STATE WATER CORPORATION
PRICING SUBMISSION
TO
THE INDEPENDENT PRICING AND REGULATORY TRIBUNAL

OCTOBER 2004

1 EXECUTIVE SUMMARY

State Water is seeking prices for the three years from July 2005 to June 2008 with full cost reflectivity being achieved on most valleys over five years.

This submission on bulk water prices by State Water Corporation to the Independent Pricing and Regulatory Tribunal differs significantly from previous submissions to the Tribunal for the following reasons:

- On 1 July 2004, State Water became a State Owned Corporation, and now must operative with strict commercial discipline to achieve and maintain financial viability;
- State Water's submission to IPART is separate from DIPNR's submission on water resources management. All previous submissions had combined operations and water resource management costs;
- State Water's submission includes its costs for supplying bulk water services to all users and the environment, but *only on regulated rivers;*
- The DIPNR submission will cover all costs associated with bulk water services to unregulated river and groundwater customers.

Taken together, these radically change the philosophy of State Water's service delivery strategy and financial structure.

Consequently, in this submission, State Water is seeking these ten key outcomes:

1. That the cost recovery approach will be based on the "Building Block Approach".
2. Full costs will consist of State Water's costs for bulk water delivery, asset management, operations, commercial services and customer services.
3. Sharing of full costs by impactors and beneficiaries to continue based on accountability and minimisation of 'gold-plating'.
4. Consistent two-part pricing based on risk and value. Entitlement charges to be 60% of revenue and use charges to be 40% of revenue, standardised across the state.
5. Pricing for High Security and General Security water to reflect their relative full costs.
6. Reduction of cross subsidies and greater transparency, among consumers.
7. Mitigation of immediate impact on consumers and maintain low level of debt by aiming full cost recovery over five years.
8. Additional entitlement charges in the Lachlan Valley and Murrumbidgee Valley, for Lake Brewster Project and Yanco-Columbo-Billabong Project respectively, as specifically sought by customers.
9. Increase in the maximum charge for cost recovery on processing *dealings* (temporary water transfers).
10. To charge customers for net water losses where these losses are the result of errors in water ordering

These outcomes are consistent with previous determinations by IPART and other regulators, the COAG and NCC principles and the National Water initiative (NWI). The NWI requires State water to initially

achieve "lower bound pricing" and then to move toward "upper bound pricing". This submission proposes moving State Water closer to lower bound pricing in the short term so a transition to upper bound pricing can be considered in future.

State Water's initial capital structure and proposed method of funding the organisation are a significant departure from the previous submissions and determinations. The proposal ensures that there is no major change to water users costs for services resulting from the changed structural aspects. The Regulatory Asset Base at 1 July 2004 was set at $300M which will generate the same revenue in 2004/2005, as would be generated under the annuity methodology, taking into account increased costs since the last determination. This recognises water users need for price stability.

This approach reflects the capacity of the business to generate revenue through prices, assuming that State Water should recover only the amounts required to maintain and operate its bulk water business. The value of the Regulatory Asset Base (RAB) will be split between government and customers, based on the level of financial contribution by each.

After considering alternative approaches, State Water proposes to move to a 'building-block' approach for pricing, which generates a rate of return of 6% on a regulated asset base rolled forward from an initial July 2004 value of $300m. State Water recognises that a 6% rate of return is slightly below shareholder expectations and that targeted by other NSW water sector businesses. State Water believes that a 6% return is an appropriate transition target over the current regulatory period. State Water will review the appropriate rate of return in subsequent regulatory periods to maintain a consistent approach with other water sector businesses and future expectations.

State Water delivers water to all authorised users and uses on regulated river systems. DIPNR is accountable for supplying water to or managing water users on unregulated rivers and groundwater users. State Water will provide its services on unregulated systems and groundwater systems under contract to DIPNR.

State Water will continue to manage assets to store and deliver water on regulated rivers in NSW, and will contract to Department of Infrastructure, Planning and Natural Resources to read meters, issue accounts, receipt money and provide customer service to unregulated river and groundwater customers.

Cost-sharing for elements of State Water's capital program have been reconsidered, as the Tribunal requested. State Water proposes that users pay for, 100% of occupational health and safety (OH&S) compliance upgrades; 50% environmental compliance upgrades; and Government pay 100% of dam safety compliance upgrades, until compliance with July 1997 standards is achieved. Once this current compliance program is completed, State Water proposes that customers pay 50% of dam safety upgrades on flood mitigation dams and 100% of dam safety upgrades on non-flood mitigation dams.

Corporatisation makes transparent, the user revenues, government shares, the subsidies, and the formal Community Service Obligations. These will reflect the agreed costs, cost sharing arrangements, and subsidies determined by the Tribunal.

State Water proposes that the differential in price between high and low security entitlements be based on the conversion rate in the Water Sharing Plans and the period of reserves. This redirects costs from low security users and towards high security.

State Water has implemented a two-part tariff in all regulated river valleys, in line with National Competition Policy and the Tribunal's requirements.

The price path proposed by State Water price increases in each valley to achieve full cost recovery over five years where this is possible. These costs are fully explained in the submission.

The six main principles for pricing in this submission are therefore:

1. Maintaining the current cost sharing ratios for dam safety upgrades until each structure is upgraded to an appropriate level at which time State Water will propose new cost sharing arrangements
2. The ratio of fixed and variable revenues to be earned through prices set by IPART be standardised across the state to 60/40 which is a departure from the current ratios which vary considerably between valleys. This places a degree of risk on State Water's income which we propose to reduce by shifting the average usage data down by one standard deviation from the mean usage over the last one hundred years.
3. Changing the high security entitlement charge to better reflect the value of high security water over general security. This will result in some significant increases in high security charges.
4. Price increases for general security and usage to be capped at a maximum of 25% PA with maximum increases for high security capped at 50% PA.
5. Wholesale discounts provided to the Irrigation Corporations and some other irrigation districts to be discontinued immediately.
6. That State Water adopt the regulatory asset base and building block approach consistent with other water industries in NSW. The starting point for the RAB at 1 July 2004 has been calculated at $300M.

2 COAG AND NCC PRINCIPLES

On 25 February 1994 the Council of Australian Governments (COAG) issue a communiqué detailing the agreement reached on water resource policy. This communiqué is available at

http://www.coag.gov.au/meetings/250294/index.htm#water

In particular the COAG principles driving this pricing submission are:

> *(i) the adoption of pricing regimes based on the principles of consumption-based pricing, full-cost recovery and desirably the removal of cross-subsidies which are not consistent with efficient and effective service, use and provision. Where cross-subsidies continue to exist, they be made transparent;*
>
> *(ii) where service deliverers are required to provide water services to classes of customer at less than full cost, the cost of this be fully disclosed and ideally be paid to the service deliverer as a community service obligation.*

In accordance with the COAG agreement and the National Competition Policy, the NSW Government ringfenced State Water as a "commercial business" of the Department of Land & Water Conservation with effect from 1 July 1998. Due to DLWC's reluctance to clearly define roles and accountabilities and put in place best practice, State Water was excised from DLWC and place in Dept of Energy Utilities and sustainability as a transitional arrangement. At the same time, Department of Infrastructure, Planning and Natural Resources (DIPNR) was formed with the residual parts of DLWC and Planning NSW.

Based on a Business Review, the government made a decision to corporatise State Water. The process of corporatisation adopted the COAG, NCC and Commercial Policy Framework of NSW Treasury as the foundation principles. On 1 July 2004 State Water Corporation was constituted as a State Owned Corporation.

Consistent with its enabling legislation, this pricing submission seeks greater cost reflectivity in bulk water delivery prices in NSW, based on COAG principles and the IPART framework.

In addition, the COAG Agreement led to a number of water reform initiatives which were implemented in NSW through various policies and ultimately in the *Water Management Act 2000*. The implementation of the *WMA2000* relies heavily on effective separation of regulatory and operational functions.

Section 15 Of the *Independent Pricing and Regulatory Tribunal Act 1992* requires the Tribunal to primarily consider (1) Consumer Protection, (2) Economic Efficiency, (3) Financial Viability and (4) Environmental Protection when determining bulk water prices. The Tribunal must balance a raft of competing needs to achieve the requirements of the Act as well as considering the COAG guidelines.

The most recent COAG guidelines were included in the *National Water Initiative* (NWI), which is available at: http://www.coag.gov.au/meetings/250604/iga_national_water_initiative.pdf

2.1 STATE WATER CORPORATION'S OBJECTIVES AND FUNCTIONS

The *State Water Corporation Act 2004 (SWCA2004)* defines the objectives and functions of the organisation:

(1) The principal objectives of the Corporation are to capture, store and release water in an efficient, effective, safe and financially responsible manner.

(2) The other objectives of the Corporation are as follows:

(a) to be a successful business and, to that end:

(i) to operate at least as efficiently as any comparable business, and

(ii) to maximise the net worth of the State's investment in the Corporation,

(b) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates,

(c) where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in section 6 (2) of the Protection of the Environment Administration Act 1991,

(d) to exhibit a sense of responsibility towards regional development and decentralisation in the way in which it operates.

Functions of Corporation

(1) The principal functions of the Corporation are as follows:

(a) to capture and store water and to release water:

(i) to persons entitled to take the water, including release to regional towns, and

(ii) for the purposes of flood management, and

(iii) for any other lawful purpose, including the release of environmental water,

(b) to construct, maintain and operate water management works,

(c) any other functions conferred or imposed on it by the operating licence or by or under this or any other Act or law.

(2) The Corporation may:

(a) provide facilities or services that are necessary, ancillary or incidental to its principal functions, and

(b) conduct any business or activity (whether or not related to its principal functions) that it considers will further its objectives.

(3) The exercise by the Corporation of any of its functions is subject to the operating licence and any applicable requirements under the Water Management Act 2000 or the Water Act 1912.

(4) This section does not limit the functions of the Corporation apart from this section, but is subject to the provisions of the State Owned Corporations Act 1989, this Act and any other Act or law."

On 1 July 2004, State Water was established as a stand alone Corporation to fulfil the requirements of COAG, NCC and IPART requirements. The clear separation of operations and regulation is essential to fulfil these requirements. Total resource management comprises resource regulatory functions and resource operation functions.

To be an effective and efficient operator, State Water must have the accountability for all operational functions. Due to the history of DLWC, certain functions that are clearly operational, continue to be performed by DIPNR. For example, monitoring of flows, asset management, monitoring water quality in

storages and weirs, advising customers of availability of water. There is considerable debate between DIPNR and State Water to reach a satisfactory resolution on the separation and subsequent interaction. Clear separation of functions ensures effective service delivery at efficient costs.

Negotiations are currently under way with DIPNR about the division of functions between the two organisations. The outcomes of these negotiations will have an impact of State Water's cost base. Until the relative responsibilities are defined, the full cost of State Water's operations cannot be accurately defined. This submission has been prepared based on State Water's preferred model, as identified in State Water's response to the IPART Issues Paper on State Water's Interim Operating Licence. State Water suggests that there may be some overlaps in the submission.

State Water operates in a highly regulated and scrutinised environment. The "Response to the IPART Issues Paper on the Review of the Operating Licence for State Water Corporation" lodged with the Tribunal 15 October 2004, identifies more than a dozen regulators that impact on State Water. This document is available at www.ipart.nsw.gov.au.

Regulatory compliance costs resulting from Corporatisation are new and significant with regard to some regulators.

2.2 TRIBUNAL'S PRINCIPLES

The Tribunal has restated in the Issues Paper, the principles adopted in the 1996 review of bulk rural water services:

- water charges should be based on the efficient economic costs of providing water services;
- the administrator of water resources should receive sufficient funds to achieve financial stability and deliver a sustainable level of water services;
- pricing policy should encourage the best overall outcome for the community from the use of water and the other resources used to store, manage and deliver that water;
- the cost of water services should be paid by those who use the services. Those who cause more services to be required, or benefit more, should pay more;
- pricing policy should promote ecologically sustainable use of water and of the resources used to store, manage and deliver that water.

These principles are equally important following the corporatisation of State Water.

2.3 DEFINITION OF 'ECONOMIC COSTS'

The Tribunal has defined economic costs to include the following, relating to State Water:

Table 1: Application of economic cost elements to State Water

Cost Element	Application to State Water
Recurrent costs of administration, operations and any maintenance, on regulated rivers, unregulated rivers and groundwater sources.	State Water directly incurs costs of operation of regulated rivers only; State Water will carry out certain functions for DIPNR on unregulated and groundwater under contract.
Recurrent costs of dealing with the external environmental impacts of water *storage and delivery*	State Water has classified these costs where relevant, as part of its operation costs
A capital cost calculated using the annuities approach to fund refurbishment and replacement costs for infrastructure assets on regulated rivers. This should not include a rate of return on existing infrastructure assets.	Changes are proposed to the annuity methodology to best meet State Water's new financial requirements; The effect of the proposed Building Block Approach would be the same as the Annuity Approach
A depreciation charge for those fixed assets that have finite lives.	Depreciation is applied to all assets, although different asset lives apply
A real rate of return on new investments and augmentations to existing infrastructure on regulated rivers.	After re-setting to a level representing current cost and revenue levels, a real rate of return on all assets is proposed.

2.4 THE FUNCTIONS OF STATE WATER CORPORATION

State Water's activities and functions are directly exercised on the regulated rivers**.** Any services provide by State Water to unregulated river customer or groundwater customers will be under a full cost recovery contract between State water and DIPNR. State Water does not have an Access Licence nor a Water Management Licence, and is not responsible for the management of, or the impacts of water use by customers.

Water users extract water delivered by State Water in accordance with the relevant legislation and planning instruments. The impacts of water use are monitored and regulated by DIPNR as the State's water resources manager.

Since the establishment of State Water on 1 July 2004, it has been subject to a similar regulatory framework to that of the Hunter Water Corporation, Sydney Water Corporation and the Sydney Catchment Authority. State Water is subject to the *State Water Corporation Act 2004*, the *State Owned Corporations Act 1989* and relevant federal and state laws.

The main regulatory instruments for State Water are:

- the Interim Operating Licence, issued and administered by the Portfolio Minister (the Minister for Energy, Utilities and Sustainability);
- the Statement of Corporate Intent negotiated annually with the Shareholders (the Treasurer and the assistant Treasurer);
- Water Management Works Approvals issued and administered by DIPNR in accordance with the *Water Management Act 2000*;

In addition, the Operating Licence requires State Water to enter into Memoranda of Understanding with DIPNR, the Department of Environment and Conservation and Department of Primary Industries (NSW Fisheries) for various purposes. State Water's view on this is dealt with in its response paper on the Interim Operating Licence.

2.5 CLARIFICATION OF EFFICIENT COSTS

In Determination No 6, 1997 (p7), the Tribunal defined economic costs of bulk water delivery services. As State Water is responsible for bulk water delivery services on regulated rivers only, the 1997 Determination definition of economic costs, applied to regulated rivers is:

- Recurrent costs of bulk water delivery (operations, maintenance, metering and administration) of regulated rivers;
- Recurrent cost of dealing with external environmental impacts of water use;
- A capital cost calculated using the annuities approach to fund refurbishment and replacement costs for infrastructure assets on regulated rivers. This should not include a rate of return on existing infrastructure assets;
- A depreciation charge for fixed assets that have finite lives; and
- A real rate of return on new investments and augmentation to existing infrastructure on regulated rivers.

The National Water Initiative (NWI) requires State water to initially achieve "lower bound pricing" and then to move toward "upper bound pricing".

Lower Bound Pricing is defined (NWI page 29), as: the level at which to be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes, or Tax Equivalent Regimes (not including income tax), the interest on debt, dividends (if any) and make provisions for future asset refurbishment/replacement. Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.

Under the pricing regulatory framework, State Water has almost achieved lower bound pricing. The price levels were designed to produce full cost recovery by 2004 in all but the North and South Coast, the Peel and the Hunter valleys. The price structures currently recover the lower bound pricing components except taxes, interest on debt and dividends.

Upper Bound Pricing is defined (NWI page 30) as: the level at which, to avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes, or TERs, (not including income tax), provision for the cost of asset consumption and cost of capital, the latter being calculated using a weighted average cost of capital WACC.

State Water proposes that the 2005 Determination should restructure the cost base of price calculation. State Water will seek to progress towards upper bound pricing (UBP) in the 2008 submission. It is

proposed to move towards UBP using the 'building block approach' with a Regulatory Asset Base replacing the annuity for funding capital expenditure. This proposal is explained in Section 4 of this submission.

The Tribunal has been concerned about the difficulty in separating costs attributable to water supply from the cost of water resource management, while State water was partially 'ring-fenced' within DLWC. The Tribunal recommended three developments to achieve greater clarity, which were:

1. clear ring-fencing State Water from DLWC (consistent with the 1994 COAG Water Reform Framework);
2. establishing transparent service agreements with related businesses (ideally the services would be subject to open tender); and
3. requiring valley based accounts to be produced and independently audited (available on a quarterly and annual basis).

The separation from DLWC and subsequent corporatisation of State Water allows the first requirement to be fulfilled. With corporatisation, clear separation of administration and management has occurred. However, the separation of accountabilities, risk, ownership, functions, and tasks is critical for effective and efficient operation, which is the real aim of ring-fencing.

The second requirement is currently in progress but is impeded by the lack of definition of the separate roles and functions of State Water and Department of Infrastructure, Planning and Natural Resources. Definition of purchaser-provider relationships for Hydrometric Services, Water Quality Monitoring and response, foreshores management, administrative tasks of making water available to customers are some examples. Action is underway to resolve this impasse quickly. Once these roles and functions are defined, State water will enter legally binding contracts for exchange of services.

The third requirement has been partly achieved. Since 2000/01 State Water has been providing special purpose Valley Accounts to the quarterly meetings of the eight Customer Service Committees. These accounts were jointly audited as part of the annual audit of the parent Department at the end of the year. As these accounts are an extract from the Department's accounts, separate audits were not possible.

2.6 IMPLICATIONS OF THE NATIONAL WATER INITIATIVE

On 25 June 2004, the Council of Australian Governments signed an inter-governmental agreement on a national water initiative (NWI). The NWI builds upon and continues the economic and institutional principles articulated in early COAG agreements and through the NWI may affect State Water's operational in a number of ways, which are discussed as follows:

- Water access entitlements and planning framework;
- Water markets and trading;
- Best practice pricing; and
- Institutional reform and benchmarking.

2.6.1 Water access entitlements and planning framework

The national water access and planning framework is designed to plan for the definition of a *consumptive pool* from which water users may take water, and to modify that pool in line with current and future assessments of the need for water to be available to meet environmental objectives.

Where it is planned to reduce the water available to water users, the NWI assigns risk among governments and between governments and water users in cases where the amount of water set aside for the environment is increased and water for consumptive use is decreased.

Section 49 of the NWI Agreement states that '*water access entitlement holders bear the first 3% reduction in water allocation under a water access entitlement*'. The Commonwealth and State governments bear part of the risk for water access reductions between 3% and 6% and over 6%.

Reductions in water for consumptive use will reduce State Water's income from water user customers, while State Water's costs will not decrease. In order to ensure adequate revenue to maintain operations, State Water will require cost recovery from non-consumptive users and or increased prices from consumptive water users. If the volume of water delivered decreases by 3%, water charges per unit of entitlement and per unit of water delivered must either be recovered from the beneficiary of the 3% or, fixed and usage charges must rise by an appropriate proportion.

The National Water Initiative (NWI) may reduce the volumes of available to consumptive customers in two ways. The first results from periodic increases to annual volumes of environmental water and consequent reduction to users during that year. The second is a permanent reduction of entitlements to address over-allocation of water in the Murray-Darling Basin. The effects of the NWI will have to be carefully monitored as they are implemented and State Water will seek appropriate solutions. The impacts of Water for Rivers as well as The Living Murray Initiative are also being followed, to determine the net effect. State Water has the view that if water is actively required to be delivered using its assets, then the beneficiaries of State Water's services will be required to share the full costs.

2.6.2 Periodic adjustment of water entitlements

The NSW Government has recently introduced new water sharing plans, some of which remain subject to challenge. Although the possibility cannot be ruled out entirely, it appears unlikely that the volumes of water from State Water's regulated river sources will be significantly altered by changes to water sharing plans during the period of the price determination.

2.6.3 Agreement on water over allocation in the Murray-Darling Basin

COAG agreed on 25th June 2004 to an '*Inter-governmental Agreement on Addressing Water Over allocation and Achieving Environmental Objectives in the Murray-Darling Basin*'. That agreement '*establishes arrangements for the recovery and management of water. . . to address the declining health of the River Murray system . . .*' (s3). The agreement provides for $500 million to purchase water from water entitlement holder, to assign for the environment, amounting to '*an estimated requirement of an average 500 gigalitres per year*'.

The agreement on over allocation in the Murray-Darling Basin aims to transfer to environmental objectives the estimated water requirement. Clause 17 identifies the six '*significant ecological assets*', all of which are located in the Murray valley, and the target for recovered water over five years of 500 GL per year (i.e. by 2009). Methods for obtaining water for the environment include efficiency savings and the purchase of water entitlements.

Water entitlements purchased in NSW are most likely to come from the Murray or the Murrumbidgee Valleys.

It is unclear how much water for the Murray River will be obtained from efficiency savings or by purchase of water entitlements. Further, the legal and commercial status of water entitlements which are purchased in NSW for environmental purposes, is not yet clear. For example, if environmental water entitlements attract normal water charges, the transfer of the water under the agreement may not significantly affect State Water's revenue. Nevertheless, State Water would need to take into account

the pattern of environmental water demand from year to year if it differs significantly from irrigation demand patterns and ascertain the net impact on its operations.

If water entitlements purchased from NSW water users cannot be charged for, State Water's revenue base will be reduced. The water volume proposed to be transferred (500 GL) are significant, though not all is expected to be sourced from water user entitlements in NSW. Annual average water use by NSW in the Murray valley is 1,960 GL and in the Murrumbidgee valley, 1,925 GL. Every 100 GL of entitlement transferred out of NSW would amount to a 4.9% reduction in valley revenue or an equivalent increase in valley prices.

2.6.4 Price adjustment mechanisms

State Water envisages that water available for delivery, revenue and prices may be affected significantly, if the cost of delivering environmental water is not recoverable. Changes to Water Sharing Plans (WSP) are not expected to cause significant reductions in entitlements and revenues during the period of the next price determination period to June 2008, although such change cannot be entirely ruled out.

It is likely that under the NWI however, that significant reductions in available water will occur by June 2008, mainly affecting the Murray and Murrumbidgee valleys.

These effects have to be properly managed, to avoid State Water's deficits and reduction of services.

State Water therefore recommends to the Tribunal that a reduction in the water entitlement base of 2% resulting from transfer of water to the non-chargeable environmental licences should cause an automatic or progressive adjustment of per-unit prices within the relevant valley, to maintain the revenue base.

2.6.5 Best practice water pricing and institutional arrangements

The NWI agreement contains a section on 'Best practice water pricing and institutional arrangements'. The general principles are to:

- Full cost recovery for all rural surface and groundwater based systems, recognising that there will be some small community services that will never be economically viable but need to be maintained to meet social and public health obligations:
- Achievement of at least lower bound pricing for all rural systems in line with existing NCP commitments;
- Continued movement towards upper bound pricing for all rural systems, where practicable; and
- Where full cost recovery is unlikely to be achieved in the long term requiring a Community Service Obligation (CSO), the size of the subsidy is to be reported and, where practicable, jurisdictions to consider strategies aimed at removing the need for the CSO.

2.6.6 State Water's position

State Water's CSO basis is determined by the cost shares set by the Tribunal for elements of the capital program. This submission proposes that the cost shares should be reviewed to progressively increase the level of cost reflectivity. Some level of CSO contribution may continue in the long term, if such services are expedient.

Additionally, the transition to State Owned Corporation status warrants a short-term 'smoothing' of Government subsidy, to ease the transition to an improved cost-reflective pricing regime.

State Water's current objective is to initially achieve lower bound pricing as defined in the NWI agreement. Currently State Water's capital program is maintained by considerable Government contribution resulting from current cost-sharing arrangements.

