

**Sydney Water Supplementary  
Submission to the Independent  
Pricing and Regulatory Tribunal  
Review of Metropolitan Water  
Agency Prices**

March 2005

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# Contents

Contents .....	iii
List of Figures .....	iv
List of Tables .....	v
Executive summary .....	vi
INTRODUCTION.....	vi
SYDNEY WATER’S EXPENDITURE FORECAST.....	vi
SYDNEY WATER’S DEMAND FORECAST.....	viii
SYDNEY WATER’S REVENUE ENTITLEMENT .....	viii
REVENUE AND PRICE OUTCOMES .....	ix
RECYCLED WATER PRICING PRINCIPLES.....	ix
1 Introduction.....	1
1.1 PURPOSE OF SUPPLEMENTARY SUBMISSION.....	1
1.2 STRUCTURE OF THIS SUPPLEMENTARY SUBMISSION .....	2
2 Revised capital expenditure .....	5
2.1 OVERVIEW.....	5
2.2 EXISTING MANDATORY STANDARDS .....	6
2.3 GROWTH.....	7
2.4 NEW MANDATORY STANDARDS .....	8
2.5 BUSINESS EFFICIENCY.....	10
2.6 NSW GOVERNMENT PROGRAMS.....	10
2.7 CAPITAL EXPENDITURE BY ACTIVITY .....	11
3 Revised operating expenditure.....	13
4 Revised demand forecast.....	17
5 Revenue and price implications of the supplementary submission .....	19
5.1 CALCULATING SYDNEY WATER’S REVENUE ENTITLEMENT .....	19
5.2 SYDNEY WATER’S FINANCIAL INDICATORS.....	19
5.3 DETERMINING PRICES.....	20
6 Application of recycled water pricing principles.....	21
6.1 INTRODUCTION.....	21
6.2 FRAMEWORK .....	21
6.2.1 Pricing objectives .....	21
6.2.2 Overview .....	22
6.2.3 Gross incremental costs .....	22
6.2.4 Avoided costs.....	22
6.2.5 Net costs .....	23
6.2.6 Establishing efficient prices and tariff structures .....	23
6.2.7 Summary.....	24

## List of Figures

Figure 1: Revised expenditure forecast under existing mandatory standards .....	7
Figure 2: Revised growth expenditure forecast.....	8
Figure 3: Revised forecast under new mandatory standards.....	9
Figure 4: Revised business efficiency expenditure forecast .....	10
Figure 5: Revised expenditure forecast for Government programs .....	11

## List of Tables

Table 1: Update on Sydney Water's Main Submission .....	2
Table 2: Proposed changes to Sydney Water's capital expenditure 2005/06 to 2008/09 by driver.....	5
Table 3: Sydney Water's proposed capital expenditure 2005/06 to 2008/09 by activity.....	11
Table 4: Revised operating expenditure for the determination period (\$04/05).....	14
Table 5: Revised water operating expenditure for the Determination period (\$04/05) .....	15
Table 6: Revised wastewater operating expenditure for the Determination period (\$04/05) ..	15
Table 7: Revised stormwater operating expenditure for the Determination period (\$04/05) ..	15
Table 8: Revised corporate operating expenditure for the Determination period (\$04/05).....	16
Table 9: Sydney Water's revised demand forecast 2005/06 to 2008/09.....	17

# Executive summary

## INTRODUCTION

In November 2004, Sydney Water Corporation (Sydney Water) presented the Independent Pricing and Regulatory Tribunal (the Tribunal) with its submission on the Tribunal's determination of Sydney Water's prices from 1 July 2005<sup>1</sup> (the Main Submission). Sydney Water's Submission is available on the Tribunal's website at [www.ipart.nsw.gov.au](http://www.ipart.nsw.gov.au). The Submission outlined Sydney Water's expenditure and demand forecasts, and the resulting revenue requirements and price impacts, based on the best information available at that time.

This Supplementary Submission provides the Tribunal with further information to assist it in finalising its Determination on several key inputs:

- *Sydney Water's capital and operating expenditure forecast* - capital and operating expenditure estimates have been updated to reflect more recent information, including the Government's announcement on the sequencing of growth in the northwest and southwest sectors of Sydney and the findings of WS Atkins and Cardno MBK<sup>2</sup> on the phasing and scope of Sydney Water's expenditure over the period; and
- *Demand for water* – demand estimates for water in Sydney Water's service area have been revised to reflect current rainfall conditions, latest information on the implementation of Sydney Water's Demand Management Program and the findings of McLennan Magasanik Associates' (MMA) review of Sydney Water's demand forecast for the price review<sup>3</sup>.

In summary, Sydney Water has updated the information provided to the Tribunal in November 2004 and now proposes a seven per cent reduction in its proposed capital expenditure, a 0.5 per cent increase in its operating expenditure and a 3.5 per cent decrease in its demand forecast over the Determination period. These are minor changes that reflect the best available information on Sydney Water's requirements over the next four years, including improved efficiencies in and sequencing of service delivery and removal of data entry errors included in its Main Submission. These changes will result in the same service outcomes outlined in Sydney Water's Main Submission. This information is presented to the Tribunal to assist it in finalising its Determination.

In addition, Sydney Water has provided more information on its approach to setting prices for recycled water, which is set out in this Supplementary Submission.

## SYDNEY WATER'S EXPENDITURE FORECAST

Sydney Water's Main Submission described a need to invest approximately \$2.6 billion between 2005/06 to 2008/09 (the proposed Determination period) to meet the Government's required service outcomes.

Sydney Water also noted in its Main Submission its intention to provide a Supplementary Submission to update the Tribunal on a number of key uncertainties where Sydney Water's proposed service requirements were still being finalised.

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<sup>1</sup> For the issues raised by the Tribunal for this review, see the Tribunal's issues paper - Independent Pricing and Regulatory Tribunal. *Review of Metropolitan Water Agency Prices, Issues Paper*, No. DP75, July 2004.

<sup>2</sup> WS Atkins and Cardno. *Capex, Asset Management and Opex Review – Sydney Water*, Overview Report, February 2005.

<sup>3</sup> McLennan Magasanik Associates. *Review of Consumption Forecasts – NSW Metropolitan Water Agencies*, 21 December 2004.

The key uncertainties included:

- *Growth* - the timing and scale of growth in new urban sectors of Sydney, the impact of the Building and Sustainability Index<sup>4</sup> (BASIX), which promotes a wider, more innovative range of options for servicing growth in both infill and Greenfield sites<sup>5</sup>; and
- *Sewer overflow abatement* - the investment necessary to meet the Department of Environment and Conservation's (DEC) wet and dry weather overflow abatement requirements.

This Supplementary Submission provides an update on Sydney Water's proposed expenditure in these areas. Sydney Water has also taken in the opportunity in this Supplementary Submission to refine its overall expenditure forecasts, focusing on the proposed scope and timing of its capital works program and incorporating the findings of WS Atkins' review for the Tribunal of the appropriateness of Sydney Water's allowable expenditure for the Determination period<sup>6</sup>. WS Atkins found that Sydney Water is applying asset management practices across its business that are consistent with best practice and has in place asset strategies that provide long-term investment plans, which formed the basis of the Main Submission. WS Atkins found that agency had the resources to complete the proposed program, but challenged whether the proposed step increases in expenditure were achievable<sup>7</sup>. In particular, Sydney Water has taken on board recent Government announcements and WS Atkins' findings on the phasing and timing of its growth expenditure.

In addition to the above changes, and the need for consistency with International Financial Reporting Standards (IFRS) mandated by NSW Treasury, Sydney Water will also cease to capitalise any borrowing costs from 1 July 2005. Accordingly, these costs (\$20 million per annum) have been removed from the capital program, but do not impact operating expenditure.

The impact of these changes is to reduce Sydney Water's proposed capital expenditure over the Determination period by approximately seven per cent compared to the Main Submission, with the drivers for this reduction including:

- changes in the timing of planned capital works that will not have a material impact on expected service outcomes – this accounts for half of the seven per cent reduction in capital expenditure and includes \$88 million of the growth-related expenditure now forecast to be spent in 2009/10 and 2011/12 (which is outside the proposed price path) in support of the Department of Infrastructure, Planning and Natural Resources' (DIPNR's) land release program. Sydney Water's Main Submission outlined its intention to service growth at the rate and in the areas determined by DIPNR, which has now been clarified. It also accounts for \$5 million in capital works that has been brought forward for improved reliability at Bondi sewage treatment plant;
- correction of data entry errors in Sydney Water's Main Submission and Special Information Return (SIR) – this accounts for one quarter of the seven per cent reduction in capital expenditure and includes \$30 million for the renewal of sewage treatment plant control systems, \$3 million for reservoir renewals that was transferred to operational expenditure and \$20 million for the Priority Sewerage Program. These are accounting issues that will not affect service delivery over the Determination period; and
- projected savings in capital costs that have resulted from Sydney Water's ongoing asset planning process – this accounts for one quarter of the seven percent reduction in capital

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<sup>4</sup> In July 2004 the NSW Government introduced the Building and Sustainability Index (BASIX) to improve the environmental performance of buildings in NSW. BASIX requires all new single dwelling residential homes in Sydney to use 40 per cent less water and produce 25 per cent less greenhouse gas emissions than the average house. This will be extended to all new houses in NSW in July 2005. In addition, from July 2005 all new multi-unit residential dwellings will be required to achieve the BASIX reductions. BASIX is part of the planning approvals process, a BASIX certificate is required before development approval will be given by the Local Council.

<sup>5</sup> NSW Government. *Meeting the challenges- Securing Sydney's water future (The Metropolitan Water Plan 2004)* 2004

<sup>6</sup> *ibid.* Footnote 2, pp 36-37.

<sup>7</sup> *ibid.* Footnote 2.

expenditure and includes savings of \$36.5 million in sewage treatment plant renewals due to improved integrated management strategies being developed for these plants, \$3 million savings for the Mulgoa Sewerage Scheme and \$10 million in 2005/06 by better targeting water main renewals. Through these changes, Sydney Water will achieve the same performance and reliability levels at reduced cost to the community.

