498
Peel	104	649	-	-	-	0	-	753
Lachlan	496	1,188	-	-	-	14	-	1,698
Macquarie	945	1,290	-	-	-	1	-	2,237
Far West	-	-	-	-	-	-	-	-
Murray	395	473	3,093	2,000	-	37	-	5,999
Murrumbidgee	1,296	1,423	684	690	-	20	-	4,113
North Coast	152	95	-	-	-	0	-	247
Hunter	528	601	-	-	-	0	-	1,129
South Coast	99	12	-	-	-	0	-	112
Total	5,341	11,456	3,777	2,690	83	82	-	23,430
Unregulated River								
Border	1	0	-	-	-	-	-	1
Gwydir	-	-	-	-	-	-	-	-
Namoi	-	-	-	-	-	-	-	-
Peel	-	-	-	-	-	-	-	-
Lachlan	1	-	-	-	-	-	-	1
Macquarie	9	0	-	-	-	-	-	9
Far West	91	2	-	-	-	-	-	93
Murray	1	-	-	-	-	-	-	1
Murrumbidgee	11	5	-	-	-	-	-	16
North Coast	25	1	-	-	-	-	-	26
Hunter	2	2	-	-	-	-	-	4
South Coast	15	3	-	-	-	-	-	18
Total	155	13	-	-	-	-	-	169
Groundwater								
Border	-	-	-	-	-	15	-	15
Gwydir	-	-	-	-	-	69	-	69
Namoi	-	-	-	-	-	399	-	399
Peel	-	-	-	-	-	2	-	2
Lachlan	-	-	-	-	-	190	-	190
Macquarie	-	-	-	-	-	138	-	138
Far West	-	-	-	-	-	174	-	174
Murray	-	-	-	-	-	126	-	126
Murrumbidgee	-	-	-	-	-	281	-	281
North Coast	-	-	-	-	-	29	-	29
Hunter	-	-	-	-	-	12	-	12
South Coast	-	-	-	-	-	39	-	39
Total	-	-	-	-	-	1,474	-	1,474

**Table A10.4 Total Capital Costs allocated to users for the year 2003/04
(Post ANTS 2001/02 \$'000)**

Post ANTs 2001/02 \$'000	State Water Renewals Annuity	State Water Compliance Annuity	MDBC Assets Renewal	MDBC Assets Compliance	DBBRC Assets Annuity	DLWC & State Water Depreciation Charges	State Water Return on Capital	Total Asset Costs
Regulated River								
Border	122	8	-	-	71	-	-	201
Gwydir	582	253	-	-	-	3	-	838
Namoi	359	268	-	-	-	5	-	633
Peel	88	56	-	-	-	0	-	145
Lachlan	426	222	-	-	-	12	-	659
Macquarie	733	142	-	-	-	1	-	876
Far West	-	-	-	-	-	-	-	-
Murray	302	185	2,366	781	-	28	-	3,663
Murrumbidgee	1,014	350	535	170	-	16	-	2,085
North Coast	111	34	-	-	-	0	-	145
Hunter	435	171	-	-	-	0	-	606
South Coast	78	6	-	-	-	0	-	84
Total	4,250	1,696	2,902	951	71	65	-	9,934
Unregulated River								
Border	1	0	-	-	-	-	-	1
Gwydir	-	-	-	-	-	-	-	-
Namoi	-	-	-	-	-	-	-	-
Peel	-	-	-	-	-	-	-	-
Lachlan	1	-	-	-	-	-	-	1
Macquarie	7	0	-	-	-	-	-	7
Far West	80	1	-	-	-	-	-	81
Murray	1	-	-	-	-	-	-	1
Murrumbidgee	8	1	-	-	-	-	-	10
North Coast	18	1	-	-	-	-	-	19
Hunter	2	0	-	-	-	-	-	2
South Coast	12	1	-	-	-	-	-	13
Total	129	5	-	-	-	-	-	134
Groundwater								
Border	-	-	-	-	-	13	-	13
Gwydir	-	-	-	-	-	52	-	52
Namoi	-	-	-	-	-	348	-	348
Peel	-	-	-	-	-	2	-	2
Lachlan	-	-	-	-	-	163	-	163
Macquarie	-	-	-	-	-	107	-	107
Far West	-	-	-	-	-	153	-	153
Murray	-	-	-	-	-	96	-	96
Murrumbidgee	-	-	-	-	-	220	-	220
North Coast	-	-	-	-	-	21	-	21
Hunter	-	-	-	-	-	10	-	10
South Coast	-	-	-	-	-	31	-	31
Total	-	-	-	-	-	1,216	-	1,216