State Water is still moving toward full cost recovery on Operating Expenditure (OPEX) and is also heavily reliant on government contribution to the Capital Expenditure (CAPEX) program. Consequently it is not currently feasible, to set goals based on upper bound pricing.

The Regulatory Asset Base (RAB) for pricing purposes should be limited to a level which will generate adequate revenue to provide State Water with the funds to cover the elements identified in the NWI definition of lower bound pricing (See Section 2.6). Additionally, as State Water is now a stand alone SOC, the RAB must be determine in accordance with the Australian Accounting Standards.

2.7 SCOPE OF STATE WATER'S ACTIVITIES

Under the *State Water Corporation Act 2004 (SWCA2004)*, State Water is responsible, as a bulk water delivery business, for storage and delivery of water to users on regulated rivers only. Responsibility for unregulated rivers and groundwater remains with DIPNR.

As noted earlier, State Water will provide services on behalf of DIPNR on unregulated rivers and groundwater on a contract basis. The Tribunal, in setting prices for unregulated rivers and groundwater will need to know the basis on which State Water is charging DIPNR for the services. State Water has provided cost information on billing and metering activities for unregulated rivers and groundwater to DIPNR for inclusion in their submission.

3 PRICING OBJECTIVES

3.1 SUMMARY OF OBJECTIVES

Corporatisation of State Water introduces many new challenges and opportunities. This submission is based on seven main objectives, which are consistent with COAG principles, IPART considerations, NSW Commercial Policy Framework and the NWI.

The outcomes sought by State Water:

11. That the cost recovery approach will be based on the "Building Block Approach".
12. Full costs will consist of State Water's costs for bulk water delivery, asset management, operations, commercial services and customer services.
13. Sharing of full costs by impactors and beneficiaries to continue, based on accountability and minimisation of 'gold-plating'.
14. Consistent two-part pricing based on risk and value. Entitlement charges to be 60% of revenue and use charges to be 40% of revenue, standardised across the state.
15. Pricing for High Security and General Security water to reflect their relative full costs.
16. Reduction of cross subsidies and greater transparency, among consumers.
17. Mitigation of immediate impact on consumers and maintain low level of debt by aiming full cost recovery over five years.

In the processes to achieve these objectives State Water has endeavoured to maintain consistency with previous decisions made by IPART, with regard to State Water, other jurisdictions and other utilities.

The objectives sought by State Water also enable better benchmarking of costs among valleys and between businesses. A factor currently confounding useful benchmarking is the variation in process and practice among valleys and between State Water and other businesses. State Water appreciates that legacy issues significantly affect costs, and that addressing legacy issues and moving ahead into a consistent cost sharing regime will enable compliance with COAG and IPART requirements.

Where this submission proposes changes to current practice or process, State Water has maintained the integrity of the outcomes of previous IPART Determinations.

3.2 THE 'BUILDING BLOCK' APPROACH

State Water recommends that the building block methodology, as applied by the Tribunal to other water sector agencies, and applied in other states, also be used in State Water's case. The method involves a Regulatory Asset Base (RAB) capable of generating a real rate of return for revenue purposes. The approach takes into account under or over-expenditure compared with forecasts, while planning to meet budgeted expenditure (recurrent and capital) in the following 3-5 years.

The building block method more closely reflects actual expenditure and realistic cost estimates, as they are made. State Water can predict with reasonable certainty its capital programs for the next determination, knowing the timing and criteria for the major asset programs. Building in revenue levels based on estimates made for more than ten years ahead is more difficult and uncertain.

State Water proposes changes to the way in which capital is raised for its major asset maintenance and compliance program. Since corporatisation, State Water is under the financial discipline of the NSW Treasury Commercial Policy Framework. The 30-year annuity is no longer the best model in delivering the corporate objectives of State Water. This price determination period is an ideal time to review the current annuity method and change the approach. State Water is aware that much effort has gone into developing the annuity in the first place, but believes that it may not best serve the purpose originally intended.

State Water proposes changes to the regulatory asset base (RAB) and to the capital annuity in line with the COAG principles for bulk water pricing.

The COAG principles can be stated as:

1. The full cost of providing water services to specific beneficiaries or impactors should be recovered through charges to those parties.
2. The costs of public benefits/impacts management, which cannot be attributed to specific beneficiaries, should be treated as a Government funded Community Service Obligation (CSO).
3. Where costs are subsidised by a jurisdiction the subsidy and any CSOs should be explicit and transparent.

State Water is now a standalone corporation with commercial objectives, and the funding of capital expenditure (CAPEX) need to be reviewed. There are two main methods of funding CAPEX.

1. Charging a rate of return and depreciation on the work once it has been completed (consistent with the building block approach);
2. Through an annuity charge (the infrastructure annuity approach).

IPART considered the annuity approach to be more appropriate for long-lived bulk water assets. The capital annuity was calculated by estimating capital expenditure over a 30-year period and then:

- Converting the expenditure flow into a net present value (NPV), and using a real pre-tax discount rate of 7%, and
- Converting the NPV into 30 equal annual annuity payments again at a discount rate of 7%.

The COAG Expert Group recommended the use of the annuity approach, ***only*** in circumstances where it is not possible to charge on the basis of depreciation calculated on the deprival value of the assets, (or in other words, the building block approach).

3.2.1 ISSUES TO CONSIDER UNDER SECTION 15 OF THE *IPART ACT*

- **The Annuity Approach and Financial Viability of State Water**

The annuity approach is designed to determine the long-term cash requirements for asset replacement/refurbishment where it is a required to maintain service delivery capacity. However IPART's adoption of a 30 year annuity period with a significant front end loading of CAPEX requirements results in a large cash deficit over the medium to long term, (before allowance for tax, dividends and revenue smoothing).

Consequently, using the current annuity approach requires significant borrowings in the medium to long term. The ability to service the loans assumes minimal CAPEX in the last ten years of the annuity period.

Under the Commercial Policy Framework, it is highly unlikely that State water will be able to fund this deficit as a stand alone business, especially given the absence of a transparent regulatory asset base (RAB) value. Under the current annuity approach, all capital expenditure is recovered through the annuity charge, and the RAB at the end of the annuity period remains zero.

Even if State Water could borrow against future annuity payments, its credit rating would soon fall below investment grade, which would either preclude further borrowing or greatly increase the debt servicing costs.

By definition, the discounted cash flow of future regulated earnings under the annuity approach is equal to zero. There would be a problem in establishing an appropriate corporate balance sheet (ie. Asset value and capital structure) for State Water should we continue to adopt the annuity methodology.

IPART has taken the COAG concept of "medium to long term" to be 30 years which has a significant impact on the annuity calculation. Under the revised Total Asset Management Plan (TAMP), the 30 year renewals / compliance annuity is $27.8M (in real terms) but if a 15 year annuity period is chosen the annuity is $34.4M (in real terms). A ten-year period results in an annuity of $39.3M (in real terms).

3.2.2 PROBLEMS WITH THE ANNUITY

Reasons given by the Tribunal in the Issues Paper for adopting the annuity approach are:

- *it allows lumpy capital expenditure to be spread over a number of years, so as to minimise the impacts on users in a particular period;*
- *ensures sufficient funds are provided to meet the maintenance requirements of the assets.*

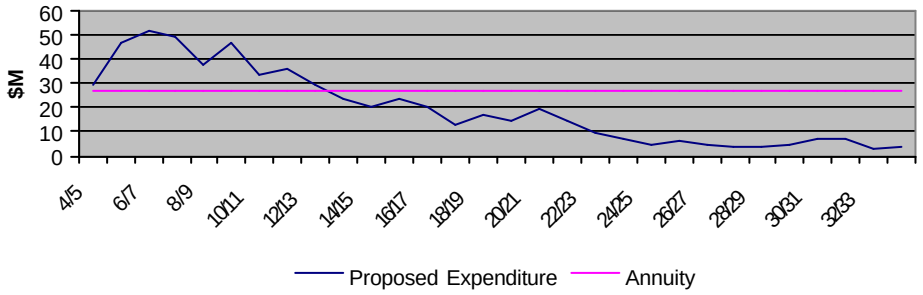
The effectiveness of an annuity in meeting these objectives depends on a number of factors, including its term, the nature of the capital program, and the expected expenditure profile.

- **Front-end loading of the capital program**

The longer the annuity period, the lower the annual annuity figures. State Water faces a period of 15-20 years of extensive dam compliance upgrade, which requires significant expenditure. This is illustrated in Figure 1.

A 30 year planning period will always include more clearly identified projects in the first 10 years. Beyond that point, estimates are indicative and subject to change. This explains why State Water's TAMP is heavily loaded in the initial 10-15 year period, as shown in Figure 1.

Figure 1: 30 year capital expenditure profile and annuity

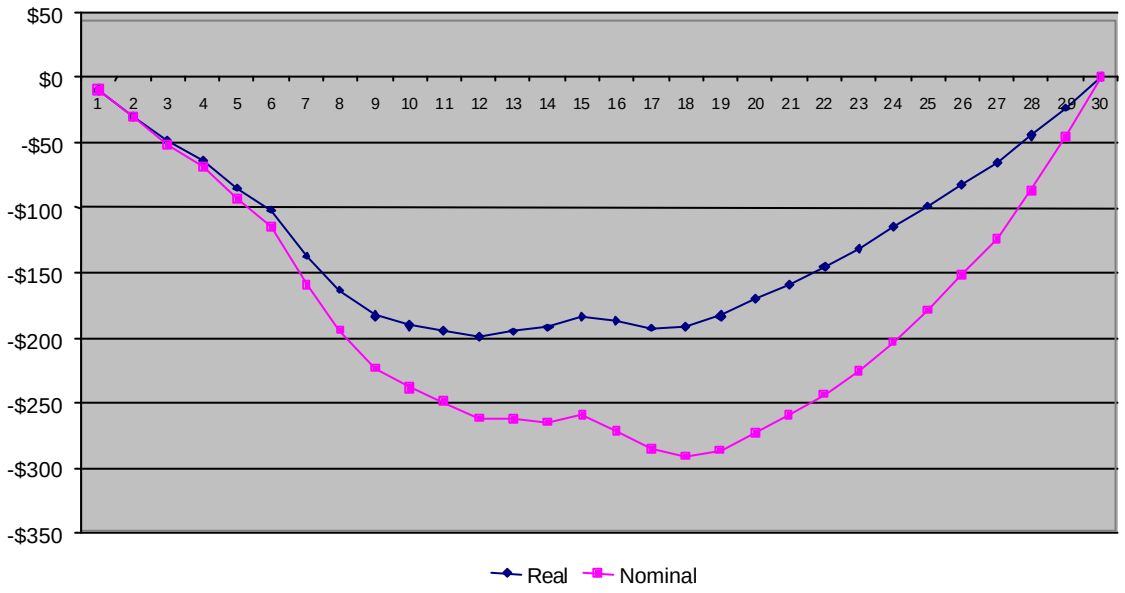


As Figure 1 illustrates, the expenditure profile in the first 15 years of the 30 year-annuity period is high. This represents the cost of all of the major dam compliance upgrades, which result from the *Dams Safety Act* compliance requirements. There is an obligation on State Water to undertake the works as promptly as possible, to minimise risk[1]. State Water's review of the 2000 TAMP has 'flattened' out the expenditure profile somewhat, by extending the timing of some projects, but there is a limit to the extent to which such flattening is possible or reasonable.

It is clear that the annuity, far from overcoming the lumpiness of capital expenditure in this case, merely under-recovers capital costs in the early part of the annuity period.

State Water's financial modelling has shown that the annuity approach does not assure a financially viable State Water. The adoption of a 30 year annuity period together with the significant front-end loading of State Water's capital expenditure requirements results in significant cash deficits over the medium to long term (before any allowance for tax and dividends and before any potential shortfalls associated with revenue smoothing).

Figure 2: Cumulative net cash flow ($M) provided by 30 year annuity



State Water believes it will have difficulty, as a stand-alone business, funding a deficit on this scale, especially given the absence of a reasonable RAB value. Modelling also shows that even if State Water is able to borrow against future annuity payments, its credit rating will fall significantly below investment grade.

- **Project costs subject to change**

Another difficulty arises because of the type of project associated with the major assets. The nature of regulatory compliance upgrades for flood security, thermal pollution and fish passage is such that initial estimates have a reasonable change of being modified as project design progresses. This is not only because of the scale and extended nature of the compliance upgrade program, but also because:

[1] Given that two headwork dams are classified as high hazard

- the parameters applied by regulators for environmental compliance are frequently subject to change, involve negotiated outcomes and may rely on the application of new or relatively untested technology;
- the knowledge gained by investigation, particularly detailed hydrologic analysis, may substantially alter initial design criteria and therefore change the costs; and
- levels of service and risk may change and require a more dynamic asset management program not tied to a static approach.

If a community consultation element is added, there is a serious likelihood that major dam upgrade concepts will change significantly during the feasibility and design stage, not to mention new factors that may emerge during the course of technical investigations or environmental assessment.

- **Equity**

The annuity approach raises concern about equitable outcomes for both customers and owners of the business. Under a 30-year annuity, today's water users are funding capital that may only be incurred in thirty years' time, which may not occur and from which they may not benefit. From the perspective of current customers it is doubtful whether it is equitable for them to be paying into capital fund that may not be required in thirty years' time, from which they may not derive any direct benefit. State water feels it is inequitable for current estimates based on current knowledge to be defining cost recovery for a 30 year investment program.

From a shareholder perspective, the annuity, combined with the write-off of all assets acquired prior to 1997, provides no return on capital invested in assets prior to that date. This fails to strike an equitable balance for stakeholders' interests and does not to meet the requirement to provide an appropriate return on public sector assets.

The Tribunal's previous Determinations created a 'line-in-the-sand' as of July 1997 thus writing off the total value of State Water's major assets, for regulatory purposes. In this way, the Tribunal was creating a starting point for new investment, while recognising the sinking of costs in assets already installed. At the same time, the Tribunal proposed a 30-year annuity, based on forward planning.

The asset write-down has a number of practical financial consequences for State Water. It prevents the derivation of realistic revenues from asset value – the value of assets cannot be used to develop a rate of return that generates the required level of revenue. Since the income stream cannot be generated in this way, the alternative annuity method was required.

However, an RAB of zero plus investment since 1997 cannot be used as equity against which to borrow. State Water will have difficulty managing debt with such a low asset value. Similarly, State Water's gearing ratio, based on no asset value will not sustain reasonable debt levels. The asset annuity, imposed at a consistent rate over the 30 years, with CPI increases, was calculated to be sufficient to cover the revenue required for refurbishments, upgrades and maintenance that were identified in the first year of the asset management plan. Thus, the proposed RAB has been set to ensure State Water's financial management capacity and viability.

- **Economic Efficiency**

The effectiveness of the annuity has been questioned in sending efficiency signals to customers through prices on water use, through prices, and incentives for greater efficiency and cost reduction in State Water's business operation.

The annuity factors into prices the capital cost of constructing infrastructure over a thirty year period. By attaching value to capital expenditure to be incurred over thirty years, meanwhile placing no value on the cost of existing infrastructure, the capital component of the price paid for water bears little relationship to the real capital cost of servicing existing customers.

The capital annuity is fixed over a thirty year period, which provides State Water with no incentive to manipulate its asset management program to achieve cost savings. State Water has no incentive to incur additional maintenance costs that would have the effect of reducing future capital expenditure because the capital cost is already being collected through the annuity. It has been argued that there is a disincentive to change maintenance practices under the annuity approach, even if the outcome is more efficient as theoretically customers have already 'paid' for part of the capital works through the annuity.

- **Simplicity and Transparency**

Finally, the annuity approach involves relatively complex financial calculations. Financial concepts such as net present value and annuity are difficult for most customers to understand. These complexities were highlighted in the Tribunal's previous determination, with uncertainty about the annuity providing a return on assets. The Tribunal's current approach is further complicated by using a combination of the building block methodology for non-system assets for capital expenditure incurred between 1997 and 2000, and the annuity approach for infrastructure assets. (i.e. pre 1997 assets were written off but the annuity calculation commenced from July 2000). While the Tribunal allowed depreciation for these assets, it is unclear why no return on these assets was allowed.

- **Complex resetting of the annuity**

State Water believes that the annuity will require regular adjustment, to take into account:

- agreed cost increases occurring between price determination periods;
- reasonable changes to capital planning, likely to be made in the medium to long term;
- changes in the timing of capital expenditure.

An adjustment to the annuity is considered in the Issues Paper. However, an adjustment at each price determination somewhat undermines the idea of a fixed annuity to guarantee capital revenue in the long term. If annuity has to be reset at reasonably frequent intervals, the recalculation of the annuity threatens to become highly complex and difficult to understand, as implied in the Issues Paper.

- **Objections to changing the annuity approach.**

The Tribunal may be reluctant to revisit the annuity approach, in part because of the time and resources that have been devoted to developing it. State Water believes that an amended annuity approach will not overcome its deficiencies and indeed may lead to a more complex and less understandable result. Considerable effort has been put in by State Water in developing and applying the building block approach to State Water's bulk water delivery business, in order to ensure its long term financial viability of the business which is consistent with the *IPART Act*. The proposed building block approach starts at the same point as the annuity approach in its effect and impact,

The Tribunal is concerned that water users may not wish to move away from the annuity, possibly because they have been opposed to the raising of a rate of return on assets, whose cost are sunk. In accordance with the Commercial Policy, a rate of return on all assets would be required, based on the building block approach, to move forward from the lower bound pricing.

3.2.3 REVIEWING THE REGULATORY ASSET BASE

In its 1998 determination, the Tribunal drew a line-in-the-sand by writing down all assets acquired before 1 July 1997 to zero value, for pricing purposes. The decision to exclude pre-1997 assets from the RAB was reaffirmed in IPART's 2001 Determination.

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

IPART adopted an annuity approach in determining capital costs in previous determinations for DLWC. The annuity approach calculates an annual capital return (i.e. capital annuity charge) based on the net present value of projected capital expenditure over a future 30 year period. It is likely that the adoption of the annuity approach contributed to IPART's decision to write off pre-1997 assets for pricing purposes. The annuity approach focuses on recovering future capital expenditure, rather than providing a return on, and of, existing assets. Providing a capital return on both existing assets and 30 years of future capital expenditure, would have led to unacceptable pricing outcomes.

Under a building block regulatory approach, a capital return (i.e. return on assets plus depreciation) is based on existing, rather than future, assets. Arguably, had IPART adopted a building block approach in previous determinations, a higher RAB could have been supported based on the equivalent capital return derived under the annuity approach. For example, the $18m capital annuity charge derived in IPART's 2001 Determination, would have supported a RAB of around $300m (in 2003/04 dollars) under the building block approach.

In order to reduce regulatory uncertainty, the initial RAB is normally not revisited at each determination reset (rather the RAB is rolled forward based on capital expenditure, depreciation and disposals). However, it is appropriate for IPART to revisit the value of State Water's RAB for this determination given:

- the proposed adoption of an alternative regulatory methodology (i.e. building block approach);
- it will be the first determination for SW as a corporatised entity; and
- IPART adopted an initial RAB of $669 million for Sydney Catchment Authority in its 2000 price review, based on a 'line in the sand value' determined in PriceWaterhouseCoopers Financial Structure Study.

Based on IPART's decision to write down pre 1997 assets to zero, a RAB value based on the roll forward of subsequent capital expenditure is estimated at $75m as at July 2004. Such a low value is not adequate to generate a revenue stream for State Water, nor was it intended to do so by the Tribunal. As State Water proposes to move to the building block approach, an asset value commensurate with revenues and costs is required. State Water proposes that the following considerations be taken into account in determining an initial RAB value:

- the economic value of State Water's underlying assets based on the capital cost component currently derived under the annuity approach;
- comparable RAB values of other NSW Australian water businesses;
- the achievement of a commercial revenue stream, sufficient to recover efficient operating costs, taxes and the provision of a commercial ROA, while maintaining an investment grade credit rating.

State Water believes that a 'line in the sand' asset valuation of $300m is consistent with the above criteria. It is consistent with the underlying economic value based on current prices. It is consistent with the approach adopted by the Tribunal in determining Sydney Catchment Authority's initial RAB following its establishment as a commercial business in 1999. The resultant revenue requirements under a $300m RAB are sufficient to ensure a commercially viable SW, measured by its capacity to earn a commercial ROA and maintain a commercial capital structure in terms of its capacity to fund future capital expenditure requirements, meet key debt servicing criteria and maintain an investment grade 'stand alone' credit rating

An initial RAB value of $300 million is significantly below the replacement value of approximately $2.3 billion. Of the $300 million, State Water proposes to allocate $105 million to bulk water customers for pricing purposes, with the balance of $195 million being allocated to Government. The significant write down in the RAB relative to replacement value, is consistent with the Tribunal's stated position that bulk water customers should not be required to pay a commercial return on the full value of historical expenditure, given that historical expenditure was heavily subsidised in order to encourage the development of irrigation agriculture.

The following discussion deals with possibilities for a regulated asset base value.

- **Role of RAB in generating revenue**

The cost recovery method commonly used for other water sector (and energy sector) utilities is a regulatory asset base that generates a rate of return, which in turn produces an income stream. The initial RAB on Corporatisation of State Water needed to be set at a level that provides the same starting revenue as that provided by the capital annuity.

It is desirable for State Water to have an asset valuation capable of generating the appropriate revenue for other reasons. Assets valued at zero will not allow for a suitable debt to equity ratio meaning the business would be forced to borrow at rates unsustainable to the business, if at all capable.

The Tribunal wrote down the asset base in 1997 to zero, because it was treating government investment prior to that date as sunk costs. The Tribunal states in the Issues Paper that *'This was consistent with the view that that much of the infrastructure was constructed for non-commercial objectives, and a commercial return on this historical expenditure was, therefore, not justified*'.[2] Non-commercial objectives referred to include flood mitigation and the encouragement of inland settlement through agricultural development.

In 2004, State Water is, however, in the position where, regardless of the reasons for constructing the infrastructure in the first place, it must manage a commercial business based upon those assets. Historical investments by previous governments may be treated as sunk (with the exception of the Pindari Dam augmentation, water users have not contributed to construction costs). Today, State Water is expected to provide a rate of return on the same assets, which is not possible if the asset base is completely written off.

- **Life of major assets**

There are a number of ways to value large and long-lived physical assets such as dams, weirs and other water supply structures. These assets are similar in being fixed and long-lived. Such assets are assigned a 'life' for management and maintenance purposes, which generally reflects the period of time they are expected to last before needing replacement. In practice, however, such assets are not

[2] Bulk Water prices from 2005/06: Issues paper, IPART, July 2004

replaced in their entirety and some elements of large dams – earth or clay core dam walls, for instance – may last indefinitely. The period of the life in question is somewhat arbitrary and there has been much discussion about how it should be determined. In previous price determination, the Tribunal has reflected two general life cycles, namely the 100 year theoretical life before replacement, and the 30-year asset planning horizon.

The 100 year assumption of the life of major assets is reflected in the setting of depreciation at 1% (ie recovery of 100% over 100 years). The 30-year planning cycle gave rise to the annuity on a 30-year basis.

- **Methods for valuing major assets**

Different asset valuation methodologies are available for different purposes. The purpose determines the appropriate method.

The modern engineering estimated replacement of assets (MEERA) methodology is one which assesses the cost of replacing the assets with today's technology, to perform the same functions. Thus, different (newer) technology or design may be used to achieve the same result, and the cost may be lower than reproducing the asset that presently exists. However, modern regulations may increase the cost, when compared with the cost in the past. This methodology tells the business what it would cost to replace the assets if they were destroyed or lost today.

In theory, the business should provide for that cost. However, because of the long expectation of asset life and the low risk of failure in some assets, or some parts of the assets, it may be unnecessary to generate financial resources sufficient to replace the complete asset base. In other words, the cost of financing to that level, would be higher than the likely low risk of complete failure warrants. This is even more the case for State Water, which owns 18 large dams in different locations. The likelihood of complete replacement being required at any one time is extremely low. Nevertheless, the MEERA value must be determined for management reasons, to identify what is required in case of known replacement requirements. It performs an assets management purpose.