These reductions are slightly offset by accelerated capital expenditure on the refurbishment and installation of bulk water meters under Sydney Water's leakage management program, which Sydney Water has agreed with WS Atkins as part of its review of leakage measures for Sydney Water's Operating Licence.<sup>8</sup> It also includes additional expenditure on property rationalisation under Sydney Water's business efficiency program. There is no material change to Sydney Water's proposed expenditure on sewer overflow abatement, with Sydney Water currently finalising these requirements with the Department of Environment and Conservation (DEC) for the environment protection licences that are to apply from 1 July 2005.

Overall, these changes relate to the timing and scope of Sydney Water's capital expenditure and do not change the outcomes that will be provided under each of the service drivers set out in Sydney Water's Main Submission. These changes also reflect the main findings of WS Atkins on Sydney Water's allowable expenditure, which Sydney Water has taken on board and reflected in this submission to assist the Tribunal in finalising its Determination.

In addition to these adjustments to capital expenditure, Sydney Water has also updated its operating expenditure requirements, predominantly to more accurately reflect its proposed expenditure on its Demand Management Program, which will be a major input to the actions to manage Sydney's potable water supply into the future. These proposed adjustments increase Sydney Water's operating expenditure by 0.5 per cent over the forecast set out in the Main Submission.

This minor increase in operating expenditure is more than offset by the reduction in capital expenditure in terms of changes in Sydney Water's underlying cost structure.

## SYDNEY WATER'S DEMAND FORECAST

Sydney Water has also taken the opportunity to update its demand forecast to reflect the key findings of MMA's review for the Tribunal of Sydney Water's demand forecast for the Determination<sup>9</sup>. The MMA report concluded that the demand forecasts provided in Sydney Water's Main Submission are reasonable given the uncertainty in estimating demand savings. In most years there was less than two per cent variation between Sydney Water's demand forecast and MMA's own modelling results.

Sydney Water's Submission also noted the uncertainty surrounding its forecast of water sales from 1 July 2005, depending on rainfall patterns, storage levels and demand outcomes. Based on current weather conditions, Sydney Water has revised its demand forecast downwards by 3.5 per cent over the Determination period. The likelihood of increased rainfall after July 2005 remains unclear. This will be an important consideration for the Tribunal in finalising the Determination, given the impact of reduced water sales on Sydney Water's revenue into the future.

## SYDNEY WATER'S REVENUE ENTITLEMENT

Sydney Water has raised concerns with the Tribunal's Secretariat on proposed modifications to its building block methodology for determining water agencies' revenue requirements for the Determination.

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<sup>8</sup> WS Atkins. IPART – *Potential Leakage Requirements for Sydney Water*, Final Report, January 2005. these measures form part of the Government's commitment to spend \$82 million on leak repairs and water main renewals under the Government's Metropolitan Water Plan.

<sup>9</sup> *ibid.* Footnote 3.



Sydney Water's Main Submission applied the Tribunal's building block methodology as set out in Appendix Four of its 2003 Price Determination<sup>10</sup>. This methodology does not incorporate the Tribunal's revised approach to calculating the appropriate return on working capital and fixed assets each year, which it applied in the determination of NSW electricity distribution prices from 1 July 2004 and now intends to apply to the NSW water agencies<sup>11</sup>.

Sydney Water does not support the Tribunal's proposed modifications to calculating Sydney Water's revenue entitlement. In particular, Sydney Water does not accept the theoretical assumption that water agencies can earn a real rate of return equivalent to their nominal 'weighted average cost of capital' on income they collect throughout the financial year. In practice water agencies have statutory prohibitions that limit their ability to earn a return to the 'risk free rate'<sup>12</sup>. While Sydney Water accepts the Tribunal's interest in applying a consistent building block methodology to regulate utility prices, this theoretical assumption on Sydney's ability to earn high interest results in a financial loss to Sydney Water which it cannot recoup from any other source.

## REVENUE AND PRICE OUTCOMES

In finalising its Determination over the next few months, Sydney Water urges the Tribunal to carefully consider the implications of the changes set out in this Supplementary Submission for Sydney Water, both over the Determination period and into the medium and longer term.

Sydney Water accepts that the Tribunal will determine final prices for its water and wastewater services to apply from 1 July 2005. These prices should be set to recover Sydney Water's revised expenditure and demand forecasts and with regard to the practical limitations on Sydney Water's ability to reinvest its income. The revenue implications of the increase in Sydney Water's operating expenditure requirements are more than offset by the reduction in Sydney Water's capital expenditure requirements.

In Sydney Water's Main Submission, it was emphasised that all customers should pay for the true costs of supplying services. This is important for both ensuring for economic efficiency and fairness.

However, Sydney Water understands that it may be appropriate to phase in price changes over time. Recognising the importance of sending strong demand management signals, Sydney Water reiterates its position that prices should be consistent with full cost recovery by the end of the proposed Determination period.

## RECYCLED WATER PRICING PRINCIPLES

Sydney Water's Main Submission set out its proposal to significantly expand the provision of recycled water services in Sydney. Sydney Water believes that appropriate pricing plays a key role in underpinning the delivery of these new services; with both the potable water price and recycled water prices significantly determining how these services are taken up and used by customers. In particular, Sydney Water notes that recycled water can be provided in many different forms that must be tailored to the local circumstances and that it plays an important role in helping to manage the scarcity of potable water in Sydney and the quality of its streams and rivers.

Based on this, Sydney Water's Main Submission set out high-level principles for pricing recycled water, which are to:

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<sup>10</sup> Independent Pricing and Regulatory Tribunal. *Sydney Water Corporation - Prices of Water Supply, Wastewater and Stormwater Services from 1 July 2003 to 30 June 2005*, Determination 4 2003, May 2003. Hunter Water and the Sydney Catchment Authority also applied the Tribunal's building block methodology in their submissions for prices from 1 July 2005.

<sup>11</sup> KPMG. *Final Report – Assumptions and regulatory requirements of the IPART regulatory model – 19 August 2003*. The Tribunal used this report to revise a number of assumptions used in its financial model for the treatment of working capital, depreciation and rate of return calculations in determining an agency's annual revenue requirements.

<sup>12</sup> 'Risk free rate' – generally the return on short-term treasury securities where there is little likelihood of default.

- recover the efficient cost of service provision, including the cost of capital determined by the Tribunal and having regard to Sydney Water's avoided costs where appropriate; and
- set prices on a scheme-by-scheme basis.

The Tribunal's Secretariat has sought further information from Sydney Water on its proposed application of these principles in the determination of recycled water prices.

In summary, Sydney Water will set recycled water prices based on:

- the costs of the recycled water scheme, which is the maximum cost Sydney Water can recover via recycled water prices. These costs will be calculated on a 'net present value'<sup>13</sup> basis over the life of the scheme, at a discount rate reflecting the required rate of return on investment;
- the net cost of the recycled water scheme, that is, the costs of the scheme less any avoided costs to the water and wastewater system derived from the recycled water scheme. This net incremental cost reflects the minimum cost Sydney Water should recover via prices, with the avoided costs still being recovered from potable water and/or wastewater customers. Reflecting Sydney Water's avoided costs in recycled water prices is an important step in appropriately valuing the role that recycled water services will play in delivering improved, least-cost environmental outcomes to the community;
- recycled water prices will then be set within this price band based on:
  - customers' willingness to pay, which will be estimated on a scheme-by-scheme basis. The potable water price is likely to represent a ceiling as a substitute for recycled water; and
  - the total water management objectives of the scheme;
- additional funding could be sought, where appropriate, to cover any gap between the recycled water price and the incremental cost of the scheme. This funding could be provided through developer charges for new growth schemes.

Sydney Water also notes the National Competition Council's (NCC) final recommendation regarding Services Sydney's application for access to Sydney Water's sewerage network, which found that declaration of the proposed interconnection service would promote competition in Sydney's recycled water markets. In response, the Premier has asked the Tribunal to report on the appropriate market structure for providing water services in Sydney into the future. This review is likely to consider, for example, both the retail competition model supported by the NCC and the market issues raised by the Government's proposal that the private sector play a key role in providing up to 80 billion litres of recycled water to Western Sydney, at an estimated capital cost of over \$500 million.

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<sup>13</sup> 'Net present value' is the current value of future cash flows discounted by a factor of the period of an investment, into the current dollars of the day.

# 1 Introduction

Sydney Water Corporation (Sydney Water) is pleased to present this Supplementary Submission to the Independent Pricing and Regulatory Tribunal (the Tribunal) in relation to the review of metropolitan water agency prices from 1 July 2005 (the Price Review).

## 1.1 PURPOSE OF SUPPLEMENTARY SUBMISSION

In November 2004, Sydney Water presented the Tribunal with its Main Submission, which outlined Sydney Water's expenditure and demand forecasts, and the resulting revenue requirements and price impacts, based on the best information available at that time. Sydney Water noted at the time the Main Submission was presented to the Tribunal that there was continued development in the regulatory and policy environment, which in turn has implications for Sydney Water's obligations and associated expenditure requirements over the next four years.

This Supplementary Submission provides the Tribunal with further information to assist it in finalising its Determination. This further information is necessary to reflect the effect of recent developments on Sydney Water's expenditure requirements and demand forecasts. Key developments include:

- changes in the timing of planned capital works that will not have a material impact on expected service outcomes – this includes \$88 million of the growth-related expenditure now forecast to be spent in 2009/10 and 2011/12 in support of the Department of Infrastructure, Planning and Natural Resources' (DIPNR's) land release program. It also accounts for \$5 million that has been brought forward for improved reliability at Bondi sewage treatment plant
- correction of data entry errors in Sydney Water's Main Submission and SIR – this includes \$30 million for the renewal of sewage treatment plant control systems, \$3 million for reservoir renewals that was transferred to operational expenditure and \$20 million for the Priority Sewerage Program and related mandatory standards works. These are accounting issues that will not affect service delivery over the Determination period; and
- projected savings in capital costs that have resulted from Sydney Water's ongoing asset planning process – this includes savings of \$36.5 million in sewage treatment plant renewals due to improved integrated management strategies being developed for these plants, \$3 million savings for the Mulgoa Sewerage Scheme and \$10 million in 2005/06 by better targeting water main renewals.