Table A10.5 Total Cost of Bulk Water Business (Post ANTS 2001/02 \$'000)

	Regulated		Unregulated		Groundwater		Total	
	DLWC sub	Decision	DLWC sub	Decision	DLWC sub	Decision	DLWC sub	Decision
Border	2,989	2,413	244	276	129	135	3,362	2,824
Gwydir	7,091	6,767	173	178	303	343	7,568	7,289
Namoi	7,441	7,058	774	767	1,429	1,511	9,644	9,335
Peel	1,942	1,547	29	72	301	339	2,272	1,958
Lachlan	8,237	6,881	580	633	770	770	9,586	8,284
Macquarie	8,115	6,432	746	878	844	847	9,706	8,157
Far West	123	-	2,028	1,879	1,379	1,202	3,531	3,081
Murray	19,542	17,163	342	350	847	842	20,730	18,355
Murrumbidgee	13,113	14,213	657	743	1,597	1,595	15,367	16,550
North Coast	775	699	4,235	4,113	533	533	5,542	5,345
Hunter	5,606	5,805	1,455	1,424	574	577	7,635	7,806
South Coast	657	529	6,086	5,871	859	865	7,602	7,265
Total	75,632	69,506	17,348	17,183	9,565	9,559	102,544	96,248

Table A10.6 Total Cost of Bulk Water business allocated to users (Post ANTS 2001/02 \$'000)

	Regulated		Unregulated		Groundwater		Total	
	DLWC sub	Decision	DLWC sub	Decision	DLWC sub	Decision	DLWC sub	Decision
Border	2,176	1,889	143	200	94	130	2,413	2,218
Gwydir	4,783	3,326	104	127	231	323	5,118	3,776
Namoi	5,012	3,443	422	460	1,095	1,453	6,529	5,356
Peel	1,347	806	20	65	220	336	1,586	1,208
Lachlan	6,018	4,639	296	390	596	740	6,910	5,769
Macquarie	6,160	3,954	439	589	617	811	7,215	5,354
Far West	111	-	1,237	1,288	1,034	1,177	2,382	2,465
Murray	15,019	11,384	193	254	649	809	15,860	12,446
Murrumbidgee	9,591	9,030	341	438	1,220	1,531	11,152	10,999
North Coast	578	466	2,232	2,544	363	507	3,173	3,517
Hunter	4,152	4,162	931	1,124	401	568	5,483	5,853
South Coast	543	422	2,843	2,778	622	850	4,008	4,049
Total	55,489	43,520	9,201	10,255	7,139	9,235	71,829	63,010



INDEPENDENT PRICING AND REGULATORY TRIBUNAL
OF NEW SOUTH WALES

DETERMINATION UNDER SECTION 11 OF
THE INDEPENDENT PRICING AND REGULATORY TRIBUNAL ACT, 1992

- Reference No:** 01/248
- Determination:** No 3, 2001
- Agency:** The Water Administration Ministerial Corporation (the Department of Land and Water Conservation)
- Services:** Any services provided by the Water Administration Ministerial Corporation, to the extent that the service involves:
- (a) making water available; or
 - (b) making available the Corporation's supply facilities; or
 - (c) supplying water, whether by means of the Corporation's water supply facilities or otherwise.

