Essential Services Commission

Yarra Valley Water Expenditure Review

March 2009

Final Report

Halcrow Pacific Pty Ltd
and
Deloitte Touche Tohmatsu

Halcrow

Deloitte.

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Halcrow Pacific Pty Ltd

Deloitte Touche Tohmatsu

Halcrow Pacific Pty Ltd

Melbourne
Level 1, 542 Station Street, Box Hill, Melbourne, VIC 3128
Tel +61 3 9899 9777 Fax +61 3 9899 1214
www.halcrow.com

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Contents Amendment Record

This report has been issued and amended as follows:

Issue	Revision	Description	Date	Prepared by	Checked by	Authorised by
1	A	Draft Report	28/01/09	DF/PL	DF/PL	DF
1	0	Final Report	20/03/09	DF/PL	DS/PL	DF
1	2	Final Report – Public Version	15/04/09	DF	DF	DF

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Contents

1 Executive Summary

1.1 Background

The ESC is currently conducting a price review of the proposed prices to be charged by metropolitan Melbourne's bulk water supplier Melbourne Water and the three retail water businesses – Yarra Valley Water, City West Water and South East Water. The proposed prices relate to the period 1 July 2009 to 30 June 2013, referred to in this document as 'the next regulatory period'.

The metropolitan water businesses (the businesses) have submitted Water Plans to the ESC for the next regulatory period. The Water Plans include forecasts of operating expenditure, capital expenditure and demand, proposed service standards and prices. The ESC will review the Water Plans and intends to release a draft decision in April 2009, with a final decision issued in June 2009.

Halcrow and Deloitte have been engaged by the ESC to review the businesses' expenditure forecasts.

The ESC has requested that in our review of the capital expenditure forecasts we focus on the major projects that comprise a significant proportion of the total capital expenditure forecasts and provide advice on whether the projects meet certain key criteria.

In relation to operating expenditure we have been asked to provide advice on whether:

- the proposed trend in operating expenditure over the regulatory period is consistent with existing obligations and the service standards are reasonable
- the operating expenditure forecasts associated with meeting new obligations and/or meeting higher service levels reflect their likely expenditure requirements.

1.2 Overview of approach

In summary, the approach followed by the review team to this project was as follows:

- prior to commencing work, the review team met with the ESC to discuss the review and identify any areas of particular interest

- the review team reviewed in detail the businesses' Water Plans and prepared an issues paper for consideration by the ESC which set out specific areas of interest or concern. The issues paper was discussed with the ESC and used as a basis for developing and refining interview questions for the businesses
- two core review teams held initial discussions with the businesses, each over two days, as set out below. The discussions mainly comprised key personnel from the businesses presenting information regarding their expenditure forecasts, with the opportunity for the review team to ask questions and request further information where necessary
- a detailed review of the information collected prior to, during and subsequent to the interviews with the businesses was undertaken to assess, to the extent possible, the prudence and efficiency of the proposed capital and operating expenditure forecasts

As part of the review we also:

- sought further information from the businesses on a number of specific issues
- held further telephone and email discussions with the businesses
- had regard to documentation and information prepared by independent third parties, including by the ABS, Reserve Bank of Australia, ABARE and the US Energy Information Administration.

1.3 Strategies, drivers and service standards

We have briefly reviewed Yarra Valley Water's corporate strategies, drivers and service standards in order to set the context for our review. Our review covered:

- Corporate strategies / documents including Yarra Valley Water's Strategy, the Strategic Corporate Plan, the Operational Plan, Statement of Corporate Intent, Asset Management Plan, and Business and Customer Charters
- Business drivers, and
- Service standards.

Yarra Valley Water's corporate framework is made up of the following:

- Strategy
- Water Plan
- Corporate Plan
- Operational Plan
- Statement of Corporate Intent

Yarra Valley Water's Strategy underpins its actions through four key strategic outcomes – Customer, Environment, Efficiency and Culture. Each of these four outcomes has a series of specific objectives (fourteen in total) that define how the business intends to meet the strategic outcomes over the next regulatory period and then specific targets, including annual targets for each year of the regulatory period. Progress is meeting the specific targets is monitored through the Balanced Scorecard.

The Water Plan is based on the Strategy and identifies the specific actions and required expenditure to meet the targets and objectives set in the Strategy. The Water Plan is based on objective of maintaining average service levels and the current Customer Charter setting the baseline for the next regulatory period.