These reductions are slightly offset by accelerated capital expenditure of \$2 million on the refurbishment and installation of bulk water meters under Sydney Water's leakage management program, which Sydney Water has agreed with WS Atkins as part of its review of leakage measures for Sydney Water's Operating Licence. They are also slightly offset by an additional expenditure under Sydney Water's business efficiency program, particularly on the rationalisation of Sydney Water's depot sites and refurbishment of operational sites at West Ryde.

Sydney Water's operating costs have also increased by \$6.4 million to provide contingency funding for community education if current low rainfall patterns continue and \$10 million to cover the cost of ongoing water conservation advertising and community education. Sydney Water also omitted \$8.3 million expenditure on its Demand Management Program from its SIR, though this was specified in its Main Submission. Operating costs have also slightly increased due to updates on labour price movements post finalisation of award negotiations in November 2004 and more current reduced superannuation cost estimates.

These revised expenditure estimates incorporate the feedback from the Tribunal's efficiency reviewers, WS Atkins and Cardno MBK<sup>14</sup>. In general, WS Atkins were supportive of Sydney Water's efforts to ensure appropriate levels of expenditure to maintain assets and meet future

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<sup>14</sup> *Ibid.* Footnote 2.

growth and increased standard requirements, while delivering efficiencies in both capital and operating expenditure. WS Atkins made specific recommendations in relation to the timing of growth capital expenditure, which Sydney Water has taken on board in responding to the recent announcement on land releases in Western Sydney. Sydney Water has also taken the opportunity to incorporate the feedback from the Tribunal’s demand forecast reviewers, McLennan Magasanik Associates’ (MMA)<sup>15</sup>. MMA’s modelling of Sydney Water’s demand forecasts is within a variation band of less than two per cent variation in most years. Sydney Water’s demand forecast has been updated to reflect MMA’s comments in relation to the savings generated by Sydney Water’s Demand Management Program.

These revisions do not materially affect service outcomes over the Determination period with the increases in operating expenditure more than offset by the reductions in capital expenditure in terms of changes in Sydney Water’s underlying cost structure. It is important that the Tribunal use this latest information in setting Sydney Water’s revenue requirements and the associated prices for Sydney Water’s services.

In addition to updating forecasts to reflect recent developments, this Supplementary Submission also discusses in more detail Sydney Water’s proposed approach to setting recycled water prices. Sydney Water’s Submission set out the high-level principles it intended to apply to the determination of prices on a scheme-by-scheme basis. This submission provides additional information on how recycled water prices should be set to facilitate the appropriate uptake of recycled water services in a variety of circumstances to ensure that environmental benefits are appropriately reflected and that each scheme is least-cost to the community.

## 1.2 STRUCTURE OF THIS SUPPLEMENTARY SUBMISSION

This Supplementary Submission is structured as follows:

- Section 2 discusses Sydney Water’s revised capital expenditure forecasts;
- Section 3 discusses Sydney Water’s revised operating expenditure forecasts;
- Sydney Water’s revised demand forecasts are presented in Section 4;
- the implications for revenue and prices are considered in Section 5; and
- Section 6 discusses the application of Sydney Water’s recycled water pricing principles.

The following table sets out how this Supplementary Submission updates the position set out in Sydney Water’s Main Submission.

Table 1: Update on Sydney Water’s Main Submission

Main Submission	Supplementary submission
<b>Section 2</b> (Sydney Water) – Sydney Water’s service obligations are driven by its legislative requirements, which it seeks to meet by managing its assets over the long-term to deliver services at least cost to the community.	The findings of WS Atkins’ efficiency review demonstrate the appropriateness of Sydney Water’s approach to planning and delivering least-cost service outcomes against Government requirements.
<b>Section 3</b> (Regulatory Context) – Sydney Water supports the Tribunal’s incentive-based approach to price regulation. Sydney Water favours the Tribunal setting a price cap for four years, supported by appropriate cost pass-through and revenue volatility mechanisms to manage unacceptable revenue uncertainty over this period.	The Supplementary Submission notes the possible impact of the likely ongoing drought on Sydney Water’s financial position, which the Tribunal will need to take into consideration when setting prices for the Determination, particularly if it introduces a greater reliance on user pays pricing.

<sup>15</sup> *ibid.* Footnote 3.

<p>revenue uncertainty over this period.</p>	
<p><b>Sections 4 &amp; 5</b> (Sydney Water's performance) – Sydney Water has demonstrated strong economic performance in recent years, including its increased productivity compared to other utilities and the economy and its performance in meeting the Tribunal's efficiency requirements from the 2003 Determination.</p>	<p>WS Atkins' efficiency review endorses Sydney Water's efforts to ensure appropriate levels of expenditure to maintain assets in their current state and meet future growth and increased standard requirements, while delivering efficiencies in both capital and operating expenditure.</p>
<p><b>Section 6</b> (Revenue Requirements) – Sydney Water supports the Tribunal's building block approach to determining revenue requirements (though noting its concerns over the Tribunal's proposed regulatory depreciation allowance). This includes the Tribunal's role in determining an appropriate return on investment for these services.</p> <p>Sydney Water applied a mid-point rate of return outcome of 6.5 per cent to be achieved by 2008/09. This is consistent with the rate of return outcome set by the Tribunal for the 2004 NSW electricity distributors' price determination.</p>	<p>Sections 2 and 3 of this supplementary submission outline how recent developments have reduced uncertainty surrounding the requirements for growth, sewer overflow and demand related investment, and changed Sydney Water's expenditure requirements over the Determination period.</p>
<p><b>Section 7</b> (Setting Prices) Sydney Water's approach to demand forecasting is based on its robust end-use modelling of programs to manage demand within the available potable water supply.</p> <p>Sydney Water supports tariff restructuring to provide an increased emphasis on 'pay by use' to encourage water conservation. The ongoing drought serves to highlight the importance of getting the price of water right in Sydney. Sydney Water also retains its position that the Tribunal could encourage 'pay by use' by either introducing an increased water usage price or an inclining block price. Sydney Water recommends that the water usage price increase to \$1.40 a kilolitre by 2008/09. By way of example, the customer impacts of this increased water usage price are an increase in the total average residential customer's bill by \$0.60 a week (or \$31 a year) in real terms.</p> <p>To manage any unacceptable customer impacts of price reform, Sydney Water supports implementation of the customer mitigation measures set out in its Main Submission.</p>	<p>Section 4 of this Supplementary Submission sets out a revised demand forecast, which reflects the current low rainfall conditions. Sydney Water has also incorporated key findings from MMA's review.</p> <p>Section 5 of this supplementary submission sets out Sydney Water's proposal for how the Tribunal should consider setting final prices for the Determination.</p> <p>Sydney Water notes the issues raised by the Public Interest Advocacy Centre (PIAC) in its submission to the Tribunal for the price review. Sydney Water has met with PIAC to discuss these issues and will work with stakeholders to confirm a process to implement customer mitigation measures that support the Determination.</p>
<p><b>Section 8</b> (Other Charges) – Sydney Water supports its proposal for miscellaneous and trade waste charges set out in its</p>	<p>Section 6 of this Supplementary Submission provides additional information on Sydney Water's proposed recycled water pricing</p>

<p>Submission.</p>	<p>principles. Sydney Water also welcomes the Tribunal's engagement of consultants to review agencies' miscellaneous service charge proposals for the Determination.</p>
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## 2 Revised capital expenditure

### 2.1 OVERVIEW

As outlined in Sections 2.3 and 5.3.3 of Sydney Water's Main Submission, Sydney Water's expenditure requirements are driven by its whole of life-cycle approach to managing its asset base. This approach ensures that expenditure is most efficiently allocated over the life of the asset.

WS Atkins have endorsed Sydney Water's application of asset management practices across its businesses as being consistent with best practice. Provision of good quality asset information of stock, condition and performance has been noted. In addition appropriate systems and asset strategies have been developed in some detail, allowing constructive modelling and risk assessment to support capital replacement proposals. The asset strategies have also provided rigour to long-term investments plans, which have been used in the pricing submission<sup>16</sup>.

WS Atkins also endorsed Sydney Water's procurement strategy as being consistent with best practice, which provides scope to drive efficiencies from its capital expenditure proposal over the Determination period.

Based on the investment requirements identified in its asset plans and taking into account additional demands created by growth, improved standards and NSW Government Programs, Sydney Water's Main Submission set out the need to invest approximately \$2.6 billion over the next four years to meet the required service outcomes. A number of key uncertainties were raised in the Submission, particularly in relation to those forecasts focussing on:

- *Growth related investments* - in particular the timing and scale of growth in new urban sectors and the impact of the Building Sustainability Index (BASIX) in facilitating more innovative options for providing new water services to both infill and Greenfield sites; and
- *Overflow abatement investments* - those costs associated with expected mandatory standards to support environmental improvements associated with dry and wet weather overflows from the sewerage system.

Since November 2004, Sydney Water has undertaken a detailed review of the individual projects and programs proposed in these areas and across its entire capital works program. In undertaking this review, consideration has been given to WS Atkins' findings that Sydney Water's phasing of expenditure needed further consideration to ensure adequate time was allowed for planning, internal and external approvals and procurement. Sydney Water has also sought to incorporate overall improvements in project cost estimates that it has identified in responding to WS Atkins findings, which has resulted in both reduced costs and more accurate timing estimates for the service outcomes set out in its Main Submission.

The capitalisation of borrowing costs have also been removed from the capital program in line with the new policy as stated under the IFRS, and mandated by NSW Treasury. Sydney Water will cease to capitalise any borrowing costs from 1 July 2005. The removal of borrowing costs from the capital program will reduce the proposed spending in each year by \$20 million. There will be no offsetting increase in operating expenditure, as the financing charges are not included in the regulated operating expenditure for pricing purposes. They are recovered through the 'weighted average cost of capital' calculation.