The Government monopoly services were declared by the Government Pricing Tribunal (Water Services) Order 1995, made on 4 October 1995 and published in the Gazette No. 122 dated 6 October 1995 at page 7115.

The maximum prices listed under Parts 3, 4, 5 and 7 of this Determination are to apply from 1 October 2001 to 30 June 2004. After 30 June 2004, the maximum prices set under Parts 3, 4, 5 and 7 of this determination for the year 2003/2004 shall apply until the Tribunal makes a subsequent determination. Part 6 of this Determination concerning licence fees shall apply until such time as the Tribunal further investigates and reports on the pricing policies for the new licensing regime proposed to be introduced under the *Water Management Act 2000*.

PART 1 PREAMBLE

- 1.1 The Water Administration Ministerial Corporation (WAMC) is the statutory entity created to carry out the Department of Land and Water Conservation's (DLWC) commercial functions and as such can enter into commercial arrangements in relation to bulk water.
- 1.2 On 14 September 2001, the WAMC was listed as a government agency in Schedule 1 of the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act). As such the WAMC is now a standing reference agency under section 11 of the IPART Act. The Tribunal may conduct investigations and make reports to the Minister in relation to determinations of the maximum prices of the declared monopoly services of WAMC.
- 1.3 In making this determination, the Tribunal has in accordance with section 13A of the IPART Act set the maximum bulk water charges for each year of the determination for the right to extract water:
- on regulated rivers
 - on unregulated rivers
 - from ground water.

PART 2 DEFINITIONS AND INTERPRETATION

2.1 Definitions

In this determination:

CPI has the meaning set out in Schedule 1.

DLWC means the Department of Land and Water Conservation.

entitlement means the right, conferred by means of a water licence, to take and use a specified quantity of water.

general security licence means a water licence issued by DLWC as a general security licence.

ground water means water accessed from an aquifer or other below-ground water source.

ground water management area means an area which DLWC has designated as a ground water management area, and for which DLWC has a current management plan in place.

high flow licence means a water licence issued by DLWC as a high flow licence.

high security licence means a water licence issued by DLWC as a high security licence.

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

region means a region of NSW as determined by DLWC from time to time for the purpose of issuing a water licence under Part 2 Division 3 of the *Water Act, 1912*.

regulated river means a river in which the flow of water is actively controlled by a structure owned by WAMC and which is declared to be a regulated river.

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

unregulated river means any river in NSW that is not a regulated river.

water licence means a licence issued under the *Water Act, 1912* to which this determination applies by virtue of the Government Pricing Tribunal (Water Services) Order 1995.

water management licence is a water licence issued under Part 9 of the *Water Act, 1912*.

WAMC means the Water Administration Ministerial Corporation.

2.2 Interpretation

2.2.1 In this determination references to types of water licence have the same meaning as provided in the *Water Act 1912*, *the Water Management Act 2000* and guidelines issued by DLWC from time to time, as the case may be.

2.2.2 A schedule means a schedule to this determination.

2.2.3 In interpreting this determination, a construction that promotes the purpose or object underlying the IPART Act (whether or not that purpose or object is expressly stated in the IPART Act) is preferred to a construction that would not promote that purpose or object.

PART 3 REGULATED RIVERS

3.1 Pricing components

3.1.1 The maximum charge to extract water from a regulated river under a water licence comprises two components:

- (a) an entitlement charge (at the high security or general security level, depending on whether the licence is a high security licence or a general security licence) and
- (b) a usage charge,

corresponding to the region or river valley for which the licence is issued.

3.2 Approach for calculating the maximum charge

3.2.1 Subject to this determination the maximum charge to extract water from a regulated river under a water licence is:

- (a) for the period 1 October 2001 to 30 June 2002 – the charge listed in Division 1 of Table 1
- (b) for the period 1 July 2002 to 30 June 2003 – the charge calculated under clause 3.2.3
- (c) from the period 1 July 2003 to 20 June 2004 - the charge calculated under clause 3.2.4.