The gross MEERA value for State Water's total asset portfolio was estimated in 2001 at $2.3 billion.

The "Report of the Expert Group on Asset Valuation Methods and Cost Recovery Definitions for the Australian Water Industry" February 1995 identified the deprival value of assets as the appropriate basis for valuation for regulatory purposes. Deprival value is similar to the MEERA value in that it estimates the cost to the business of replacing the asset to maintain the services. In theory it allows the services to be provided in alternative ways, but in practice, bulk water supply could not be maintained without recreating a water storage of equivalent capacity. Hypothetically, two or three small storages might replace an existing large one, or vice-versa, but our assessment is that the current suite of storages are close to optimal in site and size.

Deprival value has been called the 'upper bound' valuation, meaning that if it is used to generate revenue, it will attract a higher level of funds than other methodologies, which are considered satisfactory for maintaining a water supply business. In theory, the business should aim to reach an 'upper bound' level of revenue. State Water, however, is not at full cost recovery for all operation, and there are considerable CSO programs. At present, State Water needs to develop a price path to reach full cost recovery at 'lower bound' levels.

Another valuation is the written-down cost, which simply represents the actual cost of construction depreciated to reflect the actual consumption of the asset to balance date. This value does not usually give a guide to the cost of replacement or any other contemporary cost.

Current accounting standards state that assets must be valued using the recoverable amounts test which is defined as the higher of:

- Net Fair Value (selling value less costs of selling)
- Value in use (the present value of future cash flows expected to be derived from assets or cash generating units)

As there is no ready market for the selling of State Water assets, they must be valued at their value in use. A review of the State Water business has determined that the value of assets should be $300M at 1 July 2004 based on certain expectations of revenue generated by the business from extractive users, non IPART customers and government contributions to bulk water delivery costs

- **Setting the RAB value**

The initial RAB at 1 July 2004 was calculated to provide a rate of return on assets that would not have an adverse impact on water prices in each valley. In other words, the RAB was set in accordance with the earning potential at current prices and expected allowable price increases. It allows for a rate of return of 6%, which is close to industry standards.

The two major components of the return on assets include firstly the return of assets, or depreciation, and the return on the assets. State Water as a commercial business, in line with its statement of corporate intent, is expected to deliver a return on its assets to the owners, namely the shareholding ministers.

A rate of return of 6% on a initial regulatory asset base of $300M and roll forward will generate a rate of return of $26.6 million from extractive users and government contribution in 2005/06.

RAB at this level would therefore generate revenues similar to current prices updated to 2005 requirements.

3.2.4 ALLOCATION AND RESPONSIBILITY FOR THE REGULATORY ASSET BASE

The total regulatory value of State Water's asset base needs to be split between government and customers; as well as by valley, representing the assets in each valley.

- **Government-customer split**

The RAB figure of $300 million at 1 July will be split between government and water users on the basis of past contributions to State Water's asset base. Allocation of 65% of opening RAB to government and 35% to water users reflects the current ratio of capital annuities between government and customers These proportions will change over time, in line with investments made by government under current cost sharing arrangement and customer revenue.

For a RAB of $300 million, the a government allocation is $195 million and a customer allocation of $105 million.

- **Valley split**

Split of RAB by valley provides the following asset values:

Table 2: Apportionment of RAB to valleys

Valley	RAB at 1 July 2004 $M	Revenue generation for 2005/06 $M[3]
Border rivers	*2.8*	*0.2*
Gwydir	*60.5*	*1.2*
Namoi	*62.2*	*1.0*
Peel	*13.4*	*0.3*
Macquarie	*39.7*	*1.3*
Lachlan	*30.2*	*1.1*
Murrumbidgee	*48.7*	*2.1*
Murray	*16.1*	*0.8*
Hunter	*20.1*	*1.0*
Minor coastal	*6.9*	*0.4*

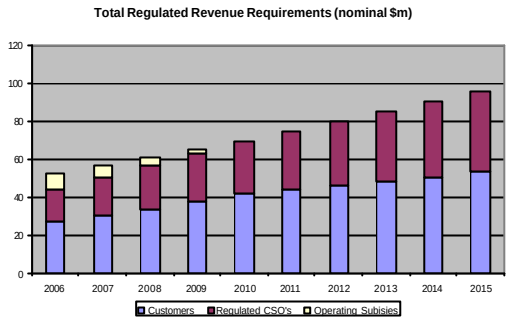
These values would be used to generate the total revenue by valley, and prices should be set to recover the amounts required in each valley.

3.2.5 CONCLUSIONS ON BUILDING BLOCK APPROACH

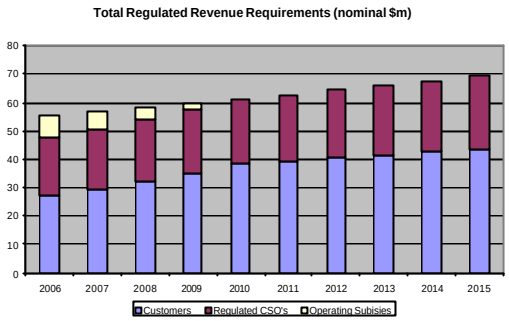
State Water's modelling shows that if the initial RAB is set at $300 million at 1 July 2004. With a rate of return on assets of 6%, State Water would generate a revenue equivalent to that derived from the current annuity. The two price paths would diverge over time, however, but the RAB generated returns would be set to more closely reflect actual budgeted costs in the short term. The revenue streams are shown in Figure 3 along with their impacts on prices.

[3] Revenue based on a 6% real rate of return, as discussed earlier from extractive users.

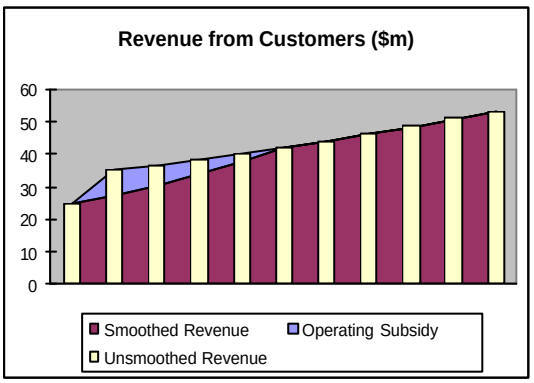
Figure 3: Comparison of revenue streams and prices paths resulting from annuity and building block approaches



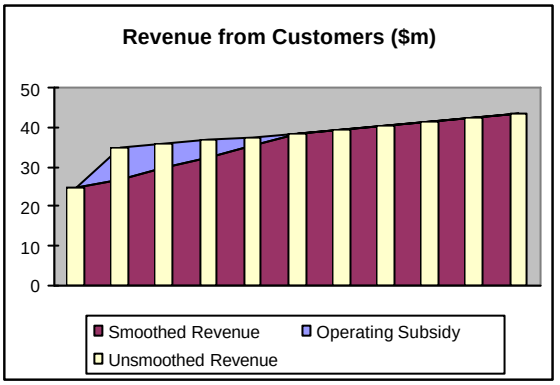
Revenue under building block approach



Revenue under updated annuity

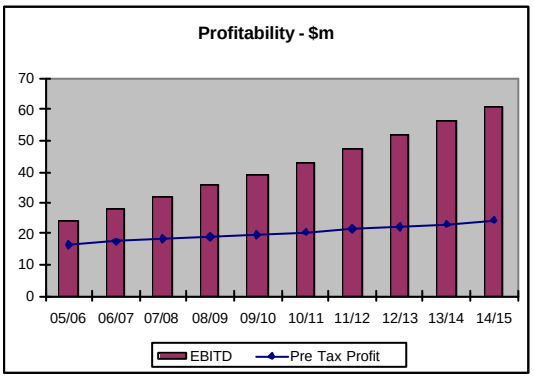


Prices under building block approach

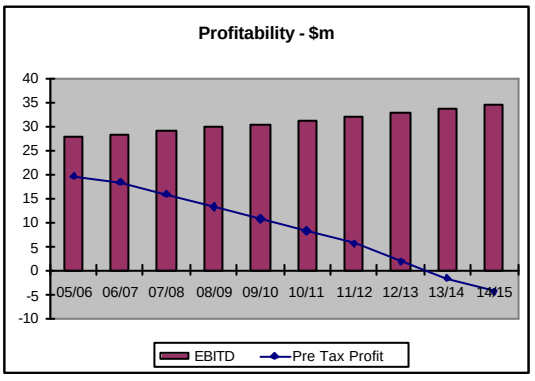


Prices under updated annuity

Source: Global and Corporate financial review of State Water.



Profitability under building block approach



Profitability under annuity approach

3.3 COST SHARES

3.3.1 Dam Safety Compliance Upgrades

The safety of dams relates to the protection of the population, the environment and the economy, impacted by a potential structural failure. The most significant capital expenditure item for State Water is the upgrading of dams to comply with current *Dams Safety Act* requirements. State Water must comply with the Act to meet current standards for flood, seismic and other failure modes. Based on a comprehensive risk assessment, State Water has planned to achieve compliance for the asset portfolio over the 30-year period, with major work planned within the first 15 years.

The dam safety compliance program is therefore based on a continual process of risk management, to minimise the total risk to the community, to State Water and to governments.

3.3.2 Nature of the State Water's dam security upgrade program

State Water owns, operates and manages one of the largest portfolio of dams and headworks in Australia. The operating environment includes statutory and regulatory requirements, economic and financial requirements, environmental and social requirements. These dynamic requirements impose various types and levels of risk for State Water to manage. State Water must exercise due diligence in minimising the total risk, through standard processes of compliance and risk management. State Water has adopted Total Asset Management Planning in accordance with Government Asset Planning requirements, to ensure due diligence in managing the total risk. A comprehensive Total Asset Management Plan (TAMP) is produced at regular intervals as part of the planning and review process. The 2004 version of the TAMP is attached to this IPART submission.

State Water has developed a CAPEX Program of $139M in the 3 year period 2005/06 to 2007/08.

As with all safety standards, whether OH&S or civil aviation, dam safety standards are continually revised based on assessment and evaluation of probability of failure, and consequence. A review of catchment hydrology is undertaken every 10 years or so, which may result in an increased flood safety standard. This could lead to a further upgrade to ensure compliance.

Based on a comprehensive knowledge of the assets and assessment, State Water has developed its 30 year TAMP and foreshadowed cost estimates to ensure compliance. The upgrade program and its funding are main drivers for revenue and finance, which will dominate State Water's financial program through the next two decades.

State Water is committed to undertake its compliance program to reduce risk to acceptable limits. The 5-year CAPEX program for dam safety upgrades is shown in Table 2.

Table 3: Annual costs ($M) of dam safety upgrades

Project	05/06	06/07	07/08	08/09	09/10
Blowering Dam	*4.5*	*0.2*	-	-	*0.3*
Burrendong Dam	*1.7*	*5.3*	*0.5*	*0.5*	*1.0*
Chaffey Dam	*1.0*	*5.0*	*3.0*	*2.0*	-
Copeton Dam	*0.4*	*0.4*	*0.4*	*0.4*	*2.0*
Glenbawn Dam	*0.1*	-	-	-	*0.2*
Glennies Creek Dam	*0.0*	*0.1*	*1.0*	*3.8*	-
Keepit Dam	*14.0*	*20.0*	*21.0*	*9.0*	-
Menindee Lakes	-	-	-	*0.1*	*5.0*
Pindari Dam	*0.0*	*0.1*	-	-	-

Project	05/06	06/07	07/08	08/09	09/10
Split Rock Dam	*0.5*	*0.6*	*3.7*	*8.0*	*12.0*
Toonumbar Dam	-	-	*0.1*	*0.1*	*0.1*
Windamere Dam	-	-	*0.1*	*0.5*	*0.9*
Wyangala Dam	*0.2*	*0.2*	*0.4*	*0.6*	*5.0*
Total	*22.4*	*31.9*	*30.2*	*25.0*	*26.5*

source: State Water TAMP2004

The Tribunal drew a 1997 "line in the sand" for asset valuation. At the same time, the Tribunal determined that the funding of dam safety compliance program would be 100% borne by Government based on the legacy nature of the large cost, public safety concerns and imposed societal risk standards. The legacy nature relates to the current condition of non-compliance resulting from past decisions relating to standards, design, construction, under-funding or indecision.

State Water agrees with the IPART position that the Government should continue to fund the legacy compliance upgrade works to bring the structures into compliance with 1997 standards.

However, once the current program of remediation has brought each structure to compliance with the 1997 standard, any further compliance upgrade costs will not be legacy costs. Cost of upgrades to standards beyond those prevailing in 1997 should be cost shared between water users and the government, based on the level of food mitigation benefit. Under the *SWCA2004* State Water is required to operate its assets for the purposes of flood management as a principal function.

The cost of dam safety upgrades at State Water dams has been determined by IPART as 100% government contribution. State Water is proposing that the current program of upgrades be completed under this arrangement, to bring the storages upto the 1997 standards.

State Water proposes that any future upgrade program costs should be shared by the beneficiaries.

Any other improvements unrelated to dam safety, such as increase in storage or valve capacity, and environmental improvements will be shared by the beneficiaries as per the specific ratios determined by IPART.

The issue to be resolved therefore is, how the safety upgrade costs of dams with flood mitigation capacity are to be shared.

All dams, whether they have gated spillways or fixed crest spillways, have a capacity to mitigate floods, by flattening the peaks and extending the duration. When inflows exceed this capacity, the dams pass through the full inflow. Dams with gates have a greater flexibility and can provide a higher degree of flood mitigation within their capacity.

Dams that have a prescribed flood mitigation capability have this incorporated in the design. This can be in the form of storage capacity in excess of full supply level as a flood airspace to store peak inflow, or a modified spillway structure that can throttle outflow, or a combination of both. The volume of flood airspace or size and configuration of spillway is designed to the required specification.

If the upgrading of any dam includes the increase of flood mitigation capacity over and above what would passively occur at the dam, this incremental cost will be identified for recovery from the beneficiaries. The works to provide the extra flood mitigation function and the incremental cost will be determined during Project Planning and Development in consultation with all stakeholders.

A number of beneficiaries can be identified:

The population and property immediately downstream of the dam: In most cases the maximum benefit of flood mitigation is derived closest to the dam site. The peak flood level resulting from flood mitigation at a dam will be much lower than from the peak of a natural flow.

Where the peak level may still cause inundation of homes and property, the delayed peak flood due to the dam will give the community and emergency services extra time to evacuate or put in place safety measures in the affected area.

Downstream public infrastructure and utilities: A lower flood peak will create less damage to public infrastructure such as rails, roads, buildings. It will lead to shorter periods of road closure and unavailability of utilities and services.

Downstream of major tributaries: The benefits of flood mitigation will depend on the combined effect of flows, and may diminish as the uncontrolled flood peak travels down the catchment.

The main disbenefit of flood mitigation is the reduction in the depth, duration and frequency of flooding of natural ecosystems, especially in the low to mid-range floods. In the western flowing rivers, however, the major floodplains and wetlands are significantly downstream of the storages and major tributaries.

Based on this rationale, State Water proposes that:

- The costs of dam safety upgrades should be shared 50% each by water users and Government, where the storage has the ability to actively mitigate flood impacts. This cost share recognises the value to the community of the flood mitigation capability of the storage, and, the value to the water users of the security of supply provided by the existence of the storage. The State Water storages with active flood mitigation capacity are the six gated dams Copeton, Keepit, Burrendong, Wyangala, Burrinjuck, Hume Dams and Glenbawn Dam, which has a flood airspace provision.
- For all storages without active flood mitigation capability, 100% of the future dam safety compliance cost will be borne by water users. This cost share recognises the value to the water users of the security of supply provided by the existence of the storage.
- For future upgrades, any **incremental** cost for incorporating flood mitigation over and above what would be achieved through the normal operation of the structure be deemed a community benefit and funded 100% by government.

3.3.3 Occupational Health and Safety Compliance

During the period of the last Determination, the legacy cost of OH&S compliance was $2M over 30 years on which the annuity was based**.** Through a targeted OH&S upgrade program, State Water has largely brought the structures and operations into compliance with the OH&S requirements by addressing the non-compliance legacy. There is some relatively minor expenditure still required in the next few years. State Water suggests that OH&S compliance is a normal cost of business and consequently future OH&S expenditure should be borne 100% by water users.

This is consistent with the previous determinations and recognises the distinction between legacy costs and normal costs of a business.

State Water's forecast OH&S expenditure for all valleys for 2005/06 to 2007/08 is $0.8M.

3.3.4 Environmental Compliance Costs

State Water does not propose any changes to environmental compliance cost shares, thus retaining the 50% share each to users and government. State Water does seek to distinguish the costs of environmental compliance as being those costs triggered by legislative requirements. Therefore, if State Water undertook modification of a weir and a fishway requirement was triggered, the cost of such a fishway would be shared 50% each by users and government.

If a third party sought to modify a weir and a fishway was required, the proponent or developer of the modification would be required to pay 100% of the cost of the fishway.

If works are undertaken voluntarily, for desirable environmental outcomes, but not triggered by a compliance requirement, State Water proposes that 100% of these costs be borne by the proponent or developer or beneficiary.

Once the modifications are completed, the new asset will be added to the State Water asset base, and is treated as any other asset, whereby the operating and maintenance costs as well as remaining lifecycle costs would be borne by the water users.

3.3.5 Cost of Hydrometric / Hydrographic Services

Under the Determinations 2 and 3, IPART allowed State Water to recover from water users, 70% of the full cost of the entire DIPNR Hydrometric Services. This meant water users paid 70% of DIPNR's total hydrometric costs for 818 gauging stations, which also provide information to a number of non-paying clients. Of these, 233 stations have customers who also pay for DIPNR services. State Water's regulated river operations only require 399 gauging stations. State Water is paying a disproportionate share of the costs and there is a significant hidden subsidy as is apparent from the under expenditure.

State Water proposes that 100% of the full cost of hydrometric services for the 399 stations be recovered from water users by State Water. By July 2005, the hydrometric network review will determine ownership and operation of the network. State Water will seek a purchase contract for relevant information from the owner or a third party (if network is not transferred to State Water). State Water does not agree with the DIPNR proposition that as the current owner of the network, they should be directly funded for the entire operation. This approach is diametrically opposed to the COAG as well as corporatisation principles. State Water's projected hydrometric costs are $3.9M per annum for the 399 stations.

3.4 HIGH SECURITY AND GENERAL SECURITY CHARGES

State Water proposes changes that will address cross subsidies between different water users in the same valley. These changes are revenue neutral to State Water, but are equitable to all water users within the valley and among valleys.

High security entitlement holders normally receive 100% of their entitlement, even in years when general security entitlement holders receive zero allocation. High security entitlement holders have an increased security due to two reasons – first, the Water Sharing Plans provide for priority allocation for high security accounts and secondly, State Water reserves enough water for delivering two years of high security supplies in storage. Consequently, State Water incurs an opportunity cost of not selling the water in the storages each year to the general security entitlement holders.

In addition, reserving two years of supply in the storage means that additional evaporation losses and transmission losses, resulting in a reduced volume to sell in Year 2, compared to the volume available for sale in Year 1.

Entitlement charges for high security are currently no greater than 1.7 times the charges for general security in any valley.

In some valleys when general security licences are converted to high security licences, it results in a reduction in State Water's revenue. This is due to the price differential being much lower than the conversion rate from general to high security.

These anomalies resulting in hidden cross subsidies between high security and general security entitlement holders should be redressed by the ratio of prices being determined on a more rational basis. The Valley Water Sharing Plans (WSP) specify the conversion rate between general and high security licences based on the premium of water availability under the plan (Table 3).

State Water proposes that the ratio of the high security to general security prices be based on the high security premium in the WSP adjusted to account for the opportunity cost and increased evaporation from holding the water for two years. State Water proposes to set the price for high security water at the *general security price* multiplied by the *HS access premium* in the water sharing plan multiplied by the *number of years* State Water is required to store water for HS users (this is generally two years).

There are a few exceptions to this approach.

- In the Murrumbidgee Valley Blowering dam is virtually emptied each year as Snowy Hydro guarantees to provide 1026 GL annually. Blowering Dam water is almost fully distributed each year to make room to store the water in the following year. Burrinjuck Dam is also drawn down in each year in the same manner so the opportunity cost of lost sales and the additional evaporation losses for this system are diluted to some extent.
- WSP have not been gazetted in the North Coast or South Coast valleys. State Water proposes that the ratios are based on the opportunity cost of holding water until Year 2 with attendant evaporation losses.
- There is no WSP for the Patterson sub-system, therefore the Hunter Valley WSP cannot be used. State Water proposes a ratio of 3:1.
- The Peel Valley does not have a Water Sharing Plan but the current arrangements regulate general security access to ensure compliance with the Murray-Darling Basin Cap. This level of general security access is a very small proportion of the general security entitlement. Therefore high security entitlements have a much higher access ratio relative to this valley's general security access ratio. The valley's water management rules also ensure two years of supply for high security.

Table 4: Proposed High Security to General Security Entitlement Price Ratio

Valley	Existing Ratios	Proposed Ratios
Border Rivers	*1.5*	*2.6*
Gwydir	*1.5*	*3.5*
Namoi	*1.5*	*2.2*
Peel	*1.7*	*13.46*
Lachlan	*1.5*	*4.9*
Macquarie	*1.3*	*3.8*
Murrumbidgee	*1.1*	*1.3*
Murray	*1.1*	*2.3*
Hunter	*1.4*	*4.5*
North Coast	*1.3*	*2.0*
South Coast	*1.3*	*2.0*
Patterson	*1.4*	*3*

These proposed changes are revenue neutral to State Water in valleys at full cost recovery. They will address inequities between water uses with different security of entitlement.

In the Peel Valley the additional cost to Tamworth Regional Council, based on capped price increases for high security would be $68K. In passing this charge on to their retail customers, based on average household usage for 2002/03 would result in an annual increase to the average water bill of approximately $2.68.

IN the Hunter Valley, Macquarie Generation will be affected by these price increases. Based on the capped water price for high security in the Hunter, this will add $90K to the charge to Macquarie Generation. This equates to approximately 0.02% of their 2002/03 costs (source Macquarie Generation 2002/03 annual report).

3.5 ENTITLEMENT AND USAGE CHARGES IN REGULATED RIVERS

The ratios of fixed to variable revenue currently vary from valley to valley. In the South Area, a higher proportion of State water's revenue is **fixed** (about 80%) while in the North Area a higher proportion is **variable,** ranging from 25% to 51%.

Most of State Water's costs are of fixed nature for the following reasons:

1. State Water does not sell water but charges for asset maintenance, water delivery and customer service. These costs are recovered on a dollar per ML basis.
2. State water does not purchase the raw material (rainfall), so the operational costs do not vary greatly with the volume of water delivered.
3. There is also an inverse relationship between available water and operating costs. During restricted supplies, compliance costs increase.
4. During droughts and low water levels, there is significant opportunity to carry out maintenance resulting in greater expenditure.

5. Downsizing number of operational staff in regional sites, in years of low income is highly risky due to the specialist skills required and inability to 'gear up' for a good year or a sudden flood event.
6. While some work can be deferred, this does not remove the need for the work, merely delaying the time of execution and potentially increasing costs. State Water has a programmed maintenance schedule which is reviewed each year and prior to carrying out major items.

As State Water's services are charged on a $/Megalitre basis (including fixed and variable) there is a common misconception that during droughts the customer's charges should reduce. There is a potential to examine the "$/Share" terminology for the fixed component, when the new Access Licences are issued.

State Water proposes that the ratio of entitlement revenue to usage revenue be standardised across the state at 60:40. This will have the impact of reducing charges in times of low allocation. The major beneficiary of this proposal will be the southern valleys which currently have a high ratio of fixed costs.

There is considerable variability in water availability year to year and the WSPs generally exaggerate the variability on availability. There are also limitations in using an Average (a measure of central tendency) water sales. State Water has analysed the last 100 years of availability data, and proposes that IPART adopt the long-term usage figure of 1 standard deviation below the 100 year average. This is particularly important in the context of the RAB with a three-year roll forward approach and a shorter period for reviewing investments.