The Corporate Plan has a three year focus and is updated annually on a rolling basis. The Plan is a detailed discussion of the businesses' current operating environment, the strategies and drivers for the business, financial management issues and concerns, the businesses' current financial position, proposed capital expenditure for the period covered by the Corporate Plan and the current risk profile for the business.

The Operational Plan is an annual document that details the specific actions required for each year of the regulatory period. The actions identified in the Operational Plan flow into Group, Divisional and ultimately individual performance plans to complete the hierarchy.

The Statement of Corporate Intent is Yarra Valley Water's public document that defines the operating environment, key business policies, and key performance indicators for the business.

Our review of strategies, drivers, and service standards has identified that Yarra Valley Water has a comprehensive corporate and strategic framework. This gives us confidence that the process for developing the strategies, objectives and actions which underpin the proposed capital and operating expenditure is likely to deliver, if appropriately implemented, an expenditure program that is appropriately linked to the needs of the business and its relevant obligations.

1.4 Generic Issues

The ESC's metropolitan Melbourne price review is taking place against a background of unprecedented change and uncertainty. Southern and eastern Australia has experienced sharply reduced rainfall and inflows to storages and in response the water industry has forecast massive capital investment over the next five years and beyond. In addition, global economic conditions have significantly deteriorated over the past six to nine months and a marked slowdown in the Australian economy has occurred.

These issues are important considerations for this expenditure review. At the time the Water Plans were prepared, real labour costs and the prices of key inputs to water and wastewater infrastructure, such as oil and steel, had been rising consistently for a number of years. Therefore, the businesses' Water Plans incorporated, to varying degrees, sustained increases in the cost of these inputs.

Since July 2008, however, oil and steel prices have fallen sharply, construction activity has declined and unemployment has now started to rise. Adjustments to the businesses' forecasts have therefore been required to reflect these changed circumstances, which have lowered capital and operating expenditure forecasts.

Another key background issue is the recent review of the structure of the metropolitan water sector by the Victorian Competition and Efficiency Commission (VCEC). In its investigation of the Melbourne water sector, VCEC recommended, and the Victorian Government supported, that annual savings in the order of $8-$10 million from 'shared services' be incorporated in the businesses' Statement of Obligations.

The water businesses are in the process of assessing the possible sources of these savings, and a number of areas have been identified for further consideration. In aggregate the businesses have not proposed that savings of this extent will be achieved until 2012/13. We do not consider this is consistent with the government's support of VCEC's recommendations and accordingly we have suggested that shared services savings are greater than have been forecast.

1.5 *Operating Expenditure*

Table 1.1 following summarises our recommendations for changes to Yarra Valley Water's operating expenditure. Reasons for the adjustments are set out later in this document.

Table 1.1 Overview of recommended changes to operating expenditure ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Total Water Plan operating expenditure	272.63	310.69	347.8	400.21	462.55	536.7
Recommended adjustments						
VCEC savings		0.00	-1.00	-1.00	-0.50	0.00
Labour costs		1.09	2.55	2.81	3.06	2.03
Electricity		0.00	0.00	0.00	-1.00	-1.12
Waste management		0.00	-0.06	-0.06	-0.14	-0.14
Chemicals		0.00	-0.12	-0.12	-0.12	-0.15
Billing and Collection		-0.47	-0.91	-1.39	-1.64	-1.79
Water conservation		2.19	2.09	0.00	-0.23	-0.46
Information Technology		-2.17	-2.41	-2.36	-2.36	-2.36
Land Tax		-0.16	-0.16	-0.17	-0.19	-0.20
GSL adjustment		0.07	0.14	0.13	0.12	0.11
Operations and maintenance		-0.37	-0.27	-0.46	-0.67	-0.87
Minor items		-0.55	-0.88	-1.95	-1.04	-0.75
Re-allocation from prescribed to not prescribed		0.00	-1.55	-1.60	-1.65	-1.71
Total adjustments		**-0.38**	**-2.58**	**-6.18**	**-6.35**	**-7.40**
Total recommended operating expenditure		**310.31**	**345.22**	**394.03**	**456.20**	**529.30**

1.6 *Capital Expenditure*

Table 1.2 following summarises our recommendations for changes to Yarra Valley Water's capital expenditure, as detailed in the Water Plan. Reasons for the adjustments are set out later in this document.