3.2.2 The charges for the period 1 October 2001 to 30 June 2002 are to be implemented as set out in Schedule 2.

3.2.3 The maximum for each component of charges for the period from 1 July 2002 to 30 June 2003 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_1 \text{ where}$$

A = the maximum charge determined by this formula

B = the maximum charge listed in division 1 of Table 1

X = the percentage increase listed in division 2 of Table 1

CPI₁ is defined in Schedule 1.

3.2.4 The maximum charge for each component of charges for the period from 1 July 2003 to 30 June 2004 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_2 \text{ where}$$

A = the maximum charge determined by this formula

B = the maximum charge determined from the application of the formula in clause 3.2.3

X = the percentage increase listed in division 3 of Table 1

CPI₂ is defined in Schedule 1.

3.2.5 The maximum price that may be charged for high flow extraction under a high flow licence will be the usage charge in Table 1 (adjusted by application of the formula in clauses 3.2.3 and 3.2.4) corresponding to the region or river valley in which the licence was issued.

3.2.6 Each component of the entitlement charge payable by a licence holder in Table 2 is reduced by the applicable discount listed in that table.

Table 1 Charges for regulated rivers

	<i>Division 1</i>		<i>Division 2</i>	<i>Division 3</i>	
	Maximum charges for 1 October 2001 to 30 June 2002			% increases for 1 July 2002 to 30 June 2003	% increases for 1 July 2003 to 30 June 2004
Region/river valley	Entitlement charge (\$/ML of entitlement)		Usage charge (\$/ML)		
	High security	General security		X =	X =
Border	4.87	3.26	3.79	7.5%	7.5%
Gwydir	4.52	3.00	3.50	6.0%	6.0%
Namoi	8.17	5.45	6.52	8.5%	8.5%
Peel (HS entitlement)	8.66			15.0%	15.0%
Peel (GS entitlement)		5.02		0%	0%
Peel (Usage)			6.91	15.0%	15.0%
Lachlan	5.62	3.74	4.29	8.0%	8.0%
Macquarie	4.37	3.36	4.54	-3.0%	-3.0%
Far West	0.00	0.00	0.00		
Murray	4.51	4.09	1.10	8.0%	8.0%
Murrumbidgee	3.54	3.36	0.88	4.5%	4.5%
North Coast	7.88	6.06	4.04	15.0%	15.0%
Hunter	6.16	4.40	4.38	15.0%	15.0%
South Coast	7.88	6.06	4.04	15.0%	15.0%

**Table 2 Discounts on entitlement charges for wholesale customers for the period
1 October 2001 to 30 June 2004**

Licence holder	Discount on entitlement charges (%)
Murray Irrigation	40
Western Murray Irrigation	27
West Corurgan	35
Moira Irrigation Scheme	30
Eagle Creek Scheme	25
Murrumbidgee Irrigation	29
Coleambally Irrigation	32
Jemalong Irrigation	27

PART 4 UNREGULATED RIVERS

4.1 Pricing components

4.1.1 The basis for charging for the right to extract water from an unregulated river differs depending on whether a licence holder is an irrigator or a town water supply agency or an industrial customer.

4.1.2 WAMC may impose no more than the greater of the following charges on an irrigator who extracts water from an unregulated river:

- (a) the minimum charge in Table 4, adjusted in accordance with clause 4.2.6; or
- (b) the charge arising from the application of one of the following methods:
 - (i) a two part tariff consisting of an entitlement charge and a usage charge (or in the case of the holder of a high flow licence, only the usage charge component of the two part tariff); or
 - (ii) an area based charge; or
 - (iii) a volume of entitlement charge,

depending on the region or river valley where the licence is issued.