3.6 WHOLESALE DISCOUNTS

The Tribunal has identified wholesale customer discounts as an issue for State Water's comment, in the 2004 Issues Paper. The Tribunal commented in the Issues Paper as follows:

The Tribunal concluded in the 1997 price determination that *'the costs incurred by* [then] *DLWC to deliver each megalitre of water to an area and district are lower on average than the costs of delivering water to a river pumper*'.

This was based on information provided by the [then] DLWC, which was responsible at the time for both water resources management and water supply.

State Water holds that the DLWC position is no longer appropriate and conflicts with the current situation. The DLWC position and that of its predecessor Dept of Water Resources (DWR) was influenced by land and water resource management responsibilities, review and audit of Land and Water Management Plans, supply of information on shallow groundwater extractions.

Removing the discounts will be near revenue neutral for State Water.

3.6.1 Original grounds for discounting.

State Water has reviewed the basis for wholesale discounts and the current arrangements. The 'wholesale' customers who receive entitlement charge discounts are irrigation companies, all of which were previously irrigation areas and districts directly administered by the department. Under previous arrangements, DLWC was responsible for managing water in the irrigation schemes up to the farm gate. When the schemes were privatised, irrigation companies took over the running of the schemes from the river diversion point and collected the information from individual farms and water users for water ordering. That information also enabled them to manage the flow of water within the schemes. Each irrigation company became a single customer of State Water at the time of their privatisation, with a

'bulk' entitlement that represents the accumulated rights or entitlements of water users within the scheme.

At no time did State Water have any role in any of these DWR or DLWC functions. This is still the case. Furthermore, while DWR and DLWC felt the need to be accountable for delivering water to the dethridge wheel, State Water has no such obligation, and deals only with the Irrigation Corporations as the customers, not the individuals within the corporation.

Following privatisation, irrigation companies continued to collect and provide information in two categories:

- monitoring data for land and water management plans, which were introduced as the regulatory tools for managing the environmental impacts of the schemes, and
- information on water demand and usage from users and the data on flow of water within the scheme: for the purposes of (a) ordering water from State Water and tracking its diversion, and (b) managing the flow of water within the schemes.

The first category of information is not relevant to State Water's needs but is a DIPNR responsibility under land and water management plans.

State Water only requires the Corporation's water orders and actual diversions, at the bulk level. The management of water within the Corporations' Area of Operations is their core business.

However, there are some complex physical systems, where water flow from and within irrigation schemes is relevant to State Water's supply capacity and obligations. These include:

(a) measurement of outflow from irrigation company schemes (for instance from Murrumbidgee Irrigation Pty Ltd to Wah Wah), where State Water needs to mange flow downstream of an irrigation company area;

(b) multi-purpose infrastructure and streamflow (for instance, Mulwala canal is used by State Water and the MDBC to pass flow past the Murray River Barmah Choke as well as to supply Murray Irrigation. State Water pays full costs to Murray Irrigation Limited and Coleambally Irrigation Corporation for use of their infrastructure if and when used by State Water)

In these circumstances, it may be argued that some irrigation companies provide additional information to State Water, which assists it to manage the physical flow of water throughout the watercourses connected with the schemes. State Water considers that, if irrigation companies believe they should be compensated for providing data, this should be a matter for agreement between them and State Water, and not for inequitable, differential discounting of water entitlement changes.

The current situation arose, State Water believes, because the withdrawal of the Department from management of the irrigation schemes meant it no longer collected individual's water demand and use information within the schemes. The argument was put that this shifted costs from the Department to the Private Companies. The Corporations need this information to manage their own schemes.

State Water contends that the wholesale discounts to Irrigation Corporations are a cross subsidy from river pumpers to the Corporations. The subsidy value of these discounts is approximately $5.5M per year even though not all Irrigation Corporation receive discounts.

Entitlement discounts are estimated at $5.5 million at proposed prices in 2003/04 for the Murray, Murrumbidgee and Lachlan valleys, as follows:

Table 5: Impact of discounts on 2003/04 prices and revenue

Valley	Valley price/ML		Discount price/ML		Revenue difference
	LS	HS	LS	HS	
Murray	*$5.16*	*$5.69*	*$3.10*	*$3.41*	*$3,374,961*
Murrumbidgee	*$3.97*	*$4.18*	*$2.82*	*$2.96*	*$2,020,826*
Lachlan	*$4.72*	*$7.09*	*$3.45*	*$5.18*	*$129,159*
Total					*$5,524,946*

The Tribunal concluded that the cost per megalitre of delivering water to the irrigation companies was less than to river pumpers. The difference in per-megalitre cost arises chiefly because of the volumes of water delivered –that it is cheaper per megalitre to deliver a larger volume than a smaller one. At peak periods, the opposite is true and over-bank losses may in fact be greater. However, it is not proposed that this principle be applied across the board (eg by increasing or reducing charges based on size of entitlement or modifying them when water is traded in or out of entitlements or irrigation companies). Therefore its preferential application to the irrigation companies is questionable.

This is inequitable for the river pumpers who subsidise those Irrigation Corporations on discounts and inconsistent for those Irrigation Corporations who do not get a discount. There are also confounding factors caused by water transfers among corporations and river pumpers resulting in hidden subsidies and loss of revenue to State Water.

All cost recovery for State Water is via the vehicle of a $/ML charge, whether it is fixed or variable. Even though the Corporations argue that specific inputs can be differentiated, such as metering cost for 1000ML being the same as for 1,000,000ML and thus warranting a discount, State Water argues that the $/ML charge is the differentiated value for the valley. This takes into account all input costs and produces the system rate and tariff.

Discounts for bulk purchases of a manufactured product are normally given due to increased purchasing power and economies of scale reducing the sellers costs. State Water's costs to supply a 10ML order to a river pumper are the same as supplying 1,000 ML to a Corporation.

There is no standard for determining which customers receive a discount. If discounts are to be provided should the threshold to qualify be 50 ML, 200 ML, 1,000ML, 100,000 ML pa or some other figure. As well as being inequitable the discounts are illogical.

It should also be noted that each irrigation company holds a single water entitlement and, from State Water's delivery perspective, is a single customer, not an aggregation of separate customers. In addition, State Water has greater operational inputs and incurs greater costs in ensuring the larger customers are adequately serviced and in smoothing the perturbations caused by the large water order variations of the large customers. As has been stated earlier, there are no economies of scale in bulk water delivery to pass on to large customers as discounts.

3.6.2 Recommendation

State Water proposes that:

- wholesale discounts are inappropriate and should be eliminated over the three years of the determination;
- If irrigation companies exchange services with State Water beyond (a) the information required to order water and monitor their bulk diversions and (b) to enable State Water to manage the impacts of their schemes on the regulated rivers. The cost of such information is a matter for negotiation with State Water and should be handled by contract, not as a discount against water entitlement charges.

3.7 PRICE PATH TO FULL COST RECOVERY

State Water proposes a price path from 2005 to 2008 towards full cost recovery, which requires the following changes to the methodology and price structures of the 2001 Determination:

- movement away from the 30-year annuity to an initial RAB of $300 million and Weighted Average Cost of Capital (WACC) of 6%,
- public-private cost shares in the 2001 determination to remain, except for:
    - OH&S costs from 50% users to 100% users
    - River gauging from 70% users to 100% users but on a changed cost base,
- price increase to reflect cost increases resulting from (a) costs specific to corporation, and (b) increases in efficient cost estimates since the 2001 determination,
- updated capital program, which spreads some projects across a longer period, and
- the proportions of fixed versus variable revenue should be consistent across valleys.

Note that for the Hunter, Peel, North Coast and South Coast valleys, because of the very low levels of cost-recovery, high security entitlement charges are proposed to increase without a balancing offset to general security charges.

3.7.1 PRICES FROM 2005 TO 2008

State Water proposes a price path which updates 2004/05 prices to reflect cost increases and changes to cost estimates in the Total Asset Management Plan (TAMP). Assumptions in the financial and pricing proposal are:

- a transitional operating subsidy from government to allow smoothing of the initial price path;
- revenue generated by a regulatory asset base (RAB), using the base case of around $300 million, which generates the same revenue as would be generated by the 30-year annuity in the year 2005/06: this reflects adjustment of the annuity to cover cost increases in the TAMP since 2001);
- public-private cost shares are not proposed to change, except for two capital elements:
- OH&S upgrades to be fully funded by customers (currently 50% funded by government) – as the catch-up program is now tailing off;
- River gauging from 70% users to 100% users
- a return on capital generated by a WACC of 6% (consistent with industry standard).

State Water is not proposing any change, at this stage, to the 50/50 sharing ration between government and customers for capital upgrades for environmental compliance.

On current modelled figures, this price regime will deliver customer revenue of $40 million, and government contribution and subsidy revenue of $30.1 million in 2005/06 – total revenue of $70.1 million in 2005/06, rising to $81.5 million in 2007/08. Proposed prices for each valley are shown in Table 3.

Table 5: Prices proposed by State Water for 2005 to 2008

	2005/06			2006/07			2007/08		
Valley	H/S	G/S	Use	H/S	G/S	Use	H/S	G/S	Use
Border rivers	*4.76*	*2.86*	*3.31*	*5.79*	*3.12*	*3.60*	*7.04*	*3.41*	*3.91*
Gwydir	*5.54*	*3.10*	*4.01*	*7.39*	*3.50*	*5.01*	*9.88*	*3.95*	*6.27*
Namoi	*10.11*	*6.23*	*7.29*	*13.01*	*7.42*	*8.48*	*16.75*	*8.83*	*9.87*
Peel	*14.39*	*4.50*	*10.23*	*20.19*	*4.50*	*12.79*	*28.33*	*4.50*	*15.98*
Macquarie	*4.90*	*3.04*	*4.63*	*6.73*	*3.38*	*5.79*	*9.24*	*3.76*	*7.24*
Lachlan	*7.54*	*3.95*	*5.41*	*10.03*	*4.15*	*6.76*	*13.34*	*4.35*	*8.45*
Murrumbidgee	*3.27*	*3.04*	*1.00*	*3.33*	*3.04*	*1.25*	*3.40*	*3.04*	*1.56*
Murray	*4.96*	*3.93*	*1.32*	*5.69*	*3.93*	*1.65*	*6.51*	*3.93*	*2.06*
North Coast	*14.12*	*9.05*	*6.03*	*21.18*	*11.31*	*7.54*	*31.77*	*14.14*	*9.43*
Hunter	*8.37*	*4.73*	*5.22*	*11.93*	*5.34*	*6.53*	*16.99*	*6.02*	*8.16*
South Coast	*13.93*	*9.06*	*6.04*	*20.58*	*11.33*	*7.55*	*30.42*	*14.16*	*9.44*

State Water expects that the long-term price path involves annual price increases in the order of 10% per year for ten years, followed by lower annual increases thereafter. Prices will be reviewed at each price determination period, and may be re-set if the Tribunal accepts future cost variations proposed by State Water.

Current modelling by State Water indicates that a reasonable level of price increase should deliver $40M for 2005/06 from water users. This leaves a shortfall of $13.2M, to be funded by Treasury as part of a transitional operating subsidy to maintain bulk water delivery in valleys with relatively small usage. The submission reduces this subsidy by half in the 3 years and to be phased out over five years. The proposed program of reducing the operating subsidy is shown in Table 6.

Table 6: Revenues and transitional operating subsidy ($M)

	2005/06	2006/07	2007/08
Customer revenue	*40.0*	*44.7*	*50.6*
Operating subsidy	*13.2*	*11.5*	*8.0*
Government Share	*16.9*	*19.5*	*22.9*
Total revenue	***404.27***	***362.27***	***332.38***

3.7.2 WATER USERS' CAPACITY TO PAY

In proposing a price path that includes some significant price rises each year from 2005 to 2008, State Water is aware that water users' ability to sustain such rises is an important question. State Water has not reinvestigated '*ability to pay*', or the impact of price rises on water users.

Demand for water for irrigation is known, from studies of water demand and use, to be remarkably inelastic – meaning that water demand does not decrease significantly with price increases. Even theoretical studies show that prices must reach extremely high levels before depressing water demand. There are various reasons for this, for instance:

- the cost of water as an input to production is generally only a small percentage of total input costs as shown in the Socio-economic study by NSW Agriculture in 2001. There is no reason to believe the validity of that study has changed since it was completed.
- the marginal value of water at most stages of agricultural production, after the initial decision to produce has been made, is much higher than the cost of supply (ie the disbenefit from not taking the water far outweighs the supply cost);
- water users can capitalise on water entitlements through water markets that pay significantly higher prices.

In connection with capacity to pay State Water makes the point that water users are charged retrospectively. State Water's practice has been annual billing in arrears, a practice that continues from decisions made in the past. Retrospective billing on an annual basis allows water users to capitalise on their water use before having to meet the cost of supply, thus making supply more affordable. Water users may recover the cost of supply through their own enterprise or by temporary or other water sales before having to meet State Water's supply charges. It is proposed to implement quarterly billing selectively with incentives, to reduce financial impacts on both the customers as well as State Water.

3.7.3 CURRENT LEVEL OF COST RECOVERY AND UNDER-RECOVERY

The current determination set prices to achieve full cost recovery for operational expenditure in all valleys except for four, which are Peel, Hunter, North coast (Toonumbar), and South Coast (Brogo). Under-recovery is occurring in all coastal valleys and the Peel valley, which has been accounted separately from the Namoi valley, although Chaffey dam is located within the Namoi System. The strategies proposed by State Water are:

- **HUNTER AND PEEL VALLEYS**

Cost recovery in the Hunter and Peel valleys based on prices determined for 2003/04 was 53% and 55%. Water entitlements in both valleys are dominated by high security entitlement, in particular, Macquarie Generation and Tamworth City Council. The total volume of entitlement in the Peel Valley is 48GL, and of that, 36% is high security entitlement. In the Hunter Valley the total entitlement is 200GL of which 35% is high security. The highest ratio for any of the remaining valleys is in the Murrumbidgee, which has 15%. The proposed prices for high security water will bring the Hunter and Peel closer to cost recovery.

State Water believes that general security users are subsidising high security users through water charges. This is because:

- general security licence holders must give up more than 1ML to convert to 1ML of high security water;

- in most valleys, 2 years of supply for high security water must be reserved before general security water is allocated;
- a considerable volume of the high security water is for industrial (energy) and town water supply, both of which have a higher priority than high security entitlement for irrigation.

On the basis of the value of high security entitlements, State Water believes that an increase in the price differential is warranted

The impact of the proposed increase on high security entitlement charges is shown in Table 7.

Table 7: Impact of increase in high security entitlement charge in the Hunter valley

	2005/06	2006/07	2007/08
Price path – no increase above current	*5.88*	*5.88*	*5.88*
Price path – re-set entitlement charge	*8.37*	*11.93*	*16.99*

Impact of increase in high security entitlement charge in the Peel valley

	2005/06	2006/07	2007/08
Price path – no increase above current	*10.26*	*10.26*	*10.26*
Price path – re-set entitlement charge	*14.39*	*20.190*	*28.33*

- **MINOR COASTAL VALLEYS**

Both The North Coast and South Coast valleys are under-recovering costs by significant amounts. The Iron Pot Creek rate of recovery is 11% and Bega River is 35%. Neither valley has a sufficient customer base to achieve cost-recovery without a large increase in water prices. This is illustrated in Table 8.

Table 8: Water entitlements, water use and costs in Iron Pot Creek and Bega River

	number of customers	entitlement volume GL	annual cost 2005/06 $M	full cost price HS	full cost price GS	full cost price use
North Coast	*43*	*8*	*0.9*	*116.23*	*77.49*	*441.40*
South Coast	*63*	*15*	*0.9*	*66.40*	*44.27*	*77.72*

It is not realistically possible to recover the full cost of annual operation and maintenance costs from water users in these valleys until the ability to pay improves significantly through new production opportunities. It would require price increases well beyond levels that anyone is likely to tolerate.

Possible strategies are:

- move towards full cost recovery over a period of time and make up the cost difference from other sources in the meantime: at an annual increase rate of greater than 25% per year, State Water estimates that full cost recovery would not be reached in the next 6 years;
- increase prices in the short term to full cost recovery levels: such increases would not be sustainable in State Water's view;
- move to modify the level of service, decommission or find alternative uses for the assets.

4 FULL COSTS

State Water collects revenue from water users whose water deliveries are provided partly through other organisations. The most important is the Murray-Darling Basin Commission. A similar situation applies to some of the water delivered in the Border Rivers from works of the Dumaresq-Barwon Border Rivers Commission (DBBRC). State Water also provides some services to irrigation areas and schemes in NSW.

4.1 MURRAY-DARLING BASIN COMMISSION COST AND FINANCING BASIS

4.1.1 Background

In the 2001 Report, the Tribunal discussed the allocation of Murray-Darling Basin costs. Since 2001, the institutional changes to State Water have also changed the way in which various costs may be allocated between State Water and DIPNR. Much of the discussion revolved around the allocation of water management costs. This submission deals only with water supply costs, which are those costs assigned to River Murray Water, RMW.

Water prices in the Murray valley and Lower Darling valley include the cost to NSW of the works of the RMW in those two valleys. Under the Murray-Darling Basin Agreement, the River Murray is defined to include all works in the Murray valley in NSW, Victoria and South Australia, and also to include the Menindee Lakes storages and works downstream of the lakes, on the Darling River.

The Murray-Darling Basin Agreement creates an inter-jurisdictional arrangement to enable joint State and Commonwealth construction of works for water supply and other purposes on the Murray, which is an inter-jurisdictional river. This arrangement commences with the former River Murray Commission and has been continued under the MDBC, which was established in 1985. The States agreed to classify all the works on the River Murray itself works of the MDBC. Some works are situated in a particular State (eg Menindee Lakes in NSW, Murray weirs and barrages in South Australia), while other works are shared between NSW and Victoria. All of the works listed in the Murray-Darling Basin Agreement as works of the Commission are subject to an inter-jurisdictional management and funding process (wherever they are situated). The terms of management are described below.

In 1995, the MDBC agreed to separate its activities into two parts: natural resources management and management of the Murray River and its works. This led to the creation of River Murray Water (RMW), which acts as the manager of the structural and water delivery responsibilities of the MDBC. RMW reports to the Chief Executive of the office of the MDBC and in turn to the Commission and Murray-Darling Basin Ministerial Council. At the same time the rest of the office of the MDBC reports to the Commission and Council also, but business for each is kept separate.

4.1.2 Management arrangements for River Murray works

All the works on the River Murray System are awned by various states. Under the Murray-Darling Basin Agreement, the ownership responsibilities of necessary works were vested with the MDBC. Under the agreement, each participating State's Constructing Authority is responsible for construction, operation and maintenance of specific works under contract to RMW. Thus, State Water as the NSW Constructing Authority is assigned responsibility for Hume Dam, Euston Weir, Wentworth Weir with Menindee Lakes and the Lower Darling works. Victoria is responsible for Dartmouth Dam, Yarrawonga Weir and other works. South Australia is responsible for all works in that state. Each State contributes

an agreed percentage of the total program for the entire system, not just for the specific activities occurring in their own jurisdictions.

It was agreed in the M-DB Agreement that, the commonwealth contributes 25% total capital expenditure and 0% of operating and maintenance costs; and that the State Contributions fund the remaining 75% of capital. The agreement requires NSW to pay 40% of the State Contributions towards capital; and that NSW should pay 40% for operations and maintenance. This sharing was roughly based on water extractions and costs and benefits of various assets.

This led to a formula in which NSW pays 30% of total capital programs (40% of 75%), and 40% of all operations and maintenance funding.

4.1.3 Natural resources management activities

The formula described above applies only to programs associated with the works of the MDBC on the River Murray (including the Lower Darling). Natural resources management activities are funded separately and each jurisdiction shares the costs on a fixed basis. NSW pays 25% of total MDBC natural resources management programs.

The funding formula is shown in Table 9.

Table 9: Current financial contributions by NSW and others to MDBC programs

Jurisdiction	Natural resources management	Murray Works capital (construction)	Murray Works (operating)
Commonwealth	*25%*	*25%*	*Not applicable*
New South Wales	*25%*	*40% of 75%*	*40%*
Victoria	*25%*	*36% of 75%*	*36%*
South Australia	*25%*	*24% of 75%*	*24%*

Thus, the NSW total contribution to MDBC programs is separated into:

- natural resources management (25% of total),
- River Murray works construction (30% = 40% of 75%), and
- River Murray works operation and maintenance (40% of total).

The NSW Government contribution to (b) and (c) are relevant to the prices that should be charged to water users for the use of the River Murray works.

4.1.4 Providing water delivery services to NSW Murray users

For NSW Murray customers, both River Murray Water and State Water provide water delivery services. River Murray Water (which is the water business unit of the MDBC) provides some services, because the Murray-Darling Basin Agreement stipulates that the Commission has responsibilities for the River Murray Works and also for water accounting for the states. River Murray Water therefore manages information and water accounting systems to manage the demands and diversion of water by its 3 customer States. It also specifies to state dam operators amount and timing of water releases to satisfy water orders from water users in all three States. RMW therefore provides the decision support system services of the 'River Operations' function.

In the NSW Murray Valley, State Water performs all other activities that it undertakes in other NSW valleys with the following modifications:

- State Water passes on a compiled NSW water order to River Murray Water who then process the accounts for all 3 states, calculate the dam and weir releases required, and advise State Water of discharge, timing and duration from;
- State Water manages and operates only Hume Dam, Wentworth and Euston Weirs - the works which are assigned to NSW under the Murray-Darling Basin Agreement and not other works which may be equally relevant to water storage and delivery;
- State Water manages and operates the assigned works on behalf of River Murray Water.

Within NSW, State Water meters water usage, takes water orders and bills water users as in other valleys. Activities undertaken on behalf of Murray valley water users in NSW are shown in Table 10.