While the nature of Sydney Water's capital program means that it will always be subject to some volatility, the current review process has been undertaken with great care to ensure that the most realistic demands for capital are reflected. Sydney Water's resulting planned capital investment requirements are outlined in Table 2 below, which presents the original planned capital investment and proposed changes from 2005/06 to 2008/09 on the basis of the key drivers identified by the Tribunal and set out in Sydney Water's Main Submission. The reasons for these proposed changes are discussed in more detail by each driver below.

Table 2: Proposed changes to Sydney Water's capital expenditure 2005/06 to 2008/09 by driver

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<sup>16</sup> *ibid.* Footnote 2.

Expenditure (\$m - 2004/05 dollars)	2005/06	2006/07	2007/08	2008/09	Total
Existing mandatory standards	323	308	281	288	1,200
Revised existing mandatory standards	284	292	282	261	1119
Growth	188	256	254	139	837
Revised Growth	112	172	248	217	749
New mandatory standards	45	50	64	73	232
Revised new mandatory Standards	47	44	63	80	234
Discretionary capital expenditure	3	0	0	0	3
Revised discretionary standards	0	3	0	0	3
Business efficiency	21	17	16	17	71
Revised business efficiency	22	30	16	17	85
NSW Government programs	72	60	35	10	177
Revised NSW Government Programs	45	63	43	3	154
<b>Total</b>	<b>652</b>	<b>691</b>	<b>650</b>	<b>527</b>	<b>2,520</b>
<b>Revised Total</b>	<b>510</b>	<b>604</b>	<b>652</b>	<b>578</b>	<b>2344</b>

## 2.2 EXISTING MANDATORY STANDARDS

As part of its annual asset planning process under Sydney Water's Business Planning Framework (see Section 2.3 of the Main Submission), Sydney Water has reviewed and updated the project expenditure costs for a range of water and wastewater renewals projects, which has resulted in a reduction in expenditure for the following programs:

- \$10 million in 2005/06 on critical water main renewals following a review of the outcomes of the current pilot program, which indicated that new techniques for assessing asset condition have enabled Sydney Water to better target renewals on the most needed areas in the short term, getting the same result for reduced cost;
- \$36.5 million savings over the Determination period on sewage treatment plant renewals expenditure with most of the reduction at North Head, Bondi, Liverpool and Glenfield sewage treatment plants as a result of further detailed planning and confirmation of the required renewals and associated estimates. In addition \$5 million expenditure on the Bondi Reliability Improvement and Modernisation Program (RIAMP) has been brought forward to 2004/05 for delivery under the alliance contract for that project; and
- other minor adjustments to reflect updated forecast outcomes for 2005/06, including for example the transfer of some water-related capital projects of approximately \$3 million (mainly on reservoir renewals) to operating projects in line with revised capitalisation policies highlighted in the Main Submission.

### Revised capital expenditure



Sydney Water also notes its double counting of \$30 million for the renewal of its SCADA system in its Main Submission and SIR to the Tribunal. This was based on a data entry error in the compilation of the capital program from its asset plans.

This reduction in expenditure is offset to an extent by the advancement of expenditure on refurbishment and/or installation of bulk water meters. This expenditure, originally planned for completion in 2009/10 has been advanced by two years to meet active leak reduction requirements that Sydney Water has agreed with WS Atkins in its review of potential leakage regulation under the Operating Licence.

The net impact of proposed expenditure on existing mandatory standards is a 6.8 per cent reduction over the Determination period, as outlined in Figure 1 below, with no change in expected outcomes.

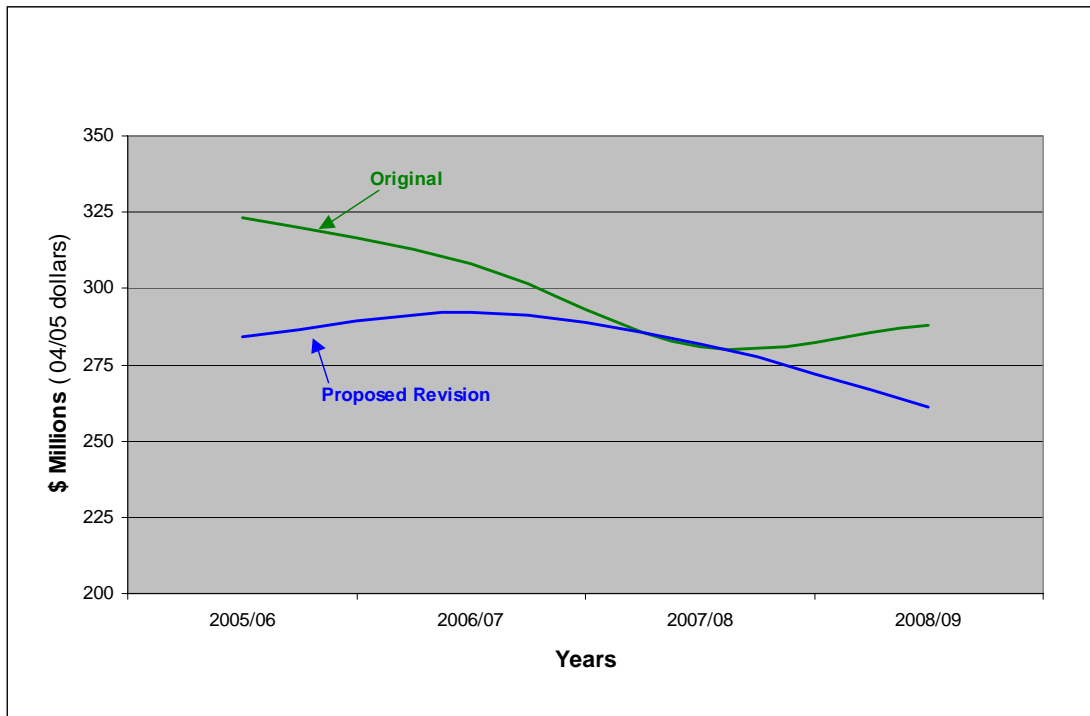


Figure 1: Revised expenditure forecast under existing mandatory standards

## 2.3 GROWTH

As set out in Section 6.2.3 of the Main Submission, growth capital expenditure is designed to meet the requirements of new customers or the increased requirements of existing customers. Sydney Water’s key programs for servicing growth include:

- installation of major new water and wastewater systems in the northwest and southwest sectors and the introduction of recycled water schemes in these new release areas;
- provision of new and amplified services to cater for growth in the Hoxton Park release area, including the construction of the Liverpool to Ashfield sewage transfer pipeline; and
- continued implementation of works identified in Sydney Water’s 2000-05 Development Servicing Plans.

Sydney Water’s forecast for growth expenditure in the Main Submission assumed large increases from 2005/06 to service the proposed northwest and southwest Greenfield release areas. These forecasts reflected the best available information on land releases at the time.

Sydney Water has reviewed the lead times to service major new release areas and revised downwards its growth expenditure forecast for the four year period. The revised forecasts are designed to support the Government’s announcement on 9 December 2004 of the proposed release of land in the North West and South West Sectors to provide 160,000 new homes over the next 30 years. The net effect of this revision is to focus more on planning in the early years of the Determination, with delivery of some key projects on the ground in later years, as

### Revised capital expenditure

illustrated in Figure Two below. These changes are consistent with the comments made by WS Atkins in their review of Sydney Water’s expenditure requirements.

Sydney Water continues to assume that large scale recycling schemes will be incorporated into the preferred servicing strategies for most new areas to:

- reduce future demands for potable water;
- enable customers to reduce potable water consumption to meet the BASIX criteria for a 40 per cent reduction in water consumption by new homes; and
- provide wastewater systems that maintain the quality of the Hawkesbury – Nepean River to meet DEC standards for effluent discharge.

Lead times for these major new projects now better reflect the upfront planning required to introduce such schemes.

Sydney Water has also reviewed assumptions related to alternative funding strategies for various parts of the growth program. It is believed that the assumptions are robust at this stage although new opportunities may arise over the Determination period. It is proposed that these be monitored and reported to the Tribunal as part of the Annual Information Return process under the Determination.

The net impact of proposed expenditure on growth is a 10.5 per cent reduction over the four years as outlined in Figure 2 below.

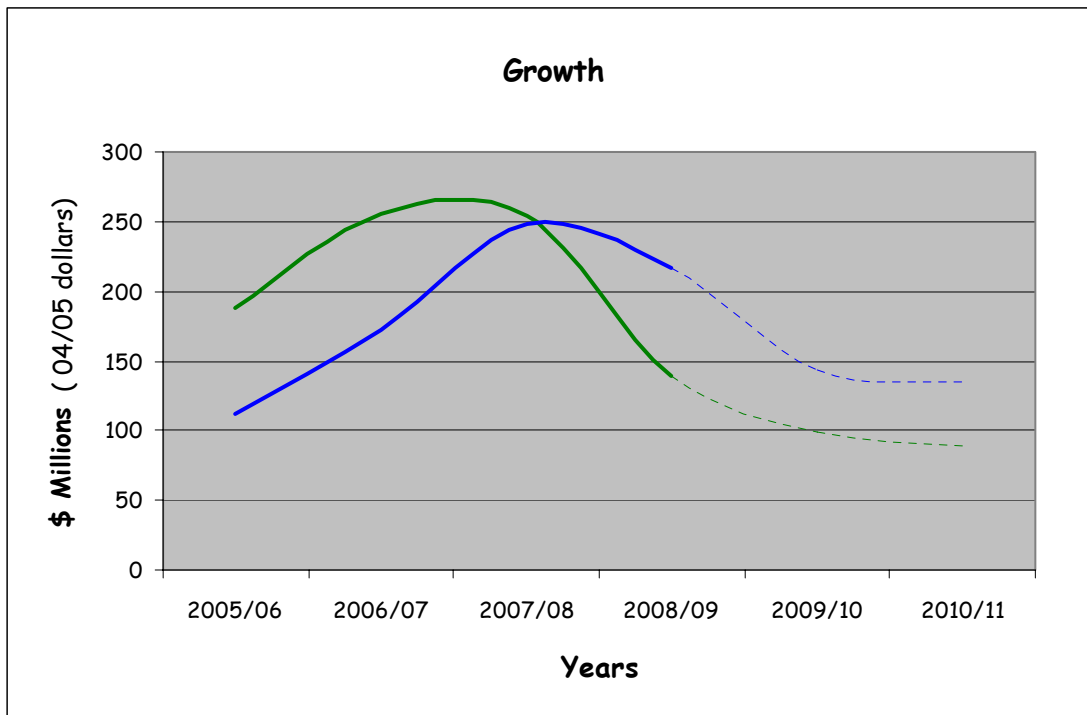


Figure 2: Revised growth expenditure forecast

## 2.4 NEW MANDATORY STANDARDS

As set out in Section 6.2.4 of the Main Submission, capital expenditure is required to deliver new mandatory standards that are set by Sydney Water’s regulators. Sydney Water’s Main Submission defined its proposed expenditure on sewer overflow abatement to meet its proposed Sewage Transport System licences currently being finalised with DEC as new mandatory standards.