4.1.3 WAMC may impose no more than the greater of the following charges on a town water supply agency or an industrial customer (except for Hunter Water Corporation and Sydney Catchment Authority) that extracts water from an unregulated river:

- (a) the usage charge applicable only to town water supply agencies and industrial customers in Table 3 (adjusted in accordance with clauses 4.2.3 and 4.2.4), plus the base charge in Table 4 (adjusted in accordance with clause 4.2.5); or
- (b) a two part tariff consisting of an entitlement and usage charge for holders of licences who have been allocated an entitlement volume by DLWC.

4.2 Approach for calculating the maximum charge

4.2.1 The maximum charge that may be levied for the right to extract water under a water licence on unregulated rivers (except for Hunter Water Corporation and Sydney Catchment Authority) in each region or river valley of NSW is:

- (a) for the period 1 October 2001 to 30 June 2002 – the charge listed in division 1 of Table 3
- (b) for the period 1 July 2002 to 30 June 2003 – the charge calculated under clause 4.2.3
- (c) for the period 1 July 2003 to 30 June 2004- the charge calculated under clause 4.2.4.

4.2.2 The charges from 1 October 2001 to 30 June 2002 in Table 3 are to be implemented as set out in Schedule 2.

4.2.3 The maximum charge for the period 1 July 2002 to 30 June 2003 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_1 \text{ where}$$

A = the charge calculated under this formula

B = the maximum charge listed in division 1 of Table 3

X = the percentage increase listed in division 2 of Table 3

CPI₁ is defined in Schedule 1.

4.2.4 The maximum charge from the period 1 July 2003 to 30 June 2004 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_2$$

A = the charge calculated under this formula

B = the maximum charge determined from the application of the formula in clause 4.2.3

X = the percentage increase listed in division 3 of Table 3

CPI₂ is defined in Schedule 1.

Table 3 Charges for unregulated rivers

	<i>Division 1</i>				<i>Division 2</i>	<i>Division 3</i>	
	Maximum charges for 1 October 2001 to 30 June 2002				% increases for 1 July 2002 to 30 June 2003	% increases for 1 July 2003 to 30 June 2004	
Region/river valley	Area based charge (\$/ha)	Volume of entitlement charge (\$/ML)	Two-part tariff		Town water supply agencies and Industrial customers Usage (\$/ML)	X=	X=
			Entitlement (\$/ML)	Usage (\$/ML)			
Border	7.14	2.23	1.34	0.89	1.00	20%	20%
Gwydir	7.14	2.23	1.34	0.89	1.00	20%	20%
Namoi	7.14	2.23	1.34	0.89	1.00	20%	20%
Peel	7.14	2.23	1.34	0.89	1.00	20%	20%
Lachlan	7.90	1.79	1.08	0.72	1.09	20%	20%
Macquarie	7.90	2.63	1.58	1.05	1.09	20%	20%
Far West	7.90	1.21	0.73	0.49	1.09	20%	20%
Murray	4.50	1.80	1.08	0.72	0.56	20%	20%
Murrumbidgee	7.90	3.16	1.90	1.26	1.09	20%	20%
North Coast	7.90	2.39	1.44	0.96	1.09	20%	20%
Hunter	6.84	1.55	0.93	0.62	0.95	20%	20%
South Coast	7.90	1.75	1.05	0.70	1.09	20%	20%

- 4.2.5 For a town supply agency or an industrial customer not on a two part tariff the base charge for:
- (a) the period 1 October 2001 to 30 June 2002 is \$100.00 per licence
 - (b) the period 1 July 2002 to 30 June 2003 the base charge under clause 4.2.5(a) multiplied by CPI_1 , where CPI_1 is defined in Schedule 1
 - (c) the period 1 July 2003 to 30 June 2004 is the base charge calculated under clause 4.2.5 (b) multiplied by CPI_2 , where CPI_2 is defined in Schedule 1.
- 4.2.6 For irrigators the minimum charge for:
- (a) the period 1 October 2001 to 30 June 2002 is \$50.00
 - (b) the period 1 July 2002 to 30 June 2003 is the minimum charge under clause 4.2.6(a) multiplied by CPI_1 , where CPI_1 is defined in schedule 1
 - (c) the period 1 July 2003 to 30 June 2004 is the minimum charge calculated under clause 4.2.6 (b) multiplied by CPI_2 , where CPI_2 is defined in Schedule 1.