Table 10: Basis for estimating full cost recovery in the NSW Murray valley

Activity	How allocated	How recovered
State Water Murray valley activities	Included in water charge to Murray valley water users	Recovered from water users in the Murray valley
NSW proportion of MDBC asset management	Applied to Murray valley water users on agreed inter-jurisdiction proportion basis	
NSW proportion of MDBC dam and river operation		
State Water activities on behalf of MDBC (RMW)	Not charged to Murray users	Recovered from River Murray Water

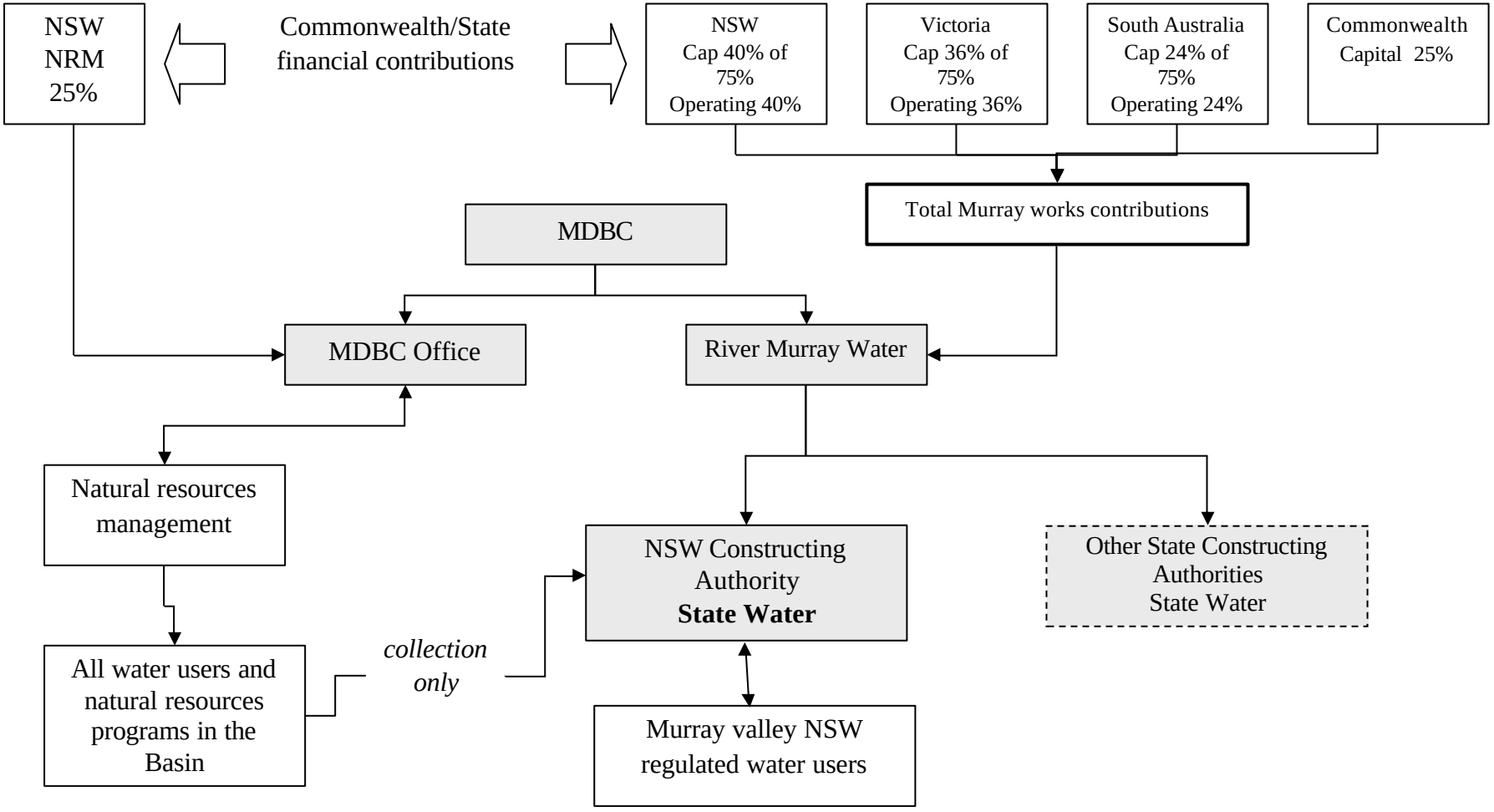
It is clear that the cost of activities undertaken by State Water in the Murray valley and Lower Darling that are (a) relevant to water delivery and (b) undertaken for NSW water users, do not reflect the total costs of water services provided to Murray valley water users in NSW. Firstly, State Water is responsible for only part of the water delivery system. Secondly, State Water's activities benefit not only water users in NSW, but also water users in Victoria and South Australia, and the same is true of the activities of the constructing authorities of the other States. For these reasons, State Water's annual expenditures on MDBC works are not a reasonable basis for determining water prices for regulated water users in the Murray valley.

4.1.5 Approach to MDBC program cost recovery

The philosophy behind the pricing proposals for the Murray valley is that NSW, as a State, should recover all of its contributions to River Murray works programs of the MDBC that are attributable to extractive users. This is considered reasonable, because:

- the inter-jurisdictional funding percentages are a negotiated cost sharing formula designed to assign a reasonable proportion of costs between NSW and the other States;
- State Water's annual costs in the Murray valley do not reflect the actual costs that would apply to NSW water users if all Murray valley users are taken into account.

Figure 4: River Murray Water funding process



Recovering the full amount of the NSW contributions for River Murray works satisfies the full-cost recovery principle, demanded by the COAG agreements. Natural resources management contributions may be recovered, but they apply to a wider clientele than Murray water users and are a matter for DIPNR to determine. Any involvement of State Water in natural resources management charges is limited to collection of revenue on behalf of DIPNR.

4.1.6 Financial arrangements for the Murray Darling Basin

The current arrangements are as shown in Figure 4, which shows that State and Commonwealth contributions are made to River Murray Water according to the formula annually. The precise amounts of the contributions are determined by the agreed annual budget, which is approved by the Ministerial Council and Commission

4.1.7 Basis for estimating Murray River water prices

In NSW, the total amount of water charges for all regulated water users in the Murray valley, including the Lower Darling, includes the NSW contributions to Murray works, as controlled by River Murray Water, during the period in question.

Concern has been expressed about the lack of transparency in submissions for and the implementation of MDBC water charges. In State Water's view, these concerns are because of uncertainty about:

(a) potential cross-over of natural resources management costs into pricing formulas, resulting for a lack of transparency in funding arrangements;

(b) the basis for the cost shares assigned to NSW and other States.

Now that State Water has been separated from DIPNR, the potential for inclusion of hidden resource management costs is eliminated. As stated earlier, all the natural resources management programs of the MDBC are assigned to the Office of the Commission (not River Murray Water) and recovered by the MDBC from governments directly. Any charges levied by the NSW Government to recover the costs of these programs would be separate from State Water (except that State Water may issue water accounts and redirect the revenue to MDBC).

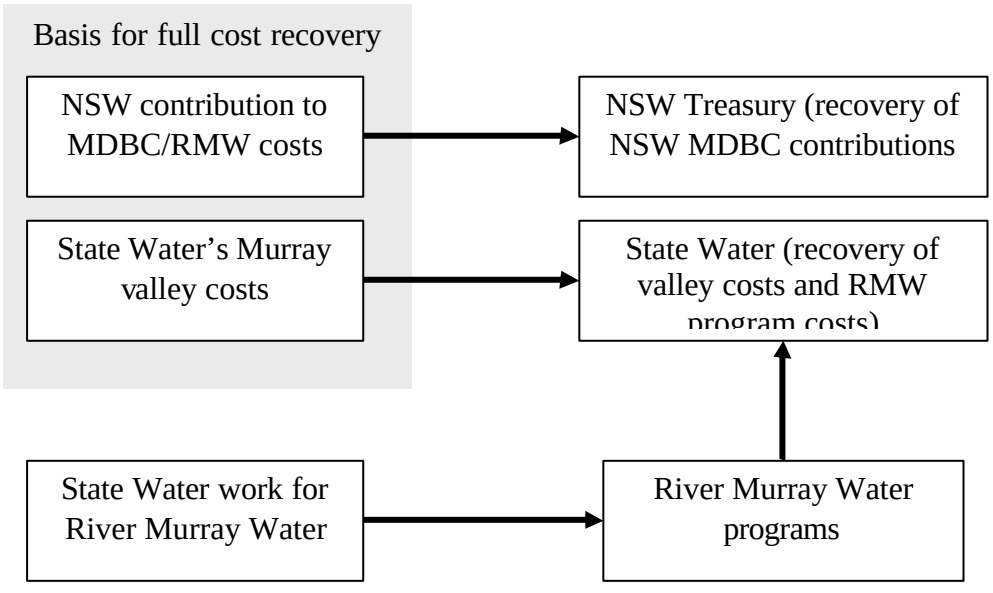
Secondly, the basis for assessing NSW percentage of the total Murray River benefits could be investigated, but the following points need to be considered carefully first:

- this matter was extensively considered by the MDBC and each state in 1998, and the resulting formula represents a position that the NSW Government believed was reasonable at the time;
- the current funding arrangements contain Commonwealth funding of 25% of capital programs, none of which is being recovered or reflected in Murray valley prices;
- due to the complexity of the total Murray River system in all States, there is no guarantee that a review would result in the NSW share being reduced.

Table 11: Outline of Murray Valley costs and finances

NSW MDBC contributions	% allocation to water users
40% of water storage and supply operation	*100%*
40% of navigation	*100%*
40% of 75% of storage and supply construction	*100%*
40% of salinity mitigation	*10%*
40% of 75% of salinity mitigation construction	*10%*
40% of navigation	*0%*
State Water Murray valley costs	
Metering, water ordering, billing, compliance	*100%*
Non-MDBC river operations	*100%*

Figure 5: Components of full cost recovery for Murray Valley



State Water recommends that the method for calculating Murray valley water prices remains unchanged, as follows:

- based on forward budget estimates provided by River Murray Water of costs for the period 2005-08, the NSW contributions can be assessed;

- the NSW contributions for those years are used to set the target amounts for full cost recovery,
- water prices and tariff structure are constructed to provide equivalent revenues from all Murray water users, based on fixed charges plus estimated sales in an average year.

State Water's proposed price path for the Murray valley in this submission has been developed on this basis. The costs are shown in Table 12.

Table 12: Murray valley cost estimates for 2005/08

Cost element	2005/06	2006/07	2007/08
NSW proportion of RMW capital annuity	*7.5*	*7.5*	*7.5*
NSW proportion of RMW operation budget	*6.7*	*6.9*	*7.0*
State Water Return on/of capital	*1.4*	*1.5*	*1.6*
State Water valley activities	*2.6*	*2.7*	*2.8*
Total valley costs	*18.2*	*18.6*	*18.9*

4.2 DUMARESQ-BARWON BORDER RIVERS COMMISSION

The Dumaresq-Barwon Border Rivers Commission (BRC) is the inter-jurisdictional body with NSW and Queensland membership, that oversees the joint management of water supply works along the State border. It performs a similar function to that of the former River Murray Commission. The BRC possesses one headwork dam, Glenlyon, situated in Queensland, which provides the regulated supply of water in the Border Rivers downstream to Mungindi.

The two States have entered into an agreement for sharing the costs of operation and capital programs for Glenlyon Dam and other river structures, equally. The agreement also apportions the flow from storage in Glenlyon Dam. NSW, State Water, takes responsibility for operating and maintaining Boggabilla Weir.

Water users on the NSW side of the Border Rivers are also supplied from Pindari dam, which is wholly owned by State Water as a NSW asset. Regulated river water users on the Border Rivers receive water from combined sources managed by the BRC and by State Water.

The calculation of full cost recovery should follow the same methodology as for the Murray valley. Water users supplied from both BRC and State Water (Pindari dam), would contribute as shown in Table 14. The BRC costs applicable to the Border Rivers are shown in Table 14.

Table 13: Cost elements and cost recovery for Border Rivers water users.

Cost elements		How recovered
NSW contributions to cost of BRC water supply	Total cost of water supply for Border River water users raised through water charges	State Water collects and returns to NSW Treasury
Capital and operation costs applicable to Pindari Dam		State Water collects and retains revenue
State Water valley activities on behalf of water users		State Water collects and retains revenue
State Water activities undertaken for BRC	Cost of State Water work for Border Rivers Commission	State Water recovers from Border Rivers Commission
Water management charge	Levied on all NSW water users against government water management activity	State Water collects and passes to DIPNR

Table 14: Border Rivers Commission costs applicable to NSW water users $M

Cost element	2005/06	2006/07	2007/08
50% of BRC capital annuity	*0.1*	*0.1*	*0.1*
50% of BRC operation budget	*0.6*	*0.6*	*0.6*
Total cost	*0.7*	*0.7*	*0.7*

4.3 ISOLATING REGULATED WATER SUPPLY COSTS

Since the separation of State Water from DIPNR, and the separation from State Water of primary responsibility for any element of NSW water resources management programs, all the costs identified in this submission are costs related to the operational supply of rural bulk water services to water users.

The former split of programs between the Department and State Water is no longer necessary. State Water incurs costs in three categories:

1. costs of State Water's own activities in supplying water,
2. services purchased by State Water from other sources, including DIPNR, which are necessary for the purposes of supplying water, and
3. costs of activities which State Water undertakes on behalf of programs funded by other agencies, including DIPNR.

A fourth category could be costs related to water resources management in which State Water has no involvement at all.

4.4 THE COST OF SUPPLYING WATER

The costs of supplying water fall into two major categories – the costs of operating the asset system and dealing with customers (operation costs), and the costs of maintaining the assets. (Capital costs). These costs are almost completely fixed, in that:

- the cost of operation and routine maintenance from year to year does not reduce with reduced water sales, but may increase in times of low sales, when additional maintenance opportunities arise, or when increased compliance activity is necessary;
- the capital program does not follow patterns of water sales, but is developed and planned independently.

Such costs however are discretionary in nature. In any year when revenue is below expectations, it may be possible to delay certain expenditure without any discernible affect on the business. This practice though will only defer costs to a later date at which time they are generally more expensive to undertake and may defer other projects. Doing this over an extended period of time will have a detrimental effect on water prices in future years.

4.5 STATE WATER'S EFFICIENT COSTS

The price path proposed by State Water is based on efficient costs for operation and maintenance, and the capital program, as determined by the Tribunal in 2001, updated to reflect cost increases since 2001. However, State Water reduced its maintenance program and other expenditure by around $3-$4 million per year from 2001-2004 because:

- access to funds have been limited, and
- water sales have been below estimates.

As a result, State Water has reduced maintenance and other activities. The valley accounts provided by State Water reflect this recent shortfall in expenditure.

4.6 IMPLICATIONS OF CORPORATISATION

These instruments impose new financial and management disciplines on State Water. In particular, State Water is now subject to financial arrangements that more closely reflect those of the private sector. This is a significant change from the previous financial regime, where:

- State Water's accounting information was managed as part of the Department's financial system,
- State Water did not have the stand-alone ability to incur debt or finance through borrowings,
- State Water received annual budget allocations, in line with Tribunal price determinations, but where shortfalls could not be made up;
- State Water required 'external' departmental approval for significant expenditure and did not fully control the management of its finances.

State Water is now required to act in a mode similar to an independent business enterprise. For these reasons, financial sustainability attains an importance that it did not previously have. State Water must:

- carry debt and manage its capital structure and debt servicing capacity in order to maintain an investment grade credit rating;

- maintain a sustainable cash-flow position in the short and medium term, regardless of long-term revenue projections;
- carefully evaluate different financial management strategies and factor these into its financial calculations of the cost of financing.

These requirements place State Water in a position where long-term financial sustainability is a critical factor.

State Water is also subject to regular performance audits, to be carried out the by the Tribunal, as required by legislation and the interim operating licence.

4.6.1 ADDITIONAL COSTS OF CORPORATISATION

The additional costs included in the submission involve costs associated with corporate governance, change management, the running of the Board, additional staffing to take over responsibilities previously undertaken by DIPNR. These are offset by savings made by State Water by not using DIPNR for Corporate support. This has added approximately $2.7M to the cost base for State Water.

State Water is also in the process of identifying a new financial management system. This is estimated at $2.0M, which will be added to the asset base.

New or Additional Annual Item	**$M**
Board of Directors	*0.5*
Information & Management Staff and Systems	*1.0*
Finance and Accounting Staff	*0.3*
Human Resources, Industrial Relations, Payroll and Purchasing	*0.3*
Property and Facilities Management	*0.1*
Legal Systems and Staff	*1.4*
Chief Executive and Senior Managers	*0.4*
New Corporate Office Premises in Dubbo	*0.1*
Total Costs	***4.1***
Cost Reductions	
Identified savings from discontinued services from DIPNR	*1.4*
Net Increase	***2.7***

4.7 THE APPLICATION OF COST-REFLECTIVITY

The Tribunal's price setting role requires it to ensure that prices and revenue collected for services reflect the actual costs of those services and that the projected costs are '*efficient economic costs*' in the Tribunal's definition. Efficient economic costs may be estimated for the business as a whole or may be applied to particular segments of the business.

Cost-reflectivity can be applied to State Water's services in a number of ways:

- to the business as a whole, reflecting total costs;
- to recurrent and capital programs, reflecting annual operational and management costs, versus longer-term capital projects;
- to each valley in which the services are provided;
- against different service products, such as volumes of water for delivery, high security entitlement fixed costs or normal security entitlement fixed costs.

The Tribunal has used all these categories to identify maximum prices in previous determinations. However, the Issues Paper raised the question of statewide versus valley prices, which could result in a move away from reflecting all costs at the valley level.

4.7.1 Total costs

The total cost of the business (as deemed by the Tribunal to represent an efficient economic cost) defines the revenue that water users as a whole should pay. This addresses the monopoly issue – where otherwise State Water could charge what it liked. It is necessary to identify State Water's recurrent and capital programs separately for a number of reasons. The benefits provided by each are directed to different aspects of the business. The recurrent program maintains State Water' assets and provides for operation, which is the annual water delivery function. The capital program, in contrast, maintains the asset base and improves it. Annual capital costs do not relate specifically to services provided in the same year. Therefore, it is reasonable that recurrent and capital program costs be accurately reflected in the charges and revenue collection for each.

4.7.2 State-wide and valley costs

Historically, the Tribunal has been careful to assign all valley costs to each valley. This is because the infrastructure in each valley is generally unconnected with infrastructure on other valleys. More importantly, water users see their own valley facilities as relating to their costs and have been opposed to the spreading of costs more widely, which is considered to be cross-subsidising others.

Valley prices in the 2001 price determination reflect actual costs in each valley at the point where 100% cost recovery is reached. The prices include those elements of the capital program that apply to each valley and to which water users are contributing. State Water believes that, in general, this approach should continue.

At present two small valleys are under-recovering operation and recurrent asset costs. Full recovery of these costs is only possible with very large percentage increases in charges in these valleys. If such increases are not granted, State Water must make up the cost difference in other ways.

State Water believes that the major capital cost element – dam compliance upgrade for flood and seismic stability, which has been fully funded by government until now – should continue to be funded by government until each dam is upgraded to an acceptable standard at which time extractive users will be expected to contribute a greater share of the costs. State Water also considers that such costs should be directly attributed to the valley in which they are incurred

4.7.3 Cost reflectivity by service product

Having assigned costs of the business to each valley, it is necessary to develop prices for the different products and to determine the tariff structure for those products. The water sector must apply two-part tariffs in the interests of sending price signals to water users. Therefore a fixed and a variable price are necessary. The split between these elements is not decided on a cost-reflective basis, since State Water is effectively a 100% fixed cost business.

State Water is a fixed cost business because:

- operation costs do not alter in line with the level of sales, as storage and river operation are required to a similar degree in high and low sales conditions;
- State Water can incur higher compliance costs at times of water scarcity when sales are low;
- storage maintenance costs do not follow water delivery patterns, and opportunities for some maintenance only arise when water levels in storage are low;
- capital spending on major assets is uneven and its pattern is not related to the volumes of water delivered in any year.

The proportions of fixed and variable charge therefore do not reflect cost patterns, but are decided by balancing the need to maintain a significant variable component for water conservation reasons, and the competing need of State Water for revenue stability. The fixed versus variable price is discussed in section 3.5.

State Water provides water delivery services in the form of different products, namely delivery against high security and normal security entitlements. Based on the transfer market values, the value of a megalitre of high security entitlement is significantly greater than the value of a ML of normal security. Previous calculations of the cost differential have resulted in prices that do not vary greatly in most valleys because only the costs were considered. Yet the value of high security water is far greater than normal security water because of the greater security of supply every year. State Water therefore considers that cost alone is an insufficient basis for setting the prices of products and that the notion of value should also be included.

4.8 ASSET MANAGEMENT AND CAPITAL PROGRAM

State Water has developed a Total Asset Management Plan (TAMP), which forms the basis for capital expenditure estimates for State Water's business. The TAMP presents a 30 year planning profile and in 2000 it was used to calculate the costs, over the same period on which the capital annuity is based.

The capital program of State Water is based on the project estimates in the TAMP. However, the capital projects included in the estimates in the TAMP have differing characteristics. The TAMP is being continually updated to reflect improved knowledge and understanding, improved engineering design, negotiated outcomes for capital projects, and updated costs. TAMP2004 as of 30 June 2004 is the basis for the costs identified in this submission.

4.8.1 Capital expenditure review

The TAMP was reviewed in 2001, for the Tribunal by PriceWaterhouseCoopers (PwC) who produced a report entitled '*Review of Capital and Operating Expenditure in the NSW Department of Land and Water Conservation's State Water Business*' (PwC Review). PwC asked: the following questions:

- whether expenditure was necessary, and

- if expenditure was necessary, whether the outputs could be provided more efficiently.

The PwC Review classified capital expenditure according to three '*prime drivers*', namely:

- renewals (replacement or rehabilitation of assets and/or their components),
- regulatory compliance (environmental, OH&S, dam safety),
- enhancement (increasing bulk water delivery capacity).

PWC concluded that State Water's intensive renewals and rehabilitation program *'results from the identification, through independent audit, of a material level of deterioration of water infrastructure, resulting from inadequate maintenance over a long period of time*'. PwC was concerned that in the latter years of the 30 year TAMP '*there may be insufficient allowance for renewals*'.

For compliance costs, PwC identified that the TAMP figures were based on best estimates in a situation of considerable uncertainty and that it did not include all work being requested by regulatory agencies at the time (DEC and Fisheries). PwC recommended updating the cost estimates for the two dam programs (Keepit and Chaffey) and also proposed that the timing of projects be extended, as the proposed timing appeared ambitious.

The bulk of the reductions were the result of proposed changes in the timing of capital projects. However, a total of around $3 million was taken from State Water's global operational cost estimates.

PwC noted that customers and stakeholders complained that DLWC overheads were unreasonably increasing costs to State Water. Following separation, those overheads no longer apply. State Water now attracts other costs, namely the cost of complying with regulations which did not previously apply. This includes the cost of compliance with the Operating Licence issued by the Portfolio Minister and Works Approvals to be issued by DIPNR.

4.8.2 Factors affecting the TAMP as a cost estimation tool

State Water's Total Asset Management Plan covers 18 major dams and some 400+ weirs, regulators and associated structures. The major dams, in particular, pose particular challenges for long-term planning and estimation of cost. The major capital infrastructure has a total deprival value estimated at $1.9 billion, meaning the estimated cost of replacing today's asset with a new set of assets capable of performing the same functions and providing the same services. State Water expects to be required to rehabilitate or upgrade the major dams from time to time, and such projects can be expected to involve significant costs. However, it is not possible to predict some important design requirements and cost elements of such project very far in advance.

Costs estimated in the TAMP can be separated into those that are reasonable well known and those that are more subject to change. Major periodic maintenance (MPM) is based on understood project development criteria, which reflect knowledge of the existing assets and the time frame for periodic major work. Such work will occur at varying and can be planned with relative confidence.

The categories of capital expenditure to meet regulatory requirements are:

- occupation health and safety (OH&S),
- environmental upgrades for fish passage,
- environmental upgrades for thermal pollution,
- dam security upgrades (flood and seismic stability).

Forecasts in the TAMP for the period of the next price determination (3-5 years) are relatively firm, although some elements of project design may be subject to change due to changes in regulators' requirements or the outcomes of negotiation on community objectives.[4] Projects scheduled 5-10 years ahead may be further shaped by decisions about their objectives which could alter design criteria and they are more likely to change. Project estimates beyond 10 years are very coarse.

The level of long-term uncertainty for major capital programs has implications for the use of the TAMP as the basis for setting the annuity. Cost estimates for the second half of the planning period (from 15-30 years from the present) are relatively reliable for MPM, but State Water does not consider them to be a good guide to cost estimation for major upgrade work to meet contemporary standards. The implication is that an annuity based on the TAMP must be re-set regularly to deal with changes in cost estimates over the 30 year period.

4.8.3 Current Total Asset Management Plan

The Tribunal has already expressed concern about continual updating of the TAMP and its potential to affect costs and prices. The following factors have affected cost estimates in the TAMP since 2001:

- increased knowledge of the assets resulting from increased monitoring of the asset base and the identification, funding and undertaking of a significant amount of backlog maintenance;
- a general increase in the understanding of the state of the assets and the operational and maintenance practices of the organisation.
- a reduction in risk associated with the delivery of projects through the development of the PDS and the review and monitoring components of the system;
- a range of effects and changes as identified in the storage management review and other reviews such as heritage and environmental (theses have been documented in previous sections of the TAMP).

In the TAMP 2004, MPM forecasts are considered to be reliable. OH&S upgrading is winding down and it is not a significant program. Uncertainties lie with environmental regulation and dam security upgrades.

Costs in the TAMP 2004 have increased chiefly due to increases in projected costs for dam security upgrades for Keepit Dam and Chaffey Dam. The cost estimate for Keepit Dam upgrading has risen from around $35 million in 2001 to $65.3 million in 2004 for expenditure to 2009. In the case of Keepit, interim works are proposed, to reduce risk in stages. The reasons for this increase are:

- study of catchment hydrology revealed increased likelihood of high runoff frequency, requiring additional upgrade to meet regulatory standards;
- community consultation led to requests for variations to satisfy a range of objectives.