DEC has indicated in its submission to the Tribunal for the price review that it does not consider that Sydney Water’s proposed sewer overflow abatement expenditure or its Illawarra Waste Water Strategy as being driven by new mandatory standards, given that the primary drivers for this expenditure have been in place for some time. Sydney Water accepts DEC’s comment that in general terms the primary drivers for sewer overflow abatement and the Illawarra Wastewater Strategy are not new. However, it notes that the specific [Revised capital expenditure](#)

expenditure requirements for the Determination period are based on the new investment that DEC will require under Sydney Water’s sewage transport system licences from 1 July 2005.

Sydney Water has classified its expenditure under the proposed Pollution Reduction Program requirements for sewage overflow abatement as new mandatory standards in line with the Tribunal’s “Regulatory Information Return – A Guideline”. This is intended to clarify for the Tribunal, which elements of Sydney Water’s expenditure will change over the Determination period and the appropriate source of funding for this expenditure. Sydney Water is happy to work with DEC and the Tribunal to ensure that its proposed expenditure on environmental outcomes is appropriately allocated under the Tribunal’s Guidelines.

In terms of overall expenditure on sewer overflow abatement, Sydney Water and DEC are now close to resolution on most aspects of DEC’s requirements. On the basis of progress on this issue, Sydney Water believes that no changes to the proposed program are required. Going forward, Sydney Water intends to work with DEC and the Government on the most cost effective means of reducing wet weather overflows into the future, particularly on how best to rehabilitate sewers as well as amplifying and increasing storage in the sewerage system.

The only minor changes to new mandatory standards in this submission, which primarily reflect revised cash flows for the Stormwater Environmental Improvement Program, with an overall increase of \$2 million in new mandatory standards compared to the Main Submission.

The net impact of proposed expenditure on new mandatory standards is a 0.9 per cent increase over the Determination period as outlined in Figure 3 below.

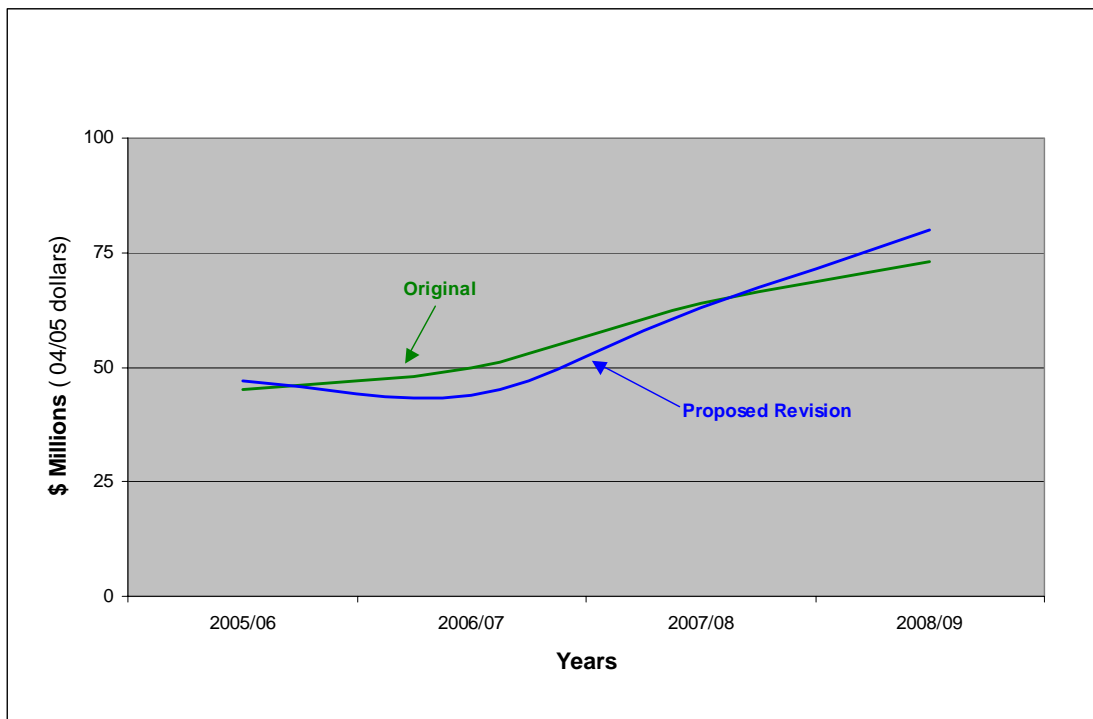


Figure 3: Revised forecast under new mandatory standards

## 2.5 BUSINESS EFFICIENCY

Improved estimates have also increased projected costs by \$8 million for the rationalisation of Sydney Water’s depots with most of this change scheduled for 2006/07, as illustrated in Figure 4 below. These changes predominantly reflect the rationalisation of Sydney Water’s depot sites and refurbishment of operational sites at West Ryde.

The net impact of proposed expenditure on business efficiency is a 19.7 per cent increase over the Determination period.

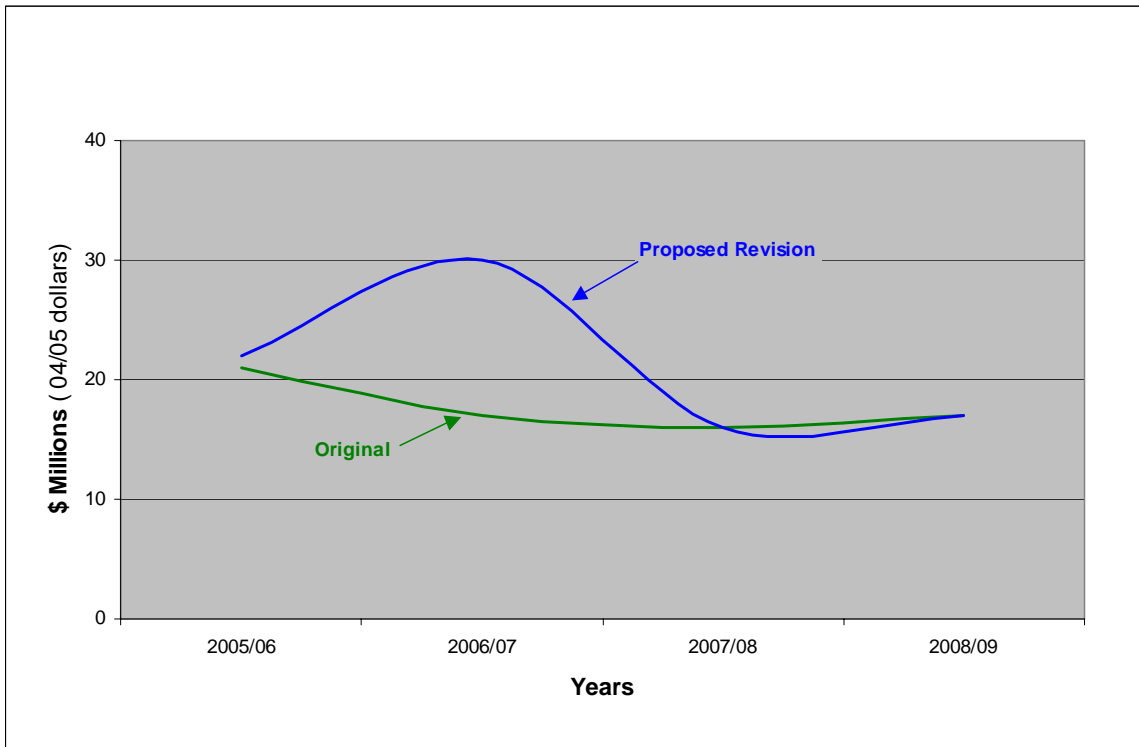


Figure 4: Revised business efficiency expenditure forecast

## 2.6 NSW GOVERNMENT PROGRAMS

Sydney Water’s internal review of its capital works program suggests that it is prudent to make minor adjustments to the project milestones and project estimates for the remainder of Stage One of the Government’s Priority Sewerage Program by moving more expenditure into later years of the program. However, Sydney Water will complete Stage One of the Priority Sewerage Program by 2009 as set out in the Main Submission.

This reflects the likely timing of outlays for Mulgoa/Wallacia, Brooklyn/Dangar Island and the Upper Blue Mountains schemes and reduced total costs for Mulgoa/Wallacia. In addition, an overall reduction of \$20 million has been made as a result of a data entry error. This has the effect of slightly reducing the total expenditure over the period compared to the estimates presented in the Main Submission, as illustrated by Figure 5 below.

The net impact of proposed expenditure on NSW Government Programs is a 13 per cent

reduction over the four years as outlined in Figure 5 below.