Table 4 Base charge for town and industrial users and minimum bills applicable to irrigators

	Maximum charges for 1 October 2001 to 30 June 2002 \$ per year	% increases for 1 July 2002 to 30 June 2003 X=	% increases for 1 July 2003 to 30 June 2004 X=
Base charge per licence for a town water supply agency and industrial customer not on the two-part tariff	100	0%	0%
Minimum bill applicable to irrigators	50	0%	0%

4.3 The maximum charges for the Sydney Catchment Authority and the Hunter Water Corporation to extract water from unregulated rivers.

4.3.1 Pricing component

The method of charging the Sydney Catchment Authority (SCA) and the Hunter Water Corporation (HWC) to extract water from an unregulated river under a water management licence is a usage charge based on per megalitre of water used.

4.3.2 Approach for calculating the maximum charge

The maximum charge that may be levied for SCA and HWC to extract water from an unregulated river under a water management licence is set out in Table 5 and Table 6 respectively.

Table 5 Maximum charges for Sydney Catchment Authority

Maximum charges for 1 October 2001 to 30 June 2002 (\$/ML of usage)	Maximum charges for 1 July 2002 to 30 June 2003 (\$/ML of usage)	Maximum charges for 1 July 2003 to 30 June 2004 (\$/ML of usage)
The greater of \$1.80 /ML and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2001/02 for the South Coast in Table 3.	The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2002/03 for the South Coast applying in Table 3 by application of the formula in clause 4.2.3.	The greater of \$1.80/ML: and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2003/04 for the South Coast applying in Table 3 by application of the formula in clause 4.2.4.

4.3.3 For example, under Table 5 the charge derived by adding the entitlement (\$1.05/ML) and the usage (\$0.70/ML) components of the two-part tariff for 2001/02 for the South Coast in Table 3 is \$1.75/ML. The charge for the Sydney Catchment Authority for 2001/02 is therefore \$1.80/ML.

Table 6 Maximum charges for Hunter Water Corporation

Maximum charges for 1 October 2001 to 30 June 2002 (\$/ML of usage)	Maximum charges for 1 July 2002 to 30 June 2003 (\$/ML of usage)	Maximum charges for 1 July 2003 to 30 June 2004 (\$/ML of usage)
The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2001/02 for the Hunter in Table 3.	The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2002/03 for the Hunter applying in Table 3 by application of the relevant formula in clause 4.2.3	The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage components of the two-part tariff for 2003/04 for the Hunter in Table 3 by application of the relevant formula in clause 4.2.4

4.3.4 For example under Table 6 the charge derived by adding the entitlement (\$0.93/ML) and the usage (\$0.62/ML) portions of the two-part tariff for 2001/02 for the Hunter in Table 3 is \$1.55/ML. The charge for the Hunter Water Corporation for 2001/02 is therefore \$1.80/ML.

PART 5 GROUND WATER

5.1 Pricing components for ground water management areas

5.1.1 The maximum charge to extract ground water in a ground water management area under a water licence shall comprise of the sum of the following three components:

- (a) an entitlement charge; and
- (b) a usage charge ,

corresponding to the region or river valley for which the licence is issued (see Table 7); and

- (c) a base charge (see Table 8).

5.2 Pricing components for properties not in ground water management areas

- 5.2.1 The maximum charge to extract ground water under a water licence, other than those in ground management areas, shall comprise the sum of the following two components:
- (a) an entitlement charge corresponding to the region or valley for which the licence is issued (see Table 7); and
 - (b) a base charge (see Table 8).