Table 1.2 Overview of recommended changes to capital expenditure ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	TOTALS
Total Water Plan capital expenditure	**164.40**	**234.45**	**276.94**	**230.98**	**215.23**	**189.42**	**912.57**
Recommended adjustments							
Contributed assets	-	18.89	19.65	6.74	4.81	15.70	**46.90**
Water Plan adjustment		**253.34**	**296.59**	**237.72**	**220.04**	**205.12**	**959.47**
Northern Sewerage Project		-14.00	-2.03	20.80	-0.09	0.07	**18.75**
Epping / Craigieburn – Stage 1 & Stage 2 (Section 1)	-	-2.87	-12.82	-26.06	0.00	34.43	**-4.45**
Epping / Craigieburn – Stage 2 (Sections 2 & 3)	-	-1.83	3.80	-7.13	-1.81	6.88	**1.74**
Water Reticulation Renewals Program	-	-0.93	0.00	0.00	0.00	0.00	**0.00**
Property Branch Sewer Renewals Program	-	-1.87	0.00	0.00	0.00	0.00	**0.00**
High Risk Sewers Planned Rehabilitation	-	0.48	0.00	0.00	0.00	0.00	**0.00**
New building	-	0.00	-4.10	-7.10	-3.40	0.00	**-14.60**
Wonga Park Sewer Backlog		0.20	0.00	0.00	0.00	0.00	**0.00**
Customer Water Meter Replacement	-	-0.17	0.00	0.00	0.00	0.00	**0.00**
Other water deferrals		-12.68	-24.63	18.56	4.18	-1.18	**-3.07**
Other sewer deferrals		-44.41	9.38	9.18	6.23	-11.95	**12.84**
Total adjustments	**-**	**-78.08**	**-30.40**	**8.25**	**5.11**	**28.25**	**11.21**
Total recommended capital expenditure		**175.26**	**266.19**	**245.97**	**225.15**	**233.37**	**970.68**

Note: Figures may not add due to rounding

Yarra Valley Water has provided updated capital forecasts for a number of projects which has resulted in adjustments to the capital expenditure originally proposed in Water Plan. We have identified these adjustments in the relevant sections of section 7.4. Yarra Valley Water has also provided details of deferrals to projects from 2008/09 into the next regulatory period, that is 2009/10 to 2012/13 and deferrals from the next regulatory period into the future regulatory period commencing 1 July 2013. Details of these deferrals are discussed in section 7.1.2 and are summarised in Table 7.3.

The updated capital forecasts and proposed deferrals to capital expenditure discussed above are incorporated into Yarra Valley Water's February 2009 updated capital forecast shown in Table 1.2 above. This figure is included for comparison purposes only.

2 Introduction

2.1 Background

2.1.1 *The 2009 metropolitan water price review*

Under the provisions of the *Water Industry Regulatory Order* (WIRO), the Essential Services Commission (ESC) has the power to regulate prices for prescribed services, including water and wastewater services. According to the WIRO, the ESC must be satisfied that expenditure forecasts 'reflect the efficient delivery of the proposed outcomes contained in the Water Plan and take into account a planning horizon that extends beyond the term of the Water Plan.'

The ESC is currently conducting a price review of the proposed prices to be charged by metropolitan Melbourne's bulk water supplier Melbourne Water and the three retail businesses – City West Water, South East Water and Yarra Valley Water. The proposed prices relate to the period 1 July 2009 to 30 June 2013, referred to in this document as 'the next regulatory period'.

The metropolitan water businesses (the businesses) have submitted Water Plans to the ESC for the next regulatory period. The Water Plans include forecasts of operating expenditure, capital expenditure, demand, proposed service standards and prices. The ESC will review the Water Plans and intends to release a draft decision in April 2009, with a final decision released in June 2009.

2.2 Scope of work

2.2.1 *Nature of advice*

Under the existing legislative framework the ESC is required to be satisfied that the businesses' expenditure forecasts:

- reflect efficient expenditure
- are consistent with delivering the required service levels, outputs and obligations over the regulatory period, and
- take into account a planning horizon that extends beyond the regulatory period.

Halcrow and Deloitte have been engaged by the ESC to review the businesses' expenditure forecasts. The ESC has requested that, in our review of the capital expenditure forecasts, we focus on the major projects that comprise a significant proportion of the total capital expenditure forecasts and provide advice on whether the projects meet the following criteria:

- **appropriate in relation to key drivers and obligations** – with evidence provided of such drivers and in accordance with the Statement of Obligations that sets out responsibilities of each of the businesses.
- **robust (with adequate supporting analysis and systems)** – as demonstrated by reports which clearly enunciate the problems faced by the business, and sets out the analysis undertaken of the options to resolve that problem and identifies the preferred solution. The preferred solution should also fall within an overall strategy by the business.
- **deliverable over the regulatory period** – the key activities comprising the delivery of the project from planning to construction need to have been identified and thought through and there should be evidence that the projects can be practically delivered within the proposed timeframe.
- **reasonable cost estimate** – the cost estimate should be well supported either by a schedule of quantities using typical rates currently being experienced in the industry, or compare favourably with other similar projects, or preferably both of the above.