The Chaffey Dam upgrade is currently costed at $12.03 million, to be spent between 2004/09, but this proposal represents interim works only and is complicated by the option, now being considered, to augment the dam for Tamworth's water supply.

An important factor is the public commitment given to 100% government funding of the upgrades for both Keepit and Chaffey dams. Under full government funding, there is not incentive for the community or water users to consider the cost of design options.

[4] By this stage, advances in detailed understanding of hydrology and related knowledge should already be available.

4.8.4 Portfolio risk management approach

Because State Water owns 18 major dams and numerous smaller structures, it must consider the security risk to its assets as a whole. The security dam upgrade program arises because recent estimates of probably maximum flood levels have been increased. Therefore State Water is in a position where two of its major dams satisfy the current standard, while the remaining 16 do not. In deciding how to approach such a large risk portfolio, State Water has chosen to look at total risk and work on minimising risk across its asset base as a whole, rather than to concentrate on each dam in turn, given the long period of time required to meet standards for all the dams. In practice this means that State Water will attempt to reduce the highest infrastructure risks but not necessarily meet risk standards for any particular dam in a single step. This allows for interim works or phasing of works, so that highest risks are reduced in the short term, while standards are met progressively.

This approach is being taken for Keepit Dam, where interim works are designed for the time being, to reduce the most serious risk. The design and construction of interim or phased works makes for complex decision-making.

4.8.5 Dam security compliance upgrade program

State Water seeks opportunities to include environmental compliance work in programs for dam security upgrade or enhancement. This is one reason the costs of environmental compliance are undertaken – compliance infrastructure is not finally designed until the main features of the upgrade are decided.

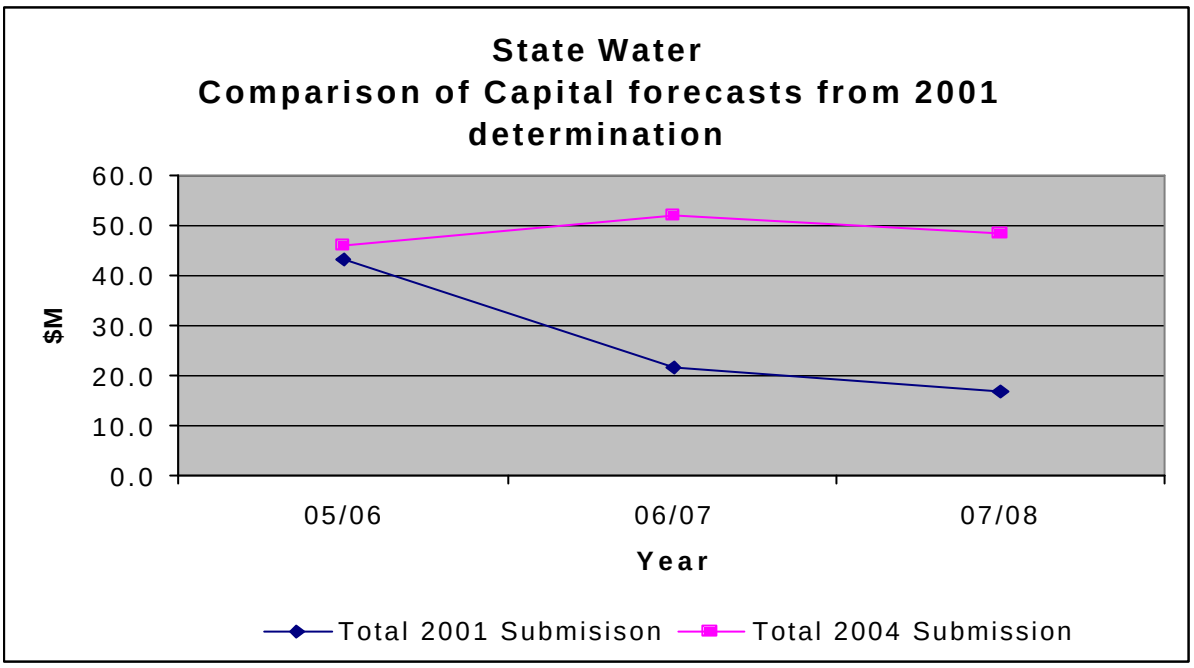
The full program for dam security compliance extends over 15 years, depending on the timing and speed with which projects can be implemented. The PwC Review questioned whether the capital program was too ambitious in timing. State Water has revised its timing estimates to include community consultation for major dam security upgrades. This has the effect of 'flattening' the cost profile – extending the period in which the costs will be incurred. But it the TAMP is still 'front-end loaded', meaning that the average annual cost in the first 15 years in much higher than for the second 15 year period.

The dam security upgrade program is now focusing on Keepit and Chaffey dams (both in the Namoi river basin) for which community consultation and preliminary investigations are well advanced.

4.8.6 Cost implications of updated TAMP

The TAMP2000 and TAMP2004 total cost profiles for capital expenditure for the 3 years 2005 to 2008:

Figure 6: Comparison of TAMP estimates 2001 and 2004



As a result of these cost increases, the annuity required by State Water to accomplish the capital program over the 30 year period of the TAMP will increase from around 17 million per year in the 2001 price determination, to $23 million per year in 2005/06.

4.8.7 Implementation of the TAMP since 2001

This needs to identify planned expenditure on capital projects at the time of the last price determination, for the period 2001 to 2004, show what was actually spent, on what, and explain the discrepancy.

Planned capital expenditure for the period 2001 to 2004, at the time of the last price determination was as shown in Table 15, which also shows actual capital expenditure in the same period.

Table 15: Proposed and actual capital expenditure by State Water 2001/04 ($M)

	2001/02	2002/03	2003/04	2004/05 (estimate)
2001 estimate of expenditure	*24.0*	*28.5*	*33.9*	*25.9*
Actual expenditure	*13.1*	*15.6*	*20.1*	*18.1*
Variation	*10.9*	*12.9*	*13.8*	*7.8*

The reasons for under-expenditure were mainly in the areas of processes for dam safety compliance projects. These are significance projects, which IPART have determined to be fully funded by Government. State Water had proposed a program based on understanding of requirements at the time. The amount of consultation and planning has been affected significantly due to number of administrative changes, limited understanding of issues by stakeholders and number of disparate single interest agencies involved, which has delayed works.

Future plans have been amended to take into account the planning and consultation experiences from particularly Keepit and Chaffey Dam upgrade projects.

Table 16: Capital expenditure estimates ($M) 2005/06 to 2007/08 and User shares

2005/06

Sub Product	Sub Product Description	User Share	Total	Users	Govt
PC402	Total Asset Management Planning - TAMP	*100%*	*4.17*	*4.17*	*0*
PC415	Rural Water Infrastructure Redundant Assets	*0%*	*1.48*	*0*	*1.48*
PC431	Dam Rehabilitation	*20%*	*1.54*	*0.31*	*1.23*
PC432	Dam MPM	*100%*	*4.99*	*4.99*	*0*
PC434	Dam Performance Enhancement	*100%*	*1.51*	*1.51*	*0*
PC435	River Structure Rehabilitation	*20%*	*2.57*	*0.51*	*2.06*
PC436	River Structure MPM	*100%*	*1.46*	*1.46*	*0*
PC438	River Structure Enhancement	*100%*	*2.44*	*2.44*	*0*
PC450	Dam Compliance - Environment	*50%*	*1.8*	*0.9*	*0.9*
PC451	Dam Compliance - OH&S/Public Safety	*50%*	*0.11*	*0.06*	*0.05*
PC452	Regulated River Compliance - Environment	*50%*	*2.59*	*1.3*	*1.29*
PC453	Regulated River Compliance - OH&S/Public Safety	*50%*	*0.03*	*0.02*	*0.01*
PC456	Dam Compliance – Upgrade	*0%*	*22.4*	*0*	*22.4*
PC500	Decommissioning	*0%*	*0*	*0*	*0*
			47.09	*17.67*	*29.42*

2006/07

Sub Product	Sub Product Description	User Share	Total	Users	Govt
PC402	Total Asset Management Planning - TAMP	100%	1.35	1.35	0
PC415	Rural Water Infrastructure Redundant Assets	0%	0.61	0	0.61
PC431	Dam Rehabilitation	20%	0.3	0.06	0.24
PC432	Dam MPM	100%	2.92	2.92	0
PC434	Dam Performance Enhancement	100%	1.19	1.19	0
PC435	River Structure Rehabilitation	20%	0.73	0.15	0.58
PC436	River Structure MPM	100%	0.66	0.66	0
PC438	River Structure Enhancement	100%	9.27	9.27	0
PC450	Dam Compliance - Environment	50%	1.35	0.68	0.67
PC451	Dam Compliance - OH&S/Public Safety	50%	0.04	0.02	0.02
PC452	Regulated River Compliance - Environment	50%	1.53	0.77	0.76
PC453	Regulated River Compliance - OH&S/Public Safety	50%	0.13	0.07	0.06
PC456	Dam Compliance - Upgrade	0%	31.89	0	31.89
PC500	Decommissioning	0%	0	0	0
			51.97	**17.14**	**34.83**

2007/08

Sub Product	Sub Product Description	User Share	Total	Users	Govt
PC402	Total Asset Management Planning - TAMP	100%	*1.45*	*1.45*	*0*
PC415	Rural Water Infrastructure Redundant Assets	0%	*0*	*0*	*0*
PC431	Dam Rehabilitation	20%	*0.55*	*0.11*	*0.44*
PC432	Dam MPM	100%	*2.41*	*2.41*	*0*
PC434	Dam Performance Enhancement	100%	*0.89*	*0.89*	*0*
PC435	River Structure Rehabilitation	20%	*0.26*	*0.05*	*0.21*
PC436	River Structure MPM	100%	*0.62*	*0.62*	*0*
PC438	River Structure Enhancement	100%	*9.65*	*9.65*	*0*
PC450	Dam Compliance - Environment	50%	*2.25*	*1.13*	*1.12*
PC451	Dam Compliance - OH&S/Public Safety	50%	*0*	*0*	*0*
PC452	Regulated River Compliance - Environment	50%	*0.7*	*0.35*	*0.35*
PC453	Regulated River Compliance - OH&S/Public Safety	50%	*0.53*	*0.27*	*0.26*
PC456	Dam Compliance - Upgrade	0%	*30.17*	*0*	*30.17*
PC500	Decommissioning	0%	*0*	*0*	*0*
			49.48	***16.93***	***32.55***

4.8.7.1 Navigation, recreation and tourism

By maintaining in-river structures, State Water provides various river-based benefits, which can include enhanced opportunities for recreation and tourism. Another benefit of some river structures is to provide pumping pools for water users who are not customers of State Water. These benefits are treated as by-products of State Water's river operations, and not as explicit benefits for which it should receive compensation.

These categories of benefit are outlined in order to explain the extent to which State Water provides value to the community in general, apart from its customers. State Water considers that, of these, the flood mitigation category is the only one, which could attract specific recognition of the public benefit and therefore subsidies in the long term.

4.8.8 State Water's estimates of capital costs

State Water has updated its total asset management plan (TAMP) to take into account current costs and to describe the current capital program. The capital program involves planning, design and construction of major works, to satisfy (a) the application of regulatory standards in several areas, and (b) periodic major maintenance or refurbishment. These activities must be programmed to take into account the following:

- the expected lead-time for deciding the standards or design criteria for regulatory upgrading (including the consultation requirements);
- the desirability of spreading construction work across different valleys (not concentrating on one or a few valleys at any particular time);
- the priorities to be assigned to different dams and valleys, given that several valleys may require attention and the order in which they are tackled;
- the number of major construction projects that State Water can effectively engage in, at any one time.

The TAMP covers a 30 year period, of which the first 15 years is taken up with an intensive capital program. The major costs to be incurred by State Water are major periodic maintenance, rehabilitation and current planned maintenance, and asset compliance costs, which fall into the following categories:

1) occupational health and safety compliance
2) environmental compliance:

a) thermal mitigation (ability to manage the temperature of water releases)

b) fish passage

3) seismic and flood compliance.

The dam safety compliance projects planned for the first five years, and the costs, are shown in section 6.2.2. The expected annual capital investment on environmental works is shown in section 4.8.8.3. The major compliance categories are discussed below.

The Tribunal's allocation of cost shares is in Table 5.2 of the 2001 price determination. The relevant categories, with Tribunal comment, are reproduced in Table 17.

Table 17: Tribunal's allocation of cost shares

IPART sub product code	State Water sub product code	current user allocation	current government allocation	proposed user allocation	proposed government allocation
PC330	PC450	*50%*	*50%*	*50%*	*50%*
PC331	PC451	*50%*	*50%*	*100%*	*0%*
PC332	PC452	*50%*	*50%*	*50%*	*50%*
PC333	PC453	*50%*	*50%*	*100%*	*0%*

4.8.8.1 Stock and domestic water access

State Water releases water for stock and domestic purposes, from time to time, along streams and effluent creeks, which are not part of its river regulation or water delivery to customers. As with measures taken for the environment, the delivery of water for stock and domestic use is treated as a regulatory requirement. It is true that State Water may improve the opportunity for such non-customers users to receive water at times when it would not be available under natural conditions. State Water is required to make such releases of water in water sharing plans.

State water is required to deliver stock and domestic water without receiving specific payment for the services. In drought times, there are considerable compliance costs associated with this delivery.

4.8.8.2 Fish passage

With the implementation of the NSW Weirs Policy and the establishment of the former NSW Weir Review Committee, State Water embarked on a weir review project to assess and compile information regarding environmental, structural and social effects of each structure.

The Department of Primary Industries (the former NSW Fisheries) have also embarked on a review process across the state, assessing private structures and government (local council, Sate Water) owned structures.

Both projects are nearing completion with key priorities and outcomes identified by both parties. The next step in the process is to consolidate the information and work together to formulate a state-wide strategy to improve fish passage.

Over the coming 12 months State Water and DPI will be working on a catchment based approach identifying structures with the highest priority in terms of fish passage and general ecological requirements (water quality, riparian vegetation etc).

The aim of this process is to identify via a strategic framework, a cost-effective method to improve fish passage for the State Water works program.

Presently under the *Fisheries Management Act* State Water construct a fishways where required as part of upgrade projects. Through the setting of agreed priorities, State Water and DPI can work together to improve fish passage in a more strategic manner.

Issues such as offsets are also being considered and will be incorporated into the strategy. If work is required at one structure but a fishway will not dramatically improve the current situation, this money may be better spent on installing a fishway on an identified priority structure within the system, thereby achieving an improved environmental outcome for the money invested.

The strategy will be developed by State Water and DPI in conjunction with the Customer Service Committees and will be incorporated into State Water's works program over the next 5 years.

4.8.8.3 Thermal pollution

With the establishment of the Government's Cold Water Pollution Strategy and initiatives, State Water plans to meet these requirements. The government decision recognises its current share of 50% funding for the strategy, and allows State Water to seek specific capital works funding for priority projects.

The first stage of the strategy (2004-2009) involves formalising the cold water mitigation measures that are already scheduled and included in the capital works program (eg investigations, works and improved operating protocols). These costs have been included in the current IPART submission.

Over the next 5 years State Water will be involved with the Strategy implementation working group. Cold water pollution mitigation investigations, works and operating protocol development are proposed in State Water's future works program as shown in Table 19.

Table 18: Estimated costs for providing fish passage and mitigating impacts of thermal pollution ($000)

Valley	2005/06	2006/07	2007/08	2008/09	2009/10
Border Rivers	*10*	*0*	*0*	*5*	*0*
Gwydir	*0*	*0*	*50*	*100*	*580*
Namoi	*900*	*600*	*1,500*	*1,000*	*0*
Peel	*50*	*50*	*700*	*0*	*0*
Macquarie	*1,500*	*1,000*	*0*	*0*	*0*
Lachlan	*1,668*	*132*	*0*	*150*	*1,000*
Murrumbidgee	*0*	*850*	*550*	*400*	*600*
Murray	*224*	*250*	*150*	*0*	*0*
North Coast	*0*	*0*	*0*	*0*	*0*
Hunter	*25*	*0*	*0*	*10*	*20*
South Coast	*10*	*0*	*0*	*0*	*0*
Total cost	***4,387***	***2,882***	***2,950***	***1,665***	***2,200***

5 COSTS NOT INCLUDED IN THE DETERMINATION

State Water is engaged in a number of activities for fall outside the scope of price determination for bulk rural water supply. State Water recovers on a fee for service basis where it incurs costs and royalties or lease fees from other agencies or entities where its assets are made available.

5.1 LOWBIDGEE FLOOD CONTROL AND IRRIGATION DISTRICT

State Water provides management services to the Trust established to manage floodplain, wetlands and irrigation works in the Lowbidgee Flood Control and Irrigation District (LFCID). State Water is not a bulk water supplier to LFCID, as it does not have an Access Licence unlike other customers.

The Trust sets an annual work program and budgets. State Water undertakes the work and charges the users within the District on a commercial basis for its services. Charges levied on the LFCID users are based on the expenditure against the agreed budget. The unit rate ($/ha) is based on the hectares of 'Authorised Area' allotted to each landholder by the Trust. Activities undertaken by State Water include:

- assistance with design and construction of works for flood mitigation and irrigation;
- operational support for water management;
- billing landholders in the Lowbidgee area and collection of charges on behalf of the Trust; and
- accounting and administration.

The costs of these services are recovered by State Water through the charges to landholders. The costs are not part of pricing for water delivery by State Water.

5.2 GOL GOL CREEK

Gol Gol Creek and Gol Gol Creek North are a group of irrigators on the Murray River close to Mildura. In the past, these users have paid an additional charge, not set by IPART, for weed clearing and pumping/operations costs on the creek systems. These costs are minimal, at about $14K/yr, and State Water proposes to incorporate these costs into the total Murray system costs. With the minimal costs, this will have very little effect on water prices in the Murray.

5.3 LEASE AND ROYALTY PAYMENTS FOR HYDRO-POWER FACILITIES

State Water charges hydropower operators for the right to install their facilities on its dams and use water in its storages for power generation. These amounts are not subject to determination for bulk water services, although they provide revenue to the Government as a return for the expenditure on the assets that make the hydro power stations possible. State Water undertakes maintenance work and emergency response under fee for service contracts with the hydro owners.

5.4 JEMALONG WEIR COSTS

Previously, the majority of costs (92%) for Jemalong weir have been excluded from pricing determinations as these have been charged directly to Jemalong Irrigation Limited (JIL). The remaining 8% has been included in the pricing submission for pricing in the Lachlan Valley. State Water considers that all costs of Jemalong Weir should be included in the pricing for the Lachlan Valley as the valley, and not just JIL, receives substantial benefit from the operation of the weir especially in low flow years.

The approach is consistent with all weirs in the regulated systems state wide, and simplifies financial and accounting processes.

6 STATE WATER AND DIPNR RESPONSIBILITIES

Since the last rural bulk water supply price determination by IPART in 2001, State Water has undergone very significant changes.

State Water was corporatised and is now a separate commercial entity under the governance of a Board of Directors. The Government made the changes in order to separate State Water's commercial water supply activities from the responsibility for water resources management, which remains in DIPNR.

It no longer forms part of a Department with water resources compliance management responsibilities. Pricing for water resources management activities is separate from State Water. State Water's prices cover its bulk water supply services.

This is the first price determination for State Water as a stand-alone business and a corporatised entity. Corporatisation has introduced significant changes to State Water's financial and business structure, and therefore there is a case for reviewing some aspects of the Tribunal's past approaches to price regulation.

The significance of recent changes to bulk water pricing is as follows:

- State Water is no longer part of the NSW government agency which is responsible for water resources management: State Water is not responsible for water resources management activities and therefore water management pricing has been separated from State Water, allowing a more transparent financial system and accountability within State Water;
- State Water is responsible for water supply to regulated river water users only, and although it may provide services to unregulated river users and groundwater users, this is only as a contractor to DIPNR;
- State Water has no responsibility for activities that come under the MDBC's resource management programs, but undertakes asset management and operation activities for specified MDBC works, as coordinated by River Murray Water (RMW), resulting in a clearer basis for apportioning costs and benefits associated with MDBC activities;
- State Water can now operate as a commercial business, is subject to corporations law and the associated financial and performance accountabilities, including taxation, and the regulatory basis for pricing should recognise these changes;
- State Water may now obtain finance and invest in its own name, permitting more flexibility and a business-like approach to long term financing and the management of its water delivery assets;
- The relationship between State Water and water users centres on provision of services to users as customers, and does not involve regulatory control of water licences (regulation of water licences remains with DIPNR);
- State Water is now subject to external regulation of its water management impacts: such regulation was previously applied to State Water internally (within DLWC), but it lacked

transparency. It will now be exercised by DIPNR and accountabilities and implications will be more clearly evident through documentation.

Taken together, these changes are significant for the regulatory approach to pricing. State Water considers that some aspects of past methodology and assumptions underpinning bulk water pricing determinations are less appropriate to the new utility model.

Because the next rural bulk water price determination by Tribunal (in 2005) is the first determination to apply to State Water as a State-owned corporation, it is important that the principles and methodologies on which it is based suit the long-term requirements of the Tribunal, State Water, stakeholders and customers.

6.1 SCOPE OF STATE WATER'S BUSINESS

State Water is a bulk rural water delivery utility. As detailed in the Issues Paper, State Water's main activities are:

- river operation: water delivery operation (customer orders, releasing water from storage and monitoring and managing river flow, metering water diversion/use, billing and collecting fees and charges);
- management of major headwork dams and river operation structures.

State Water owns and operates 18 headwork dams in NSW, and more than 400 weirs and associated works on regulated rivers. It has around 6,000 regulated customers, which include irrigation companies and other irrigation businesses, local government town water supplies, mining companies and electricity generators. State Water ensures the flow of water in rivers for stock and domestic water users and riparian water users. State Water must provide water to meet environmental objectives on the regulated rivers whose flow it controls. State Water also provides flood mitigation capacity through some of its headworks.

State Water does not:

- possess water entitlements, but stores and delivers water to customers;
- distribute water within irrigation schemes, except in some cases, by agreement,
- have responsibility for water resources management.

DIPNR's role in regard to bulk water delivery is now exclusively that of resource regulation. DIPNR should not perform any operational services. DIPNR currently administers Access Licences and Works Approvals for customers and Works Approvals fro State Water. Currently DIPNR has accountability for unregulated rivers and groundwater sources, as these Water Sharing Plans are yet to be finalised.

Some programs are being shared between State Water and DIPNR, until a decision is made regarding the best option. Where State Water manages a discrete part of the total program, the costs are more transparently allocated to bulk water supply or water resources management. State Water prefers to manage and undertake any business critical activity that forms part of operating rivers and managing assets, including appropriate levels of protection for storage catchments.

6.1.1 Surface water quality monitoring program in storages

DIPNR is accountable for Water Quality Management in NSW. WQ Management includes various aspects of monitoring, assessment, and response. State Water is currently awaiting the development and dissemination of the WQ strategy and parameters required by DIPNR as the WQ Manager.

Limited monitoring of water quality (WQ) in storages is likely to be a State Water responsibility after July 05. In 2004/05 DIPNR has the budget and buys sampling services from State Water. From 2005/06 the cost of limited but routine WQ monitoring on storages will be included in the State Water budget.

In previous pricing submissions, all of the State's surface water quality monitoring was costed as a single program and then allocated on a percentage basis between water users and the government. The reason was, that water quality monitoring was managed a an integrated program and an estimate had to be made about the proportion that which water users should fund. The State water quality monitoring program contained several elements, including monitoring of storages and rivers, and was used to satisfy several programs simultaneously, such as IMEF, salinity monitoring and algal management.

From July 2005, the program is to be separated into two components:

- limited water quality monitoring that State Water will undertake in storages for its own operational management;
- other monitoring for water resources management.

State Water is required to take into account the quality of water in rivers by several statutes and regulatory instruments, which govern its operation. They include:

- water quality targets in the State Water Management Operation Plan (SWMOP);
- water quality targets in Water Sharing Plans for regulated rivers;
- State Water's Operating Licence;
- common law duty of care.