5.3 Formula for calculating entitlement and usage charges

- 5.3.1 The maximum charge for the period 1 October 2001 to 30 June 2002 is the charge listed in Division 1 of Table 7.
- 5.3.2 The charge for the period 1 October 2001 to 30 June 2002 is to be implemented as set out in Schedule 2.
- 5.3.3 The maximum charges for ground water for the period 1 July 2002 to 30 June 2003 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_1, \text{ where}$$

A = the charge calculated under this formula

B = the maximum charge listed in division 1 of Table 7

X = the percentage increase listed in division 2 of Table 7

CPI₁ is defined in schedule 1.

- 5.3.4 The maximum charges for ground water for the period 1 July 2003 to 30 June 2004 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_2, \text{ where}$$

A = the charge calculated under this formula

B = the maximum charge determined from the application of the formula in clause 5.3.3

X = the percentage increase listed in division 3 of Table 7

CPI₂ is defined in schedule 1.

Table 7 Charges for ground water

Region/river valley	Division 1		Division 2	Division 3
	Maximum charges for 1 October 2001 to 30 June 2002		% increases for 1 July 2002 to 30 June 2003	% increases for 1 July 2003 to 30 June 2004
	Entitlement charge (\$/ML)	Usage charge (\$/ML)	X=	X=
Border	0.50	0.25	20%	20%
Gwydir	0.50	0.25	20%	20%
Namoi	0.50	0.25	20%	20%
Peel	0.50	0.25	20%	20%
Lachlan	0.80	0.41	20%	20%
Macquarie	0.80	0.41	20%	20%
Far West	0.88	0.44	20%	20%
Murray	0.79	0.40	20%	20%
Murrumbidgee	0.49	0.24	20%	20%
North Coast	0.88	0.44	20%	20%
Hunter	0.88	0.44	20%	20%
South Coast	0.88	0.44	20%	20%

5.4 Formula for calculating base charges

5.4.1 The base charges for the period 1 October 2001 to 30 June 2002 are the charges listed in Division 1 of Table 8.

5.4.2 The base charge for the period 1 July 2002 to 30 June 2003 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_1,$$

A = the charge calculated under this formula

B = the maximum charge listed in division 1 of Table 8

X = the percentage increase listed in division 2 of Table 8

CPI₁ is defined in schedule 1.

5.4.3 The base charge for the period 1 July 2003 to 30 June 2004 will be the amount determined by the following formula:

$$A = B \times (100\% + X\%) \times \text{CPI}_2, \text{ where}$$

A = the charge calculated under this formula

B = the maximum charge determined from the application of the formula in clause 5.4.2

X = the percentage increase listed in division 3 of Table 8

CPI₂ is defined in schedule 1.

Table 8 Base charges

	<i>Division 1</i>	<i>Division 2</i>	<i>Division 3</i>
	Maximum charges for 1 October 2001 to 30 June 2002 \$ per year	% increases for 1 July 2002 to 30 June 2003 X=	% increases for 1 July 2003 to 30 June 2004 X=
Charge per property in areas other than groundwater management areas	75	0%	0%
Charge per property in groundwater management areas	120	20%	20%

5.5 Maximum charges for Hunter Water Corporation to extract ground water

5.5.1 Pricing component

The maximum charge for Hunter Water Corporation extracting ground water under a water management authority licence is based on per megalitre of water used.

5.5.2 Approach for calculating the maximum charge

The maximum charge that may be levied for Hunter Water Corporation's entitlement to extract ground water under a water management authority licence is set out in Table 9.

Table 9 Groundwater charges for Hunter Water Corporation.