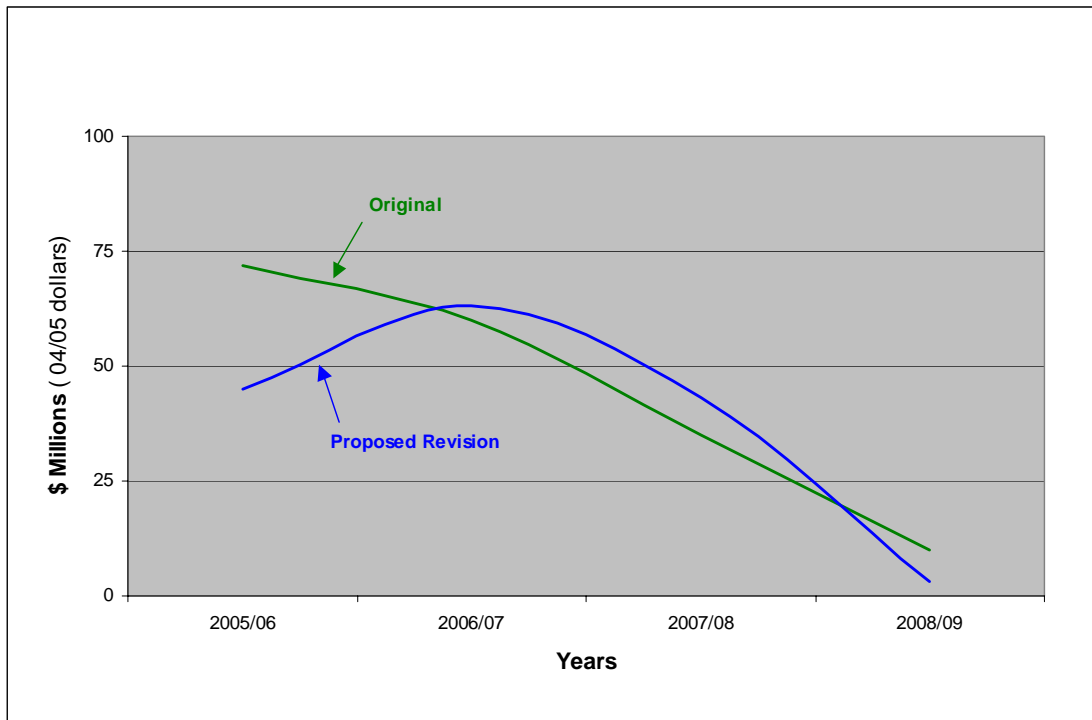


Figure 5: Revised expenditure forecast for Government programs

## 2.7 CAPITAL EXPENDITURE BY ACTIVITY

The re-phasing of growth-related works impacts on water, recycled water and wastewater expenditure over the four year Determination period. In addition, the revised wastewater figures reflect the additional downward adjustments over the four years in the areas of existing mandatory standards and the Government’s Priority Sewerage Program. Minor movements in Corporate expenditure primarily reflect updated information on property related expenditure items, including land acquisition and building fit outs.

Table 3: Sydney Water’s proposed capital expenditure 2005/06 to 2008/09 by activity

Expenditure (\$m – 2004/05 dollars)	2005/06	2006/07	2007/08	2008/09	Total
Water	158	170	175	150	653
Revised Water	109	153	170	176	608
Recycled Water	45	74	54	43	216
Revised Recycled Water	9	30	70	82	191
Wastewater	383	391	382	295	1,451
Revised Wastewater	328	357	357	283	1,325
Stormwater	13	6	6	6	32
Revised Stormwater	15	9	6	6	36
Corporate	53	50	33	33	168

Revised capital expenditure

Revised Corporate	49	55	49	31	184
<b>Total</b>	<b>652</b>	<b>691</b>	<b>650</b>	<b>527</b>	<b>2,520</b>
<b>Revised total</b>	<b>510</b>	<b>604</b>	<b>652</b>	<b>578</b>	<b>2,344</b>

The changes in recycled water expenditure are driven by the revised sequencing of actions to service new growth areas and reflect the recent land release announcement for Western Sydney and WS Atkins findings on the early step increases in Sydney Water's growth expenditure. These changes primarily result in less spending in the first half of the Determination period to focus on the planning and approvals of these schemes with higher expenditure on construction in the last years of the Determination period and beyond as new growth areas are developed.

### 3 Revised operating expenditure

Sydney Water's expenditure requirements are driven by its whole of life-cycle approach to managing its asset base, which ensures that expenditure is minimised over the life of the asset. As noted by WS Atkins, Sydney Water is also consistent with best practice in its use of an activity-based costing model to reconcile all costs to activities. WS Atkins also noted that Sydney Water is likely to meet the current Determination efficiency targets within two per cent by June 2005 and that it has identified a range of specific ongoing efficiency improvements in water, wastewater and corporate services and that Sydney Water's efficiency targets closely match those derived for Sydney Water by WS Atkins<sup>17</sup>. Sydney Water's efficiency target is to reduce controllable operating costs by 17 per cent (real) over the next four years.

Section 6.3 of the Main Submission presented Sydney Water's estimates at that time of its operating expenditure requirements over the Determination period. Since that time Sydney Water has updated its operating expenditure forecast to reflect:

- prudent contingency funding to promote water savings in the community if the current low rainfalls continue, which accounts for an additional \$6.4 million;
- the cost of ongoing water conservation advertising, which accounts for an additional \$2 million over the Determination period (\$0.3 million in 2005/06, \$1.6 million in 2006/07 and \$0.1 million over the remaining two years). This advertising campaign is included in Sydney Water's Demand Management Program;
- the proposed expenditure of \$8 million over the Determination period to fund a community education program to be coordinated under DEC's *It's A Living Thing* program, which will seek to promote community awareness and uptake of demand reduction and alternative water supply options;
- the proposed expenditure of \$8.3 million on demand management, which was set out in the Main Submission but was omitted from the cost data provided to the Tribunal under Sydney Water's SIR;
- the inclusion of \$6 million over the Determination period to cover the four per cent salary increase agreed to over next two years under Sydney Water's award, which was finalised in November 2004. This is 1.5 per cent higher than the salary increase set out in the Main Submission and the SIR;
- a reduction in employee entitlement costs, most notably a reduction in superannuation expenses, which is offset in part by an increase in employee provisions. The total effect is a reduced expenditure of \$19 million for Employee and Superannuation provisions for the Determination period. This reduction in operating costs is detailed below:
  - superannuation provisions have reduced by \$22 million over the Determination period, consistent with changes to assumptions on earnings and withdrawals from Sydney Water's various schemes since the Main Submission. The changes in assumptions have arisen since Sydney Water made the Main Submission and reflect the most up-to-date forecasts; and
  - employee provisions have increased by \$3.3 million over the Determination as a flow on effect of salary increases in 2004/05 reflected in changes to annual leave and long service leave. It is considered appropriate to now make these adjustments following the completion of award negotiations in mid November 2004; and
- a net \$5.9 million increase in operating expenditure as a result of changes to Sydney Water's capital expenditure program summarised below:
  - *Water* – Sydney Water's Main Submission allowed reduced annual operating costs due to capital investment of \$0.2 million by 2008/09. On the basis of the revised capital expenditure forecasts set out in this submission, this has been

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<sup>17</sup> *Ibid.* Footnote 2, p39.

reviewed and further annual reductions of \$0.2 million in total are now forecast by 2008/09. Changes in the forecast operating costs arising from capital expenditure are the result of minor shifts in the expected commissioning dates of some water network assets, including water mains, pumping stations and reservoirs;

- *Recycled water* – Sydney Water’s Main Submission allowed incremental operating costs due to capital investment in recycled water of \$7.8 million per annum by 2008/09. On the basis of the revised capital expenditure forecasts, this has been reviewed and increased by \$3.3 million per annum in total by 2008/09. The revision to the growth capital expenditure program has resulted in some of the recycled water schemes having lower than originally anticipated expenditures in the earlier years of the Determination period. However, this is offset by improved definition of the scope and associated costing of the operations and maintenance of these projects, in particular improved cost estimates for the recycled component of the Illawarra Wastewater Strategy. In addition, the ongoing operating costs associated with some additional schemes for which the capital is being funded by developers (including a scheme at St. Mary’s) have now been included in the costs; and
- *Wastewater* – Sydney Water’s Main Submission provided for incremental operating costs due to capital investment in wastewater of \$12.3 million per annum by 2008/09. On the basis of the revised capital expenditure forecasts, this has been reviewed and reduced by \$0.3 million in total by 2008/09. Changes in the forecast operating costs arising from capital expenditure are the result of minor shifts in the expected commissioning dates of growth-related assets, particularly in western and south-western Sydney as discussed in the previous section.

The following table summarises the changes in operating expenditure over the Determination period. The changes in operating expenditure are 0.5 per cent greater than the forecast set out in the Main Submission. This increase is driven primarily by Sydney Water’s demand management requirements, offset by reductions in employee entitlement costs.

These changes do not reflect any impacts arising from the WS Atkins review of Sydney Water’s operating expenditure efficiency and their recommendations.

Table 4: Revised operating expenditure for the determination period (\$04/05)

Expenditure (\$m – 2004/05 dollars)	2005/06	2006/07	2007/08	2008/09	Total
Original Submission	882.0	882.8	885.2	893.1	3,543.1
Supplementary Submission	894.8	889.2	882.6	894.8	3,561.4
Difference	+12.8	+6.4	-2.6	+1.7	+18.3
% Difference	+1.5	+0.7	-0.3	+0.2	+0.5

Sydney Water’s operating expenditure requirements are largely driven by its legislative obligations, which it seeks to meet by managing its assets over the long-term to deliver services at least-cost to the community. It is therefore appropriate that the expenditure presented in this Supplementary Submission should form the basis of the Tribunal’s Determination.

The following tables break down the changes in operating expenditure by activity.