The database for all water quality data is held by DIPNR and State Water will not duplicate the database, but use the services of DIPNR. However, all other functions are undertaken by State Water or contracted to other providers.

The $4M for surface water monitoring in the previous submission by DLWC includes storage water quality monitoring and the supporting activities. Future allocation of costs by the Tribunal to the Statewide water quality monitoring program should recognise that the program now excludes activities which State Water is undertaking. However, State Water will extend those former water quality monitoring activities which relate to its storage and river operations, in order to meet new regulatory requirements and manage legal risk.

State Water has compelling reasons for monitoring water quality in storages and rivers, which include the need to understand short-term and long-term factors and trends affecting water quality in storages, in order to:

- provide information to water users and others about storage and river water quality;
- ensure regulatory objectives for water quality are met as closely as possible;
- avoid or reduce harm form adverse water quality events;
- develop water management strategies for in-storage and river water quality.

6.1.2 Dam foreshore protection and management

The protection and management of foreshores for headwork dams has been a combined responsibility of DIPNR and NSW Lands. Activities have included soil conservation measures, noxious weed control

and control of feral animals, and safety and hazard prevention. These activities form part of storage protection and management.

For these reasons, areas of land surrounding headwork storages are being transferred to State Water, along with the other assets. State Water will conduct foreshore management activities and at the same time will take commercial opportunities arising from ownership of the land. These opportunities include leases for agricultural and other purposes.

At the time of this submission, the cost of the Statewide storage land management program is $1.0M, while revenue from existing leases and commercial agreements totals $0.8M, leaving an annual shortfall of $0.2M. This is for the Northern and Coastal valleys as it is estimated that land management in the Southern and Central valleys are breaking even.

State Water considers that within a period of four years it can recover sufficient funds from commercial opportunities to cover the full cost of managing the land. State Water therefore proposes that the shortfall be included in water prices, commencing in 2005/06 and reducing to zero in 2008/09 – the year after the price determination period.

State Water's customers should fund any shortfall in the cost of land management in the interim, as it is a cost of maintaining the storages, protecting them and maintaining the quality of water in storages. State Water also has a duty of care to ensure that adequate safety features are installed and maintained on land and foreshores surrounding its storages, which it must bear as part of its business operation.

State Water is not responsible for supplying water to holders of water access licences on unregulated rivers or those who hold groundwater licences. However, for the period of the price determination, State Water expects to be contracted by DIPNR to provide services under contract for unregulated rivers and groundwater users. The services are those that have already been provided in the past by State Water staff also engaged in some activities for DIPNR.

6.2 ACTIVITIES TO BE UNDERTAKEN BY STATE WATER

State Water' activities will cover the following for unregulated rivers and groundwater, under contract to DIPNR:

- metering of water use,
- maintaining records of water use and data bases, or accessing such data on DIPNR data bases,
- billing for water use, water management charges and other charges,
- monitoring compliance with water use rules, and
- administering temporary water transfers.

The submission on cost recovery for unregulated river and groundwater is now the accountability of DIPNR. DIPNR is expected to cost the services on the basis of costs incurred by State Water under contract to DIPNR.

7 STAKEHOLDER CONSULTATION

State Water undertook comprehensive consultation on the proposed submission and incorporated key elements of input from various stakeholders and sought to reduce impacts as best as possible. Where State Water was not able to incorporate suggestions from stakeholders, State Water encouraged them to put in submissions to IPART to raise their points of view in an independent forum. Therefore, during the hearings and in the submissions, some customers may raise unresolved concerns based on impacts on their businesses.

State Water supports eight valley based Customer Service Committees (CSCs) which meet quarterly. State Water provides a secretariat, advice, information and arranges the meetings. These quarterly CSC meetings are chaired by a water user, who develops the agenda in consultation with State water Customer Service Manager. Staff attend the meetings to provide information or discuss issues. The Committees have been provided with valley expenditure reports on a quarterly basis for several years.

State Water has interacted with the CSCs about the IPART pricing submission over the last year. Each CSC nominated a member to the "Pricing Reference Panel" which had the task of examining the historical and projected costs, in detail at meetings convened for this purpose. These costs were available for the Reference Panel members to provide information back to the CSCs.

State Water convened a meeting of the CSC Chairs and the Reference panel members in Sydney to discuss the principles of the pricing submission. The Irrigators Council also attended this meeting. Due to the ongoing drought conditions most of the customers support the move towards a smaller fixed charge and a greater variable charge ratio. Some did raise the issue of risk exposure to State Water, which has been partially addressed in the proposal.

State Water has held two meetings to discuss the pricing submission from an environmental perspective with DIPNR, Department of Primary Industries (Fisheries) and Department of Environment and Conservation. State Water has argued that the agencies should take a positive, holistic and long-term view based on the beneficial environmental outcomes rather than on the costing and financing arrangements. This would lead to sustainable processes being developed to address cold water mitigation and fish passage issues.

The pricing submission has also been discussed in meetings with NSW Irrigators Council, the Murray, Murrumbidgee and Coleambally Irrigation Corporations.

State Water management held a tele-conference with the Inland Rivers Network about the submission. Attempts to discuss the issues with Nature Conservation Council were unsuccessful as a suitable meeting time could not be organised.

State Water has discussed the approach, proposed changes and outcomes in several instances with IPART secretariat as well as Tribunal members.

State Water has also briefed central agencies on potential issues arising from the proposed submission. State Water attended regulatory managers meetings conducted by Treasury, along with other State Owned Corporations and Utilities.

8 APPENDIX 1 - PROGRESS WITH APPENDIX 3 (2001) ISSUES

8.1 PROGRESS ON ISSUES RAISED BY THE TRIBUNAL

Determination No3 2001, Appendix 3, raises a number of issues for State Water to address.

8.2 PROGRESS TOWARDS A TWO-PART TARIFF FOR ALL BULK WATER

State Water's prime responsibility is the delivery of services to regulated river customers and the secondary esponsibility is the delivery of services to DIPNR under contract. State Water is only responsible for the prices paid by regulated river customers.

State Water has completed the implementation of the two-part tariff for its regulated river customers. State Water has sought clarification from DIPNR for floodplain harvesting and basic rights extraction through a metered Works Approval. The licences and limits are expected to be resolved soon, which will complete all system users.

DIPNR is responsible for the prices and price structures applying to unregulated river and groundwater customers. The resolution of the Barwon-Darling volumetric conversion ratio issue is also awaited. State Water expects DIPNR will address this issue in the unregulated river and groundwater submission.

8.3 BALANCE BETWEEN ENTITLEMENT AND USAGE CHARGES IN TWO-PART TARIFFS

This topic is covered in Section 7.3 of this submission.

8.4 HIGH SECURITY AND GENERAL SECURITY ENTITLEMENT CHARGES

This topic is covered in Section 7.1 of this submission.

8.5 WHOLESALE CUSTOMER DISCOUNTS

This topic is covered in Section 7.2 of this submission.

8.6 SEPARATE VALLEY ACCOUNTS

State Water provides valley expenditure reports to the quarterly CSC meetings. These were not audited except as part of the general audit of the host Department's audit.

With the formation of the stand alone State Water Corporation, the transparency of accounts has become better. As State Water still relies on a poorly structured Financial System, there is considerable manual reworking to produce relevant reports. The feedback from the CSCs however is that they are relaxed about the level of financial reporting, except the revenue should be included on a valley basis.

State Water currently has a request for tender seeking an Integrated Financial Management System. The specifications and parameters of this system provide for clear and precise financial reporting on a valley basis in an auditable form.

8.7 RING FENCING

Separation of State Water from water resource management has resolved the Tribunal's ring-fencing concerns from an administrative and corporate governance perspective.

However, State Water expects some of the division of responsibilities with DIPNR, particularly on operational matters, to be reviewed in the first audit by the Tribunal of State Water's interim operating licence. State Water's response to the Issues Paper on the Interim Operating Licence raises a number of concerns and issues to be resolved. That review is to be completed by 31 May 2005.

8.8 CUSTOMER SERVICE COMMITTEES (CSC)

State Water Corporation formed and has efficiently operated eight valley based CSCs for several years. These committees meet regularly and provide two way communication between State Water and the customers. The members of these committees are elected every two years from water user customers.

Water users chair the CSCs and determine the agenda for each meeting, generally covering State Water's 5 key result areas. State water staff members provide information, seek advice and make joint decisions where negotiated outcomes are required.

The CSCs are an extremely effective communication medium between State water and customers. The process is open and is working very well, with considerable gains in operational effectiveness in water delivery, asset investment decisions, and debt management.

8.9 OPERATING COSTS

State Water notes the Tribunal's comments. The operating costs included in this submission are based on efficient costs using the building block approach.

8.10 CAPITAL EXPENDITURE

This submission is based on a move away from the annuity approach to a building block approach using a Regulatory Asset Base using Recoverable Amounts Test prescribed in contemporary accounting standards. This approach has been discussed with IPART secretariat.

8.11 MURRAY-DARLING BASIN COMMISSION COSTS

The basis for cost recovery and MDBC costs is given in Section 5

State Water will collect charges, which recover the NSW Government's contributions to the MDBC and DBBRC.

Commencing July 2005, State Water proposes to collect charges from NSW Murray regulated water users, which represent the recovery of the 'full-cost' of bulk water delivery and management. The charge is set at a level to recover the contributions of the NSW Government for infrastructure and operation undertaken through MDBC. State Water will retain its share and direct the rest of this revenue to the NSW Government. State Water will recover its costs for operation and maintenance of the NSW MDBC works from River Murray Water under a contract arrangement.

In addition to recovery of NSW Government charges, State Water will recover its share of the cost of its activities in the Murray Valley (metering, billing, revenue recovery, compliance and related activities).

In the Border Rivers, State Water will recover the NSW Govemment's contribution to the DBBRC from water users and will also charge for its own activities. DBBRC charges cover the NSW proportion of the costs of Glenlyon Dam and the river works. State Water's costs are for Pindari Dam and the activities undertaken by State Water in NSW (metering, billing, compliance and related activities).

The two components of the charge will be itemised on State Water bills to water users.

8.12 UNREGULATED AND GROUNDWATER SERVICES PROVIDED TO DIPNR

DIPNR has the legal obligations to seek cost recovery on these systems and should include all bulk water delivery costs for these water sources within its submission. State Water under the *SWCA2004* has no powers or functions unless authorised by DIPNR.

State Water will contract to DIPNR for provision of bulk water delivery services for unregulated rivers and groundwater meter reading and billing. State Water will bill water users on behalf of DIPNR and direct the revenue to DIPNR.

9 APPENDIX 2 - IPART ISSUES PAPER RESPONSES

4.1.1 *The Tribunal welcomes comments on:*

- *The efficiency of the projected operating costs outlined in the State Water submission.*
- *Whether there is scope for State Water to achieve further efficiency gains over the next price determination period.*

The 1997 Determination defined the efficient costs of a bulk water supply business, (See Section 2.6). The State Water costs included in this submission are the efficient costs as defined by IPART.

Efficiency is dependent on levels of service required and performance. State Water uses Customer Surveys to determine level of satisfaction with State Water's efficiency as an monopoly provider of services, and uses benchmarking to determine State Water's effectiveness as a bulk water delivery business. Inter-valley comparisons are useful as a starting point in assessing effectiveness and efficiency. State Water conducted the first benchmarking analysis of bulk water provides from Queensland, Western Australia, Victoria and NSW. This will inform and assist State Water in developing performance indicators for efficiency.

State Water is also currently developing performance indicators to enable it to deliver services, monitor and improve performance.

Corporatisation has freed State Water from the regulator-operator dilemma that has dogged it since 1997. The bias introduced by previous departmental objectives diluted State Water's effectiveness, distorted State Water's costs and confused funding requirements. The *SWCA2004* and the Commercial Policy requirement of 'clear objectives' has enabled State Water to define its core business of bulk water delivery and implementation of its programs.

Previously, State Water has been unable to influence nor enforce the costs of services exchanged with parent Departments. It is paramount that the IPART Determination upholds the principles of the commercial policy and processes for successful application of these principles. The 'Purchaser-Provider' Model is absolutely critical to ensure efficient costs. Attempts have been made to convince DIPNR to recognise this approach in their submission, but it may require close scrutiny to ensure that services to be purchased by State Water are not included as DIPNR costs, and vice versa.

There are some operational functions that DIPNR still carries out that could easily be transferred to State Water with no risk and considerable efficiency gains. The overriding principle however is that State Water should have no regulatory functions or powers. This may in the future result in further efficiencies.

The costs and forecasts in this submission have been based on the efficient costs determined by IPART in 2001 adjusted for inflation and the changes resulting from Corporatisation. These costs include the additional costs resulting from assuming new functions, (Board costs, corporate governance costs, etc) and costs of existing services, which were previously provided by the managing Departments. State Water is trying to establish contracts with DIPNR and other service providers for the exchanged services but not all contracts have been signed to date, due to the delays in transfer of assets, delineation of roles and corporate intents regarding service provision.

The scope for efficiency gains will become apparent over the next three years as State water beds down the operating processes that are needed for the business as it emerges from the influence of the Departments, overcomes the currently unknown problems and establishes itself as a viable business.

State Water is now subject to financial arrangements that more closely reflect those of the private sector. This is a significant change from the previous financial regime, where:

- State Water's accounting information was managed as part of the Department's financial system,
- State Water did not have the stand-alone ability to incur debt or finance through borrowings,
- State Water received annual budget allocations, in line with Tribunal price determinations, but where shortfalls could not be made up;
- State Water required 'external' departmental approval for significant expenditure and did not fully control the management of its finances.

State Water is now required generally act in a mode similar to an independent business enterprise. For these reasons, financial sustainability attains an importance that it did not previously have. State Water must:

- carry debt and manage its debt-to-equity ratio to prevent sinking below an acceptable gearing ratio to maintain an adequate credit rating;
- maintain a sustainable cash-flow position in the short and medium term, regardless of long-term revenue projections;
- carefully evaluate different financial management strategies and factor these into its financial calculations of the cost of financing.

These requirements place State Water in a position where long-term financial sustainability is a critical factor.

State Water is also subject to regular performance audits, to be carried out the by the Tribunal, as required by legislation and the Interim Operating Licence. These conditions will almost certainly be carried into the Initial Operating Licence which will be effective from 1 July 2005.

4.1.2 *The tribunal welcomes comments on:*

- *the projected capital expenditure program outlined in State water's submission, and the outcomes that it is expected to achieve.*
- *The prudence of State water's past capital expenditure.*

State Water's CAPEX program is reasonable and necessary to conduct its business, deliver its services and mange the risk to the government, community and customers. The State Water TAMP2004 is submitted as part of the supporting documentation to substantiate this claim.

4.1.2 *The tribunal welcomes comments on:*

- *What approach to capital funding capital expenditure should be adopted when pricing water services to ensure that capital expenditure requirements can be met.*
- *An appropriate rate of return for State Water.*

State Water's position is detailed in Section 3.6.

5.2 *The tribunal welcomes comments on:*

- *Whether there are new arguments against the cost sharing approach used for the last determination.*
- *What costs should be considered as "legacy costs".*
- *What cost sharing arrangements should apply to compliance related capital expenditure*
- *Whether there is a connection between water extraction and various WRM activities, and the extent of this connection.*

State Water's position is given in this submission in section 6.2.

6.1.1 *The tribunal welcomes comment on the appropriate balance between fixed and usage charges*

State Water's position is given in this submission in section 6.4.

6.1.1 *The Tribunal welcomes comments on whether a two-part tariff should apply for both WRM and river operations activities on regulated rivers.*

State Water's position is given in this submission in section 6.4.

6.1.1 *The Tribunal welcomes comment on the appropriate balance between high and general security entitlement prices*

State Water's position is given in this submission in section 6.3.

6.1.1 The tribunal welcomes comments on:

- *Progress of converting to volumetric licences an applying the two part tariffs on unregulated rivers.*
- *How prices for extractive users on unregulated rivers should be set if volumetric licences have not been established and metering is not in place.*
- *The percentage entitlement extractive users on unregulated rivers receive in an average year.*

This is primarily a matter for DIPNR. State water's understanding from unregulated customers on the CSCs is that very limited progress has been made. While volumetric conversions may have progressed, the new Access licences have been delayed by 12 months. From State Water's experience, a simpler framework is required for unregulated rivers as compared to regulated rivers due to the relatively high costs and relatively low volumes extracted. State Water as the future contractor on unregulated rivers should be consulted prior to embarking on further policy development and implementation.

6.1.2 The Tribunal welcomes comments on:

- *Whether wholesale discounts are still appropriate.*
- *If so, what level of discount for wholesale customers is appropriate?*

State Water's position is given in this submission in section 6.5.

6.2 The Tribunal welcomes comments on what transitional path of increase is reasonable for prices in valleys where prices are not at full cost recovery level.

State Water's position is given in this submission in section 3.8.

10 APPENDIX 3 – EXTERNALITIES AND OTHER ISSUES

10.1 SCARCITY PRICING

The Queensland government has recently commissioned the Centre for International Economics (www.thecie.com.au) on Scarcity Pricing of bulk water. Queensland has a large volume of unallocated water and consequently can seek scarcity rents through an auction process.

NSW differs from Queensland as the Water Sharing Plans limit the volume of water available for allocation to the extent there is no unallocated water which means that scarcity pricing cannot be introduced through auctions in an efficient water market.. The water in NSW is owned by the State and the application of scarcity pricing would, if it were possible, be a dividend to the State. In this regard scarcity pricing would be a tax on water use collected by State water for the Government.

The application of scarcity pricing to NSW bulk water would be a form of revenue raising that would adversely impact on the efficiency of the water market. This is an undesirable outcome.

The definition of water scarcity is important in this debate. Page vi of the CIE report defines scarcity as;

"Physical scarcity of a water resource emerges when the extractive use exceeds the sustainable yield of the system or the reliability of existing entitlements is compromised. When this happens further consumptive use is occurring at the expense of some environmental deterioration (there is an environmental opportunity cost) and / or at a cost to the reliability of supplies to current and future water users. Water reforms are directed at avoiding this.

Water is scarce in an *economic* sense whenever a marginal reduction in access to water would cause a reduction in profit, wealth or some other measure of economic welfare to users. It is also scarce if the granting of increased entitlements for extractive use would impose reduced security on the others or if they would impose increased risks to the environment."

It is arguable that NSW water is scarce by both these definitions. However, full cost recovery is necessary before introducing scarcity pricing. If scarcity pricing is introduced before full cost recovery is achieved, it will be a form of taxation to generate extra dividends and will distort the water trading market. Under the *SWCA2004* and under COAG, State Water as a cost recovery business is restricted to full cost recovery to a maximum of upper bound pricing, and has no mandate to impose scarcity pricing as it would merely be resource rent collection on behalf of the Government.

The NSW Government or DIPNR can impose scarcity pricing as they have resource management responsibilities. State water is merely a bulk water delivery operator, complying with the externally imposed regulatory framework. If the legislative framework is changed, State Water may in future be responsible for scarcity charges.

Currently, the water trading market operates efficiently at prices that include externalities and scarcity. State Water reserves the right to study scarcity charges with respect to NSW bulk water supplies and to include this issue in future submissions.

10.2 DEMAND MANAGEMENT

State Water's operational role is to deliver not less than a specified minimum volume of water to the environment and to deliver not more than a specified maximum volume of water to users. Consequently,

State Water endeavours to maximise the volume of water supplied to water users within the regulatory framework of the WSP.

If State Water can find system efficiencies the volume of water available for delivery to customers, (the environment or water users), is increased. Having met the minimum deliveries to the environment, specified by the WSP, State Water is required by the *SWCA2004* to operate effectively and efficiently.

10.3 EXTERNALITIES

The externalities that would normally be associated with State Water's bulk water operations are all progressively internalised. Water users share the cost of fishways with the Government; the Cold Water Mitigation Strategy will address the issue of temperature modification of storage releases; and operations in compliance with the WSP will achieve the best possible environmental flow regime under the current framework.

The WSP were implemented to address the community concerns with the altered flow patterns due to extractive use and the environmental impact. By complying with the WSP, State Water is addressing this environmental impact, given that it is not practicable to return to the natural free flow of the river systems. The WSP are a best attempt to reinstate some environmental flows given the requirements of communities and extractive users having rights to use some water.

State Water has not included any additional externality costs in this submission.

10.4 TEMPORARY TRANSFER FEES

At the last determination, IPART set the temporary transfer fee at a fixed charge of $25, plus a variable charge of $1 per megalitre transferred to a maximum charge of $75 per transfer.

These charges have resulted in revenue to State Water of less than $0.2M, against costs incurred in 2003/04 of slightly less than $0.3M.

State Water proposes to keep the fixed $25 charge and the variable charge of $1 per megalitre transferred but increase the maximum charge to $275 per transfer.

This proposal, while not disadvantaging the small transferors, will better reflect the cost of the larger transfers and provide a greater cost reflectivity for State Water.

10.5 YANCO COLUMBO SYSTEM

This submission includes a separate section for the specific purpose of setting prices for the rehabilitation of the Yanco Columbo Creek system to improve flows and provide significant water savings for the system and the Murrumbidgee Valley.

The Yanco Creek and Tributaries Advisory Council, YACTAC, has produced "The Yanco Creek System Natural Resource Management Plan" in consultation with State Water, DIPNR, landowners, private irrigation groups and others.

The outcome from this consultation is a Natural Resource Management Plan (NRMP), for the Yanco Columbo System, YCS. This NRMP provides for a ten-year plan at a total cost of $23.4M. Of this

$23.4M, users in the YCS and the Murrumbidgee will be contributing $10.6M or 45%. Users on the YCS will contribute $1.3M and users in the Murrumbidgee valley will contribute $9.3M.

The NRMP identifies four key issues for the YCS. These are:

1. Maintaining and improving the health of the creek and mimicking natural flooding events where possible.
2. Maintaining and improving the riparian habitat (creek corridor biodiversity) along the creek system.
3. Improving the overall deliverability and efficiency of supply for the entire creek system.
4. Developing community ownership, participation and empowerment to improve the future management of the systems resources.

There are also a number of environmental and socio-economic outcomes from this proposal.

YACTAC have proposed that the amounts to be contributed by users on the YCS and the Murrumbidgee Valley be collected via a water charge to be billed and collected by State Water. The basis of the charge will be a set amount per megalitre of entitlement for each licence holder in the area and valley. This charge is to continue each year for ten years. The charge will start at $0.84/ML entitlement for users on the YCS and $0.39/ML entitlement for the whole Murrumbidgee valley. Charges should increase by CPI each year to cover rising costs of the proposed works.

Additionally, State Water will be required to fund the works carried out each year until billing is completed (billing is currently done annually in arrears). To fund this work, State Water will need to borrow the funds through TCorp or forego other works that may have been completed. In either case, State Water proposes that an interest charge be levied on the users to cover costs incurred by the business. This will increase the contribution by users on the YCS to $.90/ML entitlement and the Murrumbidgee Valley to $0.417/ML entitlement.

As this is a project undertaken at the initiative of the Murrumbidgee customers, State Water recommends IPART approve the charge of $0.90/ML of entitlement for 10 years, increasing annually for inflation, for the YCS customers and $0.417/ML of entitlement for 10 years, increasing annually for inflation, for Murrumbidgee users. State Water further recommends that this price can be changed when final estimates are known by advice to the Tribunal.

The Yanco Creek System Natural Resource Management Plan will be submitted to IPART as part of the Supporting Documentation.

The costings for The Yanco Creek System Natural Resource Management Plan showing contributions for each relevant party and user contribution calculations are indicated in Appendix 6.

10.6 LAKE BREWSTER

This submission includes a separate section for the specific purpose of setting prices for improvements to Lake Brewster in the Lachlan Valley. The purpose of this project is to:

- Improve the water quality of Lake Brewster, and
- Provide improved water delivery to the environment and water users through increased reliability and security.

This project is the result of negotiations between the Lachlan CSC, State Water, the Lachlan CMA and others. The discussions were headed by the Lake Brewster Project management Committee, a sub committee of the Lachlan CSC.