Maximum charges for 1 October 2001 to 30 June 2002 (\$/ML of usage)	Maximum charges for 1 July 2002 to 30 June 2003 (\$/ML of usage)	Maximum charges for 1 July 2003 to 30 June 2004 (\$/ML of usage)
The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage portions of the two-part tariff for 2001/02 for the Hunter in Table 7.	The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage portions of the two-part tariff for 2002/03 for the Hunter applying in Table 7 by application of the relevant formula in clause 5.3.3	The greater of \$1.80/ML and the charge derived by adding the entitlement and the usage portions of the two-part tariff for 2003/04 for the Hunter applying in Table 7 by application of the relevant formula in clause 5.3.4

5.5.3 For example, the charge derived by adding the entitlement (\$0.88/ML) and the usage (\$0.44/ML) portions of the two-part tariff for 2001/02 for the Hunter in Table 7 is \$1.32/ML. The charge for the Hunter Water Corporation for 2001/02 is therefore \$1.80/ML.

PART 6 LICENCE FEES

- 6.1 In view of a new access licensing system proposed to be introduced under the *Water Management Act 2000* during the term of this determination and possible future changes to the existing licensing structure, the maximum charges for licence applications, renewals and permanent transfers will remain at levels consistent with Tribunal Determination 98-5 of 16 July 1998 and Determination No. 7, 2000 of September 2000, until the Tribunal makes a specific determination or conducts a review on licence fees under the new licensing regime.
- 6.2 The charge for the temporary transfer of the licence between licence holders is not to exceed a fixed charge of \$25, plus a variable charge of \$1 per megalitre of water transferred, but with a maximum total charge of \$75 per transfer.

PART 7 NEW OR ADDITIONAL CHARGES

- 7.1 The WAMC must not exceed or levy any new or additional fees or charges in relation to any bulk water service entitlement which is subject to a maximum price set by this determination other than in accordance with a relevant determination of the Tribunal.
- 7.2 The WAMC may however negotiate fees with water users for optional or additional water supply services without the Tribunal's prior approval if the proposed fee is for a service that is not essential to, or is separate and distinct from, the rights conferred by means of a water licence to access and use a quantity of water.
- 7.3 This determination does not apply to charges for the Lowbidgee Flood Control and Irrigation District, and Gol Gol Creek.

SCHEDULE 1 DEFINITION OF CPI

1.1 Interpretation

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, the 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 cumulative 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 determined by the Tribunal and notified to DLWC from time to time.

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

1.2 Application of the formula

CPI₁ means the number derived from the application of the following formula:

$$CPI_1 = \left(\frac{CPI_{Jun2001}^{-GST} + CPI_{Sep2001}^{-GST} + CPI_{Dec2001}^{-GST} + CPI_{Mar2002}^{-GST}}{CPI_{Jun2000} + CPI_{Sep2000}^{-GST} + CPI_{Dec2000}^{-GST} + CPI_{Mar2001}^{-GST}} \right)$$

CPI₂ means the number derived from the application of the following formula:

$$CPI_2 = \left(\frac{CPI_{Jun2002} + CPI_{Sep2002} + CPI_{Dec2002} + CPI_{Mar2003}}{CPI_{Jun2001} + CPI_{Sep2001} + CPI_{Dec2001} + CPI_{Mar2002}} \right)$$

where:

- CPI is as defined and where the corresponding subtext (for example $CPI_{Jun2001}$) means the CPI for the quarter and of the year indicated (in the example the June quarter for the year 2001).
- CPI^{-GST} is as defined.

SCHEDULE 2 IMPLEMENTATION OF 1 OCTOBER 2001 PRICE CHANGES FOR THE ANNUAL BILLING YEAR 2001/2002

1. 1 October 2001 price changes for annual water bills in the financial year 2001/2002 shall apply as follows:
 - (1) area, entitlement and base charges are to be levied at the new rate from 1 October 2001;
 - (2) water usage charges for:
 - (i) Border, Gwydir, Namoi and Peel Valley, where metering readings are available, shall be levied at the new rate from 1 October 2001;
 - (ii) All other valleys shall be levied at the pre 1 October 2001 price for 15 per cent of annual usage, to reflect water usage in the September quarter 2001. The remaining 85 per cent of annual usage will be levied at the new 1 October 2001 price.