Table 5: Revised water operating expenditure for the Determination period (\$04/05)

<b>Water(\$m – 2004/05 dollars)</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>Total</b>
Original Submission	444.5	452.9	461.7	472.4	1,831.5
Supplementary Submission	458.9	461.5	461.4	476.3	1,858.1
Difference	+14.4	+8.6	-0.3	+3.9	+26.6
% Difference	+3.2	+1.9	-0.1	+0.8	+1.5

As previously noted the increase in water operating costs are driven by contingency planning for promoting water conservation in light of current low rainfall conditions, clarification of proposed spending under the Demand Management Program, marginal labour cost increases due to recent award negotiations increases and reductions in superannuation costs.

Table 6: Revised wastewater operating expenditure for the Determination period (\$04/05)

<b>Waste Water(\$m – 2004/05 dollars)</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>Total</b>
Original Submission	285.2	286.2	285.6	286.6	1,143.6
Supplementary Submission	283.6	284.0	283.3	284.4	1,135.3
Difference	-1.6	-2.2	-2.3	-2.2	-8.3
% Difference	-0.6	-0.8	-0.8	-0.8	-0.7

Reductions in wastewater operating costs are primarily driven by reduced superannuation costs and reductions in capital expenditure offset by the marginal impact of award increases on normal labour costs.

Table 7: Revised stormwater operating expenditure for the Determination period (\$04/05)

<b>Stormwater(\$m - 2004/05 dollars)</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>Total</b>
Original Submission	7.5	7.8	7.8	7.8	30.9
Supplementary Submission	7.5	7.8	7.8	7.8	30.9
Difference	0.0	0.0	0.0	0.0	0.0
% Difference	0.0	0.0	0.0	0.0	0.0

There are no proposed changes to stormwater operating costs.

Table 8: Revised corporate operating expenditure for the Determination period (\$04/05)

<b>Corporate(\$m - 2004/05 dollars)</b>	<b>2005/06</b>	<b>2006/07</b>	<b>2007/08</b>	<b>2008/09</b>	<b>Total</b>
Original Submission	144.8	135.9	130.1	126.3	537.1
Supplementary Submission	144.8	135.9	130.1	126.3	537.1
Difference	0.0	0.0	0.0	0.0	0.0
% Difference	0.0	0.0	0.0	0.0	0.0

There are no proposed changes to corporate operating costs.

## 4 Revised demand forecast

Sydney Water's approach to reducing potable water demand and forecasting water sales for the Determination is set out in Section 7.1 of the Main Submission. As noted in the Main Submission, the demand assumptions are a key input to both revenue (through the relationship with expenditure assumptions) and prices.

Since the Government released the Metropolitan Water Plan in October 2004, Sydney Water has refined its expenditure and water savings forecasts for the programs it is to deliver under the Plan. Sydney Water has also taken the opportunity to incorporate the findings of MMA's review<sup>18</sup> for the Tribunal of Sydney Water's demand forecast, where Sydney Water considers their recommendations to be valid.

MMA's findings agreed that significant water savings would occur but not to the extent proposed by Sydney Water. Sydney Water has accepted MMA's findings except in relation to the proposed reduced savings from the BASIX program and Sydney Water's *Every Drop Counts* Business and Residential programs. Overall, Sydney Water's demand forecast is generally within two percent of MMA's annual forecast.

Sydney Water has written separately to the Tribunal outlining its specific comments on MMA's findings.

Sydney Water has also made minor changes to its demand forecast to include new information available on increasing take-up rates of rainwater tank rebates and public housing retrofits and the status of implementing BASIX in multi-unit developments. Sydney Water is happy to provide the Tribunal with more information on the adjustment of its Demand Management Program.

Sydney Water has also taken account of the ongoing low rainfall in Sydney's catchment since it lodged its Main Submission and the uncertainty surrounding the return of normal weather conditions before July 2005 when the Determination is to be finalised. Sydney Water has revised its demand forecast to take account of current conditions. However, it should be recognised that any prediction of future water storages is highly uncertain, being totally dependent on future weather conditions in the catchment and the supply area. Continuing dry weather patterns could cease in the next few months or they could extend the period of reduced demand out for the whole Determination period.

The table compares Sydney Water's revised forecast for total demand with its forecast set out in its Main Submission and MMA's total demand forecast. Projected water savings from MMA's review have reduced Sydney Water's demand forecast whereas Sydney Water's changes to its Demand Management Program have resulted in increased water savings.

The net result of these changes has been a 3.5 per cent reduction in demand over the Determination period.

Table 9: Sydney Water's revised demand forecast 2005/06 to 2008/09

Forecast Total Demand (gigalitres/year)	2005/06	2006/07	2007/08	2008/09
SWC revised forecast with restrictions	524	580	577	567
Original submission unrestricted	594	586	576	564
MMA report	595	594	590	582

<sup>18</sup> *ibid.* Footnote 3.

Difference (Revised minus Original)	-70	-6	+1	+3
% Difference	-11.8	-1.0	+0.2	+0.5

Sydney Water accepts that the final outcome on forecast demand conditions remains uncertain. It is happy to provided further updates to the Tribunal based on the Sydney Catchment Authority's advice on forecast storage levels to assist the Tribunal in setting prices from 1 July 2005 based on the most reasonable estimate of water sales over the Determination period.

## 5 Revenue and price implications of the supplementary submission

Sydney Water understands that the Tribunal will ultimately determine its revenue requirements, and the associated price increases, using the building block methodology. The previous Sections of this Submission presented revisions to Sydney Water's capital and operating expenditure requirements and likely demand outcomes that will inform the Tribunal's final Determination. The Tribunal should consider the financial consequences of these revisions for Sydney Water in making its final Determination.

### 5.1 CALCULATING SYDNEY WATER'S REVENUE ENTITLEMENT

Sydney Water has raised concerns with the Tribunal's Secretariat on proposed modifications to its building block methodology for estimating water agencies' revenue requirements for the Determination. Sydney Water's Main Submission applied the Tribunal's building block methodology as set out in Appendix Four of its 2003 Price Determination<sup>19</sup>. This methodology does not incorporate the Tribunal's revised approach to calculating the appropriate return on working capital and fixed assets each year, which it applied in the determination of NSW electricity distribution prices from 1 July 2004 and now intends to apply to the NSW water agencies<sup>20</sup>.

Sydney Water does not support the Tribunal's proposed modifications to calculating Sydney Water's revenue entitlement. In particular, Sydney Water does not accept the theoretical assumption that water agencies can earn a real rate of return equivalent to their nominal 'weighted average cost of capital' on income they collect throughout the financial year. Sydney Water could earn its 'weighted average cost of capital' by:

- reinvesting in its own business (i.e. capital expenditure). In practice Sydney Water's capital expenditure requirements are determined by the need to invest to meet its required service standards (which is scrutinised by the Tribunal). It is therefore not prudent to invest all earnings in the business;
- investing in a portfolio of assets so that the weighted average return of the portfolio is equivalent to Sydney Water's 'weighted average cost of capital'. However, there are statutory prohibitions that limit Sydney Water's ability to do this. For example Sydney Water's investment powers are governed by the provisions of the *Public Authorities (Financial Arrangements) Act 1987*, under which the Treasurer has conferred severely limited investment powers on Sydney Water. All of Sydney Water's approved investments are low-risk activities that have low achievable rates of return; and
- making continuous dividend payments and continuous payments to debt-holders. In practice payments to the providers of capital occur at defined points in the year, not continuously (as assumed by the theoretical methodology).

If the Tribunal's theoretical assumption of continuous compounding of interest is adopted it is highly *unlikely* that Sydney Water could earn its regulated rate of return. Therefore, Sydney Water urges the Tribunal to consider its approach to calculating revenue entitlements to ensure it will be able to achieve its allowed rate of return in practice.

### 5.2 SYDNEY WATER'S FINANCIAL INDICATORS

The discussion below presents key financial indicators for Sydney Water reflecting:

- the reduction in capital expenditure requirements presented in Section 2;
- the increase in operating expenditure requirements presented in Section 3;

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<sup>19</sup> *Ibid.* Footnote 9.

<sup>20</sup> *Ibid.* Footnote 10.

- the updated demand forecasts reflecting the likelihood of ongoing water restrictions discussed in Section 4; and, for illustrative purposes
- the Tribunal's revised methodology for calculating revenue discussed in Section 5.1.

For the purposes of this discussion a price path consistent with that presented in Sydney Water's Main Submission is assumed, which sought an increase of seven per cent in 2005/06, followed by an increase of 3.8 per cent for each of the remaining three years of the Determination period, equivalent to a 20 per cent real price increase over the Determination period.

The revenue impact of the increase in Sydney Water's operating expenditure requirements is more than offset by the associated reduction in capital expenditure requirements. However, possible ongoing low water sales result in a worsening of Sydney Water's financial position based on the prices presented in its Main Submission.

When comparing this submission to the Main Submission, Sydney Water's new borrowing requirement reduces by a further \$110 million to \$1.2 billion over the next four years, which represents an 8.9 per cent reduction when compared to the Main Submission.

There is also a temporary deterioration throughout the period in Sydney Water's Funds Flow Interest Cover (FFIC), which measures how many times Sydney Water's financing charges are covered by operating funds. By the end of the Determination period, Sydney Water's proposed price increase and the revised demand forecast reduces FFIC from 3.0 times in the Main Submission to 2.9 times available operating funds. If no account was taken of the revised demand, expenditure and revenue modelling changes, Sydney Water's FFIC would fall further as a result of the overall reduction in revenue.

Sydney Water urges the Tribunal to carefully consider the implications of the changes in the expenditure and demand assumptions for Sydney Water's financial viability, both over the Determination period and into the medium term.

### 5.3 DETERMINING PRICES

Sydney Water accepts that the Tribunal will determine final prices for its water and wastewater services to apply from 1 July 2005. Sydney Water urges the Tribunal to have regard to the following factors in its Determination:

- Sydney Water's revised expenditure forecasts, which represent Sydney Water's best estimates of the expenditure requirements associated with providing services to customers;
- Sydney Water's revised demand forecasts, which reflect the latest information on current rainfall, storage levels and demand outcomes; and
- the practical limitations on Sydney Water's ability to invest its income continuously over the year, and the implications for the likelihood of Sydney Water earning its regulated rate of return.