The expected cost of the Lake Brewster project is currently $6.5M. Final costs will be known on the completion of investigations, which are currently underway. The costs are to be shared equally between State Water and the Lachlan CMA with the State Water share to be recovered from water users. The works are expected to be completed within two years of commencement

This is a specific project being undertaken on the initiative of water users in the Lachlan Valley. It is therefore proposed to keep this project as a separate pricing issue for IPART to consider.

It is proposed to recover costs based on specific charge per megalitre of regulated water entitlement in the Lachlan Valley. Based on current costings, this charge will be in the order of $2.41/ML for each of the 2 years. State Water is currently negotiating with the customers and the CMA to have the CMA fund the project until State Water completes billing for the first year (State Water presently bills customers annually in arrears) thus avoiding borrowing costs by State Water. If State Water is required to borrow to fund this project, the charge will rise to $2.57/ML for each of the 2 years.

As this is a project undertaken at the initiative of the Lachlan customers, State Water recommends IPART approve the charge of $2.41/ML of entitlement for 2 years. State Water further recommends that this price can be changed when final estimates are known by advice to the Tribunal

A copy of the agreement between State Water and the Lachlan CMA, and Estimated Costings for the project will be submitted to IPART as part of the supporting documentation.

10.7 ADJUSTMENTS FOR WATER ORDERING ERRORS

Errors in water orders can result in water being lost if they are not corrected in time. In some instances, this water may be used downstream of where the losses occurred. State Water will reconcile, at the end of each water year, the net losses incurred as a result of incorrect ordering. Where a net loss of water occurs as a result of incorrect ordering, State Water is proposing that a charge equal to the usage charge in the particular valley be levied against all customers who placed incorrect orders. The total charge will be equal to the net loss of water incurred and will be shown as a separate line item.

11 APPENDIX 4 - THREE YEARS OF HISTORICAL COSTS

11.1 FINANCIAL REPORTS

Detailed Valley Accounts for State Water costs, inclusive of RMW costs are provided to the Tribunal for consideration in the pricing determination. These Accounts have also been provided to Customer Service Committee (CSC) representatives on a "Commercial in Confidence" basis to assist in their formulation of their opinions of the costs in this submission. State Water has discussed these reports with the reference groups.

11.2 PERFORMANCE MEASUREMENT AND BENCHMARKING

State Water entered into an agreement with similar bulk water businesses, and engaged a Consultant to undertake a benchmarking exercise between water businesses in Australia to State Water. It must be noted that such a benchmarking exercise is difficult as most water organisations in Australia are different to State Water in that they have retail functions, similar to the privatised irrigation corporations in NSW. State Water is purely a bulk water delivery business.

11.3 DETAILS OF AUDITED VALLEY ACCOUNTS

State Water is aware of IPART's requirement of audited valley accounts. Under government guidelines, as State Water was part of DIPNR and then DEUS it had to rely on the accounting and auditing systems of DIPNR. Until 1 July 2004 State Water was not a legal entity and was audited within the accounts of DIPNR and DEUS which have undergone significant financial audits, however these audits have not extended to the valley accounts due to the complex nature of compiling them and the associated costs of undertaking a specific audit for these accounts. The DEUS Annual Reports for 2003 and 2004 include State Water accounts.

12 APPENDIX 5 - HISTORICAL AND PROJECTED COSTS

Projected Total State Water Operating Expenditure For Year Ended 30 June 2006 ($000)

Sub Product	Sub Product Description	IPART User share	Total Regulated	Border Rivers	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PA100	Surface Water Quantity Data Collection & Archiving	100%	3,923	133	534	547	147	534	586	947	120	306	29	40
PA120	Surface Water Quality Data Collection & Archiving	100%	489	42	22	15	65	46	51	-	133	89	13	13
PC100	Rural Water Supply Strategies State river operation policies	100%	6	-	-	-	-	-	-	4	-	2	-	-
PC102	Rural Water Supply Custom & Ind Liaison	100%	426	33	35	37	-	80	80	71	90	-	-	-
PC120	Rural Water Supply River operation plans	100%	41	-	-	-	-	-	-	18	8	13	-	2
PC200	Regulated River Operations	100%	4,413	273	373	401	119	604	724	1,019	432	324	59	85
PC220	Regulated Water Billing	100%	390	32	21	40	27	35	56	49	74	6	1	49
PC221	Regulated Water Metering	100%	3,848	-	245	341	120	403	681	713	910	435	-	-
PC300	Flood airspace policy	50%	9	-	-	-	-	-	-	-	-	9	-	-
PC310	Flood operation plans	100%	115	-	-	-	-	46	59	6	3	1	-	-
PC405	Dam Safety Emg Plans	100%	13	-	-	-	-	-	-	-	-	9	2	2
PC408	Water Infrastruct Insurance	100%	2,055	105	308	220	67	302	205	338	125	332	27	26
PC410	Rural Water Infrastructure Maintenance	100%	193	-	-	-	-	96	97	-	-	-	-	-
PC412	Rural Water Infrastructure Storage Maintenance Audit	100%	13	-	-	-	-	-	-	5	8	-	-	-
PC413	Rural Water Infrastructure Land & Building Maintenance	100%	2,554	47	180	196	141	214	218	303	49	841	145	220
PC416	Dam Maintenance Work	100%	6,151	-	652	987	270	951	1,282	666	132	826	190	195
PC417	River Structure Maintenance	100%	2,658	-	382	208	-	330	271	1,228	239	-	-	-
PC419	River Channel Maintenance	75%	8	-	4	4	-	-	-	-	-	-	-	-
PC420	Rural Water Infrastructure Surveillance	100%	777	50	53	100	54	107	81	129	-	136	43	24
PC421	Rural Water Infrastructure Storage Surveillance Data Collection.	100%	3,215	80	203	395	234	392	469	567	147	478	134	116
PC423	Reg River Structure Surveillance	100%	154	-	55	41	-	19	17	22	-	-	-	-
			31,451	795	3,067	3,532	1,244	4,159	4,877	6,085	2,470	3,807	643	772

Total State Water Operating Expenditure For Year Ended 30 June 2004 ($'000)

Sub Product	Expenditure	IPART User share	Total Regulated	Border Rivers	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PA100	Quantity data collection & archiving	70%	2,214	101	304	288	109	267	219	539	135	15	212	25
PA120	Quality data collection & archiving	50%	173	19	8	13	18	21	42	2	8	5	34	3
PA220	Groundwater quality data collection	100%	18	-	-	-	-	-	18	-	-	-	-	-
PB230	Surface Water Licence Surveillance	100%	22	6	-	2	-	-	-	7	7	-	-	-
PC102	Customer & industry liaison	100%	238	3	25	29	-	46	57	27	51	-	-	-
PC200	Reg river operations	100%	3,013	167	296	297	122	564	542	521	261	30	169	44
PC220	Reg billing	100%	379	31	20	39	26	34	55	49	70	1	6	48
PC221	Reg metering	100%	3,086	381	215	-	84	214	508	536	659	-	489	-
PC310	Flood operation plans	100%	12	-	-	4	-	1	-	7	-	-	-	-
PC405	Dam safety emergency plans	100%	49	7	4	15	9	1	2	4	-	1	2	4
PC408	Public liability and other infrastr insurance	100%	1,656	55	201	146	55	274	183	329	120	-	293	-
PC410	Rural water infrastructure maintenance	100%	116	-	-	-	-	57	59	-	-	-	-	-
PC412	Storage maintenance audit	100%	185	23	20	19	9	6	18	29	-	7	42	12
PC413	Maintenance of land and buildings	100%	1,930	56	189	143	53	251	202	308	51	94	464	119
PC414	Mnt/ops recr & non-water supply facilities	0%	14	-	-	-	-	-	6	-	8	-	-	-
PC416	Maintenance of dam works	100%	4,055	-	419	755	164	618	716	413	127	94	630	119
PC417	River structure maintenance	100%	1,124	82	98	151	-	122	188	434	49	-	-	-
PC419	River channels and banks maintenance	75%	49	-	21	10	-	-	-	13	5	-	-	-
PC420	Water infrastructure surveillance	100%	277	30	25	23	9	36	32	48	-	14	48	12
PC421	Storage surveillance data colln and analysis	100%	1,505	257	98	-	69	189	206	254	28	112	231	61
PC423	Reg, rereg,other structure surveillance data coll	100%	205	31	31	-	36	18	16	54	5	-	-	14
			20,338	1,254	1,974	1,937	764	2,719	3,069	3,574	1,585	373	2,628	461

Total State Water Sub-Product Operating Expenditure ($'000) For Year Ended 30 June 2003

Sub Product	Expenditure	IPART User share	Total Regulated	Border Rivers	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PA100	Quantity data collection & archiving	70%	2,204	80	239	292	62	518	411	417	78	0	107	0
PA120	Quality data collection & archiving	50%	163	23	5	9	19	31	26	5	10	2	28	5
PA130	Quality data management	50%	28	28	0	0	0	0	0	0	0	0	0	0
PA220	Groundwater quality data collection	100%	44	11	0	0	0	0	33	0	0	0	0	0
PB230	Surface Water Licence Surveillance	100%	28	0	0	1	0	0	0	15	12	0	0	0
PC100	State river operations policy and plans	100%	66	15	5	4	4	0	0	1	37	0	0	0
PC102	Customer & industry liaison	100%	334	25	30	45	0	56	53	54	71	0	0	0
PC120	Annual river operations planning	100%	160	31	0	75	0	0	0	10	0	7	37	0
PC200	Reg river operations	100%	3,738	279	261	383	119	686	585	793	338	46	183	65
PC220	Reg billing	100%	320	20	25	41	28	34	52	43	50	0	27	0
PC221	Reg metering	100%	2,879	99	120	329	93	241	437	440	680	0	440	0
PC405	Dam safety emergency plans	100%	31	3	0	5	2	1	1	9	0	1	5	4
PC408	Public liability and other infrastr insurance	100%	3,266	138	379	275	103	510	340	622	347	0	552	0
PC410	Rural water infrastructure maintenance	100%	185	112	0	0	0	36	37	0	0	0	0	0
PC412	Storage maintenance audit	100%	56	5	10	8	4	3	4	8	0	0	6	8
PC413	Maintenance of land and buildings	100%	1,637	113	105	152	67	195	195	205	27	183	249	146
PC416	Maintenance of dam works	100%	3,636	0	274	676	157	576	513	275	301	75	660	129
PC417	River structure maintenance	100%	1,556	203	107	173	2	391	221	350	109	0	0	0
PC419	River channels and banks maintenance	75%	37	0	19	8	0	0	0	0	10	0	0	0
PC420	Water infrastructure surveillance	100%	457	40	44	48	25	75	64	47	0	18	80	16
PC421	Storage surveillance data colln and analysis	100%	1,444	42	113	226	24	202	216	195	13	99	258	56
PC423	Reg, rereg,other structure surveillance data coll	100%	197	3	26	37	13	21	30	42	25	0	0	0
		-	22,799	1,297	1,763	2,796	722	3,579	3,281	3,745	2,112	431	2,644	429

Total State Water Capital Expenditure ($000) For Year Ended 30 June 2003

Sub Product	Expenditure	IPART User share	Regulated	Border Rivers	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PC400	Rural water infrastructure policy and planning	100%	539	-	-	-	-	-	214	-	322	-	-	3
PC402	Asset management plans, standards and audit	100%	1,609	86	236	172	64	343	-	386	-	-	322	-
PC404	Hydro power station development	0%	49	-	-	-	-	5	-	36	-	-	8	-
PC430	Water infrastructure rehabilitation & development	20%	9	-	-	-	-	-	-	9	-	-	-	-
PC431	Dam rehabilitation & refurbishment	20%	1,335	12	30	74	9	110	-	391	-	148	561	-
PC432	Dam major periodic maintenance	100%	1,546	127	274	425	54	243	279	65	-	5	62	12
PC434	Dam development - service enhance/growth	100%	323	-	-	-	-	-	-	155	45	123	-	-
PC435	River structure rehabilitation & refurbishment	20%	4,570	50	979	509	7	384	1,425	710	506	-	-	-
PC436	River structures major periodic maintenance	100%	162	-	-	-	-	-	162	-	-	-	-	-
PC437	River structures develop - regulatory compliance	100%	7	-	-	-	-	-	2	-	5	-	-	-
PC438	River structures develop - service enhanc/growth	100%	801	-	-	169	-	85	4	60	22	-	461	-
PC450	Dam Compliance-Environment	50%	318	4	-	314	-	-	-	-	-	-	-	-
PC452	Regulated River Compliance-Environment	50%	35	9	-	-	-	-	-	-	26	-	-	-
PC456	Dam Compliance- Upgrade	0%	4,563	-	1,080	2,388	523	113	283	176	-	-	-	-
Total		-	15,866	288	2,599	4,051	657	1,283	2,369	1,988	926	276	1,414	15

Total State Water Capital Expenditure ($'000) For Year Ending 30 June 2004

Sub Product	Expenditure	IPART User share	Regulated	Border Rivers	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PC404	Hydro power station development	0%	96	-	-	-	-	9	-	72	-	-	15	-
PC430	Water infrastructure rehabilitation & development	20%	5,740	-	-	-	-	5,590	10	2	126	12	-	-
PC431	Dam rehabilitation & refurbishment	20%	2,208	-	84	8	-	342	326	901	50	62	430	5
PC432	Dam major periodic maintenance	100%	3,503	425	646	699	95	286	170	-	671	24	461	26
PC434	Dam development - service enhance/growth	100%	58	-	-	-	-	-	-	57	1	-	-	-
PC435	River structure rehabilitation & refurbishment	20%	3,610	57	1,023	799	111	389	510	501	209	-	-	11
PC436	River struct.major periodic maintenance	100%	272	-	272	-	-	-	-	-	-	-	-	-
PC437	River structure develop - regulatory compliance	100%	13	-	-	-	-	2	11	-	-	-	-	-
PC438	River structure develop - service enhanc/growth	100%	566	-	-	-	-	38	473	-	55	-	-	-
PC450	Dam Compliance-Environment	50%	103	-	-	103	-	-	-	-	-	-	-	-
PC451	Dam Compliance-OH&S	50%	72	-	-	-	-	35	-	-	-	-	37	-
PC452	Regulated River Compliance	50%	582	-	-	-	-	-	541	-	41	-	-	-
PC456	Dam Compliance-Upgrade	0%	3,880	-	316	1,033	1,458	280	237	556	-	-	-	-
	Total Capital Expenditure		20,703	482	2,341	2,642	1,664	6,971	2,278	2,089	1,153	98	943	42

Projected Total State Water Capital Expenditure ($'000) For Year Ending 30 June 2006

Sub Product	Description	Total Capital	Border	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PC402	TAMP	4,165.0	26.1	224.0	1,651.5	109.5	481.2	510.8	838.7	109.1	65.3	105.5	43.3
PC415	Other Non IPART	1,479.5	-	-	2.2	2.3	1.2	1,432.9	40.9	-	-	-	-
PC431	Dam rehabilitation & refurbishment	1,543.0	-	5.0	500.0	-	780.0	88.0	120.0	-	-	50.0	-
PC432	Dam major periodic maintenance	4,994.3	248.7	1,413.2	389.3	105.1	348.5	249.0	464.1	475.0	553.1	432.3	316.0
PC434	Dam development - service enhance/growth	1,510.0	-	-	20.0	20.0	265.0	135.0	270.0	100.0	120.0	460.0	120.0
PC435	River structure rehabilitation & refurbishment	2,565.0	-	110.0	-	-	40.0	245.0	2,150.0	20.0	-	-	-
PC436	River struct.major periodic maintenance	1,455.4	-	129.0	215.0	-	280.6	190.8	545.0	95.0	-	-	-
PC438	River structure develop - service enhanc/growth	2,436.5	-	200.0	485.0	-	11.5	1,030.0	500.0	210.0	-	-	-
PC450	Dam Compliance-Environment	1,795.0	10.0	-	200.0	50.0	1,500.0	-	-	-	-	25.0	10.0
PC451	Dam Compliance-OH&S	107.0	-	50.0	2.0	-	20.0	20.0	15.0	-	-	-	-
PC452	Regulated River Compliance	2,592.0	-	-	700.0	-	-	1,668.0	-	224.0	-	-	-
PC453	Regulated River Compliance-OH&S	30.0	-	-	-	-	30.0	-	-	-	-	-	-
PC456	Dam Compliance-Upgrade	22,395.0	10.0	400.0	14,500.0	950.0	1,680.0	200.0	4,535.0	-	-	120.0	-
PC500	Decommissioning	4.6	-	-	-	0.8	-	3.8	-	-	-	-	-
		47,072.3	294.8	2,531.2	18,665.0	1,237.7	5,438.0	5,773.3	9,478.7	1,233.1	738.4	1,192.8	489.3

Projected Total State Water Capital Expenditure ($'000) For Year Ending 30 June 2007

Sub Product	Description	Total Capital	Border	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PC402	TAMP	1,350.1	2.2	29.2	589.5	136.5	201.0	39.9	284.3	32.0	2.7	31.9	0.9
PC415	Other Non IPART	608.5	-	-	-	-	318.2	0.4	270.0	19.9	-	-	-
PC431	Dam rehabilitation & refurbishment	302.0	-	2.0	-	-	140.0	10.0	-	100.0	-	50.0	-
PC432	Dam major periodic maintenance	2,917.3	32.1	185.0	354.0	46.5	319.5	141.0	634.5	422.8	101.1	646.3	34.5
PC434	Dam development – service enhance/growth	1,190.0	-	-	-	20.0	230.0	335.0	5.0	200.0	-	400.0	-
PC435	River structure rehabilitation & refurbishment	732.0	-	160.0	-	-	-	115.0	407.0	50.0	-	-	-
PC436	River struct.major periodic maintenance	655.5	-	231.5	83.0	-	157.6	125.8	52.6	5.0	-	-	-
PC438	River structure develop - service enhanc/growth	9,265.0	-	95.0	460.0	-	-	360.0	8,200.0	150.0	-	-	-
PC450	Dam Compliance-Environment	1,350.0	-	-	300.0	50.0	1,000.0	-	-	-	-	-	-
PC451	Dam Compliance-OH&S	40.0	-	20.0	-	-	-	20.0	-	-	-	-	-
PC452	Regulated River Compliance	1,532.0	-	-	300.0	-	-	132.0	850.0	250.0	-	-	-
PC453	Regulated River Compliance-OH&S	125.0	-	-	-	-	70.0	55.0	-	-	-	-	-
PC456	Dam Compliance-Upgrade	31,885.0	50.0	400.0	20,600.0	5,000.0	5,300.0	200.0	235.0	-	-	100.0	-
PC500	Decommissioning	1.5	-	-	-	-	-	-	1.5	-	-	-	-
	Total	51,953.9	84.3	1,122.7	22,686.5	5,253.0	7,736.3	1,534.1	10,939.9	1,229.7	103.8	1,228.2	35.4

Projected Total State Water Capital Expenditure ($'000) For Year Ending 30 June 2008

Sub Product	Description	Total Capital	Border	Gwydir	Namoi	Peel	Macquarie	Lachlan	Murrumbidgee	Murray	North Coast	Hunter	South Coast
PC402	TAMP	1,450.1	0.5	22.5	827.2	114.4	67.4	80.9	254.9	30.1	7.2	44.8	0.2
PC415	Other Non IPART	1.6	-	-	-	-	1.2	0.4	-	-	-	-	-
PC431	Dam rehabilitation & refurbishment	545.0	-	5.0	-	-	25.0	-	390.0	125.0	-	-	-
PC432	Dam major periodic maintenance	2,410.9	17.0	114.0	80.5	89.0	871.5	314.0	257.0	410.0	188.1	64.3	5.5
PC434	Dam development - service enhance/growth	890.0	-	-	-	-	-	240.0	50.0	200.0	-	400.0	-
PC435	River structure rehabilitation & refurbishment	257.0	-	-	-	-	20.0	50.0	112.0	75.0	-	-	-
PC436	River struct.major periodic maintenance	622.9	-	76.0	15.0	-	183.1	271.3	41.5	36.0	-	-	-
PC438	River structure develop - service enhanc/growth	9,645.0	-	100.0	1,100.0	-	-	1,405.0	7,040.0	-	-	-	-
PC450	Dam Compliance-Environment	2,250.0	-	50.0	1,500.0	700.0	-	-	-	-	-	-	-
PC451	Dam Compliance-OH&S	-	-	-	-	-	-	-	-	-	-	-	-
PC452	Regulated River Compliance	700.0	-	-	-	-	-	-	550.0	150.0	-	-	-
PC453	Regulated River Compliance-OH&S	530.0	-	-	-	-	530.0	-	-	-	-	-	-
PC456	Dam Compliance-Upgrade	30,170.0	-	400.0	24,700.0	3,000.0	600.0	400.0	-	-	50.0	1,020.0	-
PC500	Decommissioning	-	-	-	-	-	-	-	-	-	-	-	-
		49,472.5	17.5	767.5	28,222.7	3,903.4	2,298.2	2,761.6	8,695.4	1,026.1	245.3	1,529.1	5.7

13 APPENDIX 6 – YANCO-COLUMBO-BILLABONG NRMP COSTS

Yanco Columbo Creek and Tributaries NRMP Budget ($)

Focus	Activity	Unit	$/unit	Sub total	Responsibility	YACTAC 154GL	M'bidgee 2380 GL	Water for Rivers	CMA	YACTAC in kind	Other
						154687	2380000				
Staffing Project Co-ordinator	Co-ordinate an inter agency approach, prepare funding proposals and administration	One pa	95,000	**950,000**	YACTAC/ Water for rivers	450,000	400,000	100,000			
Staffing Implementation officer	Implement on ground works, prepare contracts and tenders	One pa	40,000	**400,000**	YACTAC	200,000	200,000				
Staffing	NRMP committee	per Year	20,000	**200,000**	YACTAC/YACTAC in kind	150,000				50,000	
Willows	Removal	per tree	1,250	**5,875,000**	CMA		4,375,000		1500000		
Willows	Restoration	per Year	75,000	**750,000**	State water		750,000				
Coly Channel	Alternative water entry point	per Year						-			
LWD	Management control	per tree	350	**4,550,000**	CMA			4,550,000			
LWD	On going	pa	35,000	**350,000**	State water		350,000				
Flood runners	construction of banks to prevent escapes flows and losses	per runner	7,350	**500,000**	State water		500,000				
Flood runners	construction regulators for environmental control	per runner	33,000	**500,000**	Wet land working group						500,000
Cumbungi	Control problem area	per area	50,000	**500,000**	State water		500,000				
Cumbungi	Maintenance	pa	20,000	**200,000**	State water		200,000				
Weirs	Re engineering or removal			**1,500,000**	State water		1,500,000				
Revegetation	Supply of trees	per km	500	**240,000**	Greening Australia						240,000
Revegetation	Planting of trees	per km	1,500	**720,000**	YACTAC in kind					720,000	
Fencing	Materials	per km	2,000	**950,000**	Greening Australia/ CMA				475,000		475,000

Yanco Columbo Creek and Tributaries NRMP Budget ($)

Focus	Activity	Unit	$/unit	Sub total	Responsibility	YACTAC 154GL	M'bidgee 2380 GL	Water for Rivers	CMA	YACTAC in kind	Other
Fencing	Construction	per km	1,000	**470,000**	YACTAC in kind					470,000	
Fish stocking		per Year	5,000	**100,000**	CMA						100,000
Incidental costs		per Year	10,000	**1,318,000**	YACTAC	500,000	500,000				318,000
Water Quality	Monitoring evaluation system	per Year	400,000	**1,200,000**	CMA				1,200,000		
Flow regulation & monitoring	Data Collection	per Year	100,000	**2,124,000**	CMA Post graduate				2,124,000		
Totals				**23,397,000**		1,300,000	9,275,000	4,650,000	5,299,000	1,240,000	1,633,000
Levy per meg per yr						0.84	0.39				
Yearly cost (over 10 years)						130,000	927,500	465,000	529,900	124,000	163,300
% of total project						6%	40%	20%	23%	5%	7%
					Borrowings *	9,230	65,853				
Amended levy per ML entitlement						**0.900**	**0.417**				