In its Main Submission Sydney Water emphasised the importance of ensuring that, for the sake of economic efficiency and fairness, all customers pay for the true costs of supplying services. However, Sydney Water understands that it may be appropriate to phase in price changes over time. Recognising the importance of sending strong demand management signals, Sydney Water reiterates its position that prices should be consistent with full cost recovery by the end of the Determination period.

# 6 Application of recycled water pricing principles

## 6.1 INTRODUCTION

Sydney Water considers water recycling as an important component in the suite of initiatives that can be implemented to mitigate demand pressure on Sydney's limited water supplies. Water recycling may also be used to provide solutions for wastewater management, by avoiding discharges to waterways.

In order to ensure the efficient utilisation of this valuable resource, prices for recycled water schemes need to be set correctly. Section 8.1 of Sydney Water's Main Submission outlined the following pricing principles for recycled water:

- recycled water prices must recover the efficient cost of service provision, including the cost of capital determined by the Tribunal, having regard to Sydney Water's avoided costs where appropriate; and
- the price of recycled water should be set on a scheme-by-scheme basis.

Sydney Water supports a light-handed approach to the regulation of recycled water prices to help encourage development of the service and ensure that prices are set to reflect the scheme objectives. This Section provides additional detail for the Tribunal on the way Sydney Water intends to apply these pricing principles. The application of these pricing principles to develop a scheme-specific price requires development and analysis on a scheme-by-scheme basis. Sydney Water proposes to report to the Tribunal on the implementation of these principles throughout the Determination period.

A critical element in establishing recycled water prices will be the potable water price determined by the Tribunal at each Determination. Sydney Water has recommended a water usage price of \$1.40 a kilolitre by 2008/09. The Government has also committed to establish a Demand Management Fund, which allows subsidies to be sought for water conservation projects including recycled water proposals. Projects will be selected based on some (yet to be determined) criteria. The Fund will be administered by the Department of Energy, Sustainability and Utilities. The Government is also investigating the funding and pricing arrangements to support the provision of up to 80 billion litres of recycled water to new growth areas in Western Sydney, which has an estimated investment cost of over \$500 million.

Establishing the right relationship between the price of potable water and the pricing and funding arrangements for recycled water services in Sydney will be critical if customers are to take up these alternative sources as least-cost measures to manage potable water use and maintain the health of Sydney's waterways. Sydney Water's principles will promote these outcomes by allowing prices to be set based on local conditions using current funding mechanisms and to appropriately reflect the avoided costs to the community of using recycled water as an alternative to potable water and/or a discharge to waterways.

## 6.2 FRAMEWORK

This section describes the framework Sydney Water intends to apply in setting recycled water prices. Section 6.2.1 outlines the pricing objectives that need to be considered prior to developing potential maximum and minimum prices for recycled water. Based on these objectives a set of pricing principles has been developed to establish recycled water prices for each scheme within this range.

### 6.2.1 Pricing objectives

This framework has been established based on the following pricing objectives:

- prices should appropriately recover the costs of schemes;
- prices should reflect avoided costs to ensure appropriate use;

- prices should support the implementation of water saving and effluent management initiatives;
- users should pay for service that they receive;
- prices should be fair and equitable; and
- price structures should be practical to implement.

### 6.2.2 Overview

The principles for determining recycled water prices will be implemented in several key steps:

- estimate the *gross incremental costs* associated with developing and operating a recycled water scheme. This represents the upper bound for recycled water prices from the scheme;
- identify and quantify any costs Sydney Water avoids as a result of the recycled water scheme, both in terms of reduced demands and reduced discharges to environmental waters. These *avoided costs* can then be subtracted from the estimate of scheme costs to find the net *incremental cost* of the scheme. This represents the lower bound for recycled water prices from the scheme;
- set prices for each scheme within the upper and lower bounds defined above with respect to:
  - customers' willingness to pay for recycled water;
  - the objectives of the scheme; and
  - estimate additional funding required from developer charges or the Demand Management Fund to recover the costs from the scheme.

### 6.2.3 Gross incremental costs

The costs associated with establishing and operating a recycled water scheme include:

- the initial capital expenditure required to design, construct and commission the scheme;
- the ongoing operating and maintenance and renewals expenditure required to operate the scheme. Depending on the arrangements for the scheme this may include an allocation of the costs of connecting to Sydney Water's wastewater network<sup>21</sup>; and
- an appropriate return on capital for the investment in the scheme.

The costs will vary between each scheme, depending on a range of factors including the location, size and nature of the scheme.

### 6.2.4 Avoided costs

In establishing efficient prices for recycled water, a system wide assessment of costs needs to be considered. This approach considers recycled water as an element of the integrated water and wastewater system and identifies the benefits to the water and wastewater business as a result of the recycled water project. Sydney Water identifies this as the avoided cost of the scheme.

Avoided costs refer to the reduced cost of providing potable water and wastewater services as a result of the recycled water scheme. Providing a recycled water service to a certain region may reduce the need to implement other water and wastewater projects in order to service these customers. For example:

- substitution of potable water - to the extent a recycled water project makes alternative supply side, system development/augmentation unnecessary, it will reduce capital and operating costs. This can be estimated as the expected reduction to potable water demand multiplied by the incremental cost of providing the next least costly option for

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<sup>21</sup> Estimation of the appropriate allocation of Sydney Water's joint and common costs is not straightforward.



potable water. This substitution may also reduce the required potable water infrastructure, i.e. pipes, treatment plants, etc.; and

- avoided wastewater system costs – the introduction of a recycled water scheme may make additional wastewater system and treatment processes/infrastructure augmentation unnecessary, reducing the operating and capital cost of wastewater. This can be estimated based on a system assessment of costs for each recycled water scheme, compared to the next least costly wastewater management option for that region.

To the extent a recycled water service to existing customers results in system-wide avoided costs, all water and wastewater customers will receive a benefit from the implementation of the recycled water project. To ensure this benefit is captured and recycled water customers are not subsidising the rest of the customer base, these avoided costs need to be appropriately reflected in the cost of the recycled water scheme.

### **6.2.5 Net costs**

The minimum amount Sydney Water needs to recover through its prices may be lower once avoided costs are deducted from the gross incremental costs. This represents the net incremental cost of the scheme. In the absence of any other influencing factors this would be the price set for recycled water customers.

### **6.2.6 Establishing efficient prices and tariff structures**

The preceding discussion on costs provides a quantifiable band within which recycled water prices can be set. The scope and flexibility to set prices within that band must take account of the following:

#### **Alternative markets and willingness to pay**

The existence of an alternative market provides a constraint on the maximum amount consumers are willing to pay for recycled water. For Sydney Water's recycled water services, this could be the retail price of potable water, though the price of bulk water or river water may be more relevant substitutes depending on the location of the recycled water scheme. This highlights the need to set prices on a scheme-by-scheme basis.

The actual willingness to pay under different schemes will be a function of the different perceptions about recycled water produced, perceived and actual suitability for use and any associated costs incurred.

Establishing the willingness to pay for recycled water is a fundamental step in setting recycled water prices, since it represents an upper ceiling on recycled water prices. Sydney Water will consider customers' willingness to pay on a scheme-by-scheme basis when establishing recycled water prices.

Currently Sydney Water has two key drivers for recycling water- water conservation and effective wastewater management. Given these two broad drivers, it would seem logical to minimise the price of recycled water. However in order to establish efficient recycled water prices, individual scheme objectives also need to be considered, as other factors inherent to the scheme may influence recycled water prices. These factors include

- the supply capacity of a particular scheme - this is linked to the overall considerations of scarcity mentioned above, but also takes into account system design/peak demand issues that can vary on a scheme-by-scheme basis; and
- the nature of the schemes recycled water market – that is, whether all the recycled water demand is substituting for potable water or whether some is meeting additional demands.

#### **Recycled water tariff structure**

Subsequent to establishing the efficient price band based on the proposed costs and influencing factors, a tariff structure needs to be developed. The price structure for each scheme should:

- signal to recycled customers the cost of the scheme;

- signal to recycled water customers the appropriate scarcity value of the product;
- ensure the appropriate level of revenue is recovered through price; and
- minimise adverse financial risk to Sydney Water.

An obviously simple tariff structure is a single per kilolitre recycled water price. Depending on individual scheme objectives, however, a two part fixed and usage charge tariff, seasonal or peak prices and/or stepped tariffs could be appropriate.

### **Developer charges**

In Greenfield sites where full cost recovery through periodic recycled water tariffs still yields a price higher than the price of alternative supplies (potable water in most instances), it may be appropriate to recover part of the recycled water costs through an upfront contribution from developers, in line with the Tribunal's developer charges methodology.

### **Balancing these objectives**

The weightings given to the considerations outlined above will differ greatly from scheme to scheme and these will be informed by the objectives of each scheme.

## **6.2.7 Summary**

In summary, Sydney Water will set recycled water prices as follows:

- costs of the recycled water scheme, which is the maximum cost Sydney Water can recover via recycled water prices. These costs will be calculated on a 'net present value' basis over the life of the scheme, at a discount rate reflecting the required rate of return on investment;
- the net cost of the recycled water scheme, that is, the costs of the scheme less any avoided costs to the water and wastewater system derived from the recycled water scheme. This net incremental cost reflects the minimum cost Sydney Water should recover via prices, with the avoided costs still being recovered from potable water and/or wastewater customers;
- recycled water prices will then be set within this price band based on:
  - customers' willingness to pay, which will be estimated on a scheme-by-scheme basis - the potable water price is likely to represent a ceiling as a substitute for recycled water;
  - the total water management objectives of the scheme; and
- additional funding could be sought, where appropriate, to cover any gap between the recycled water price and the incremental cost of the scheme - this funding could be provided through developer charges for new growth schemes or the contestable fund being established by Government in other cases.

Sydney Water recognises that these principles will need further development and refinement and anticipate developing recycled water pricing arrangements in close consultation with the Tribunal.