In relation to operating expenditure we have been asked to provide advice on whether:

- **the proposed trend in operating expenditure over the regulatory period is consistent with existing obligations and the service standards are reasonable** – having regard to expected productivity improvements, trends in input prices and the impact of growth on operating expenditure needs and any other relevant factors
- **the operating expenditure forecasts associated with meeting new obligations and/or meeting higher service levels reflect their likely expenditure requirements** – having regard to any benchmarking or other quantitative techniques considered appropriate.

In providing advice on the above, we have been asked to have regard to:

- any guidance issued by the ESC with respect to how it will assess the businesses' proposed expenditure forecasts

- the information set out in the businesses' Water Plans (and accompanying information templates) and any explanations that the businesses provide with respect to the basis used to derive the forecasts including any assumptions used
- any readily available data and information that the consultants have available to assess expenditure forecasts
- the experience of the consultants' proposed review team in preparing and assessing the veracity of forecasts as well as costing projects in the water sector.

2.2.2 *Issues outside the scope of this project*

We have been asked by the ESC not to consider the following matters:

- toll payments (operating expenditure) by Melbourne Water associated with the proposed desalination plant
- waterways and drainage expenditure by Melbourne Water – except to the extent that the allocation of corporate costs will have implications for water and wastewater expenditure
- whether expenditure is categorised as 'operating' or 'capital'
- the structure of bulk water prices.

2.2.3 *Other work*

The ESC has received advice from another consultant regarding the veracity of the businesses' demand forecasts. While we are broadly aware of this work it was not received in sufficient time to be incorporated in our report.

2.3 *Structure of the report*

This report is focussed on the expenditure forecasts submitted by Yarra Valley Water. It is structured as follows:

- chapter 3 outlines the methodology adopted by us in reviewing Yarra Valley Water's expenditure forecasts
- chapter 4 discussed Yarra Valley Water's strategies, cost drivers and service standards
- chapter 5 discusses some issues common to both Yarra Valley Water's operating and capital expenditure forecasts
- chapter 6 outlines Yarra Valley Water's operating expenditure forecasts, and presents our analysis and conclusions/recommendations
- chapter 7 outlines Yarra Valley Water's capital expenditure forecasts, and presents our analysis and conclusions/recommendations.

3 Overview of approach

3.1 Process undertaken

The process adopted for this expenditure review is set out below.

3.1.1 *Inception Meeting with the ESC*

Prior to commencing work, the review team met with the ESC to discuss the review and identify any areas of particular interest for the ESC. At the inception meeting, the ESC provided the review team with a paper that outlined some of the key issues to be considered. These included:

- the ability of the businesses to deliver their capital programs within the regulatory period
- analysing each of the businesses' top ten capital projects
- the cost escalation factors used in the businesses' forecasts
- using 2007/08 as the 'base year' for expenditure
- paying particular attention to:
  - energy costs (including electricity and green energy)
  - any purchases of greenhouse gas offsets
  - productivity improvements
  - conservation programs and how they relate to the supply-demand balance
  - the cost of managing bulk entitlements

3.1.2 *Preparation of issues paper*

The next stage of the expenditure review process was the preparation of an issues paper for consideration by the ESC. The review team reviewed in detail the businesses' Water Plans and set out specific areas of interest or concern. The issues paper was discussed with the ESC and used as a basis for refining discussion questions for the businesses.

3.1.3 *Initial interviews with the businesses*

In the initial stages of the project, two core review teams held discussions with the businesses, each over two days, as detailed in Table 3.1.

Table 3.1 Initial meetings with businesses

Date	Business
4 and 5 December	South East Water
8 and 9 December	Yarra Valley Water
9 and 10 December	Melbourne Water
10 and 11 December	City West Water

Prior to the interviews, the businesses received a paper prepared by the review team highlighting the key areas for discussion. The interviews mainly comprised key personnel from the businesses presenting information regarding their expenditure forecasts, with the opportunity for the review team to ask questions and request further information where necessary.

3.1.4 Review of proposed expenditure

A detailed review of the information collected prior to, during and subsequent to the interviews with the businesses was undertaken to assess, to the extent possible, the prudence and efficiency of the proposed capital and operating expenditure forecasts. The assessment included a review of the following:

- the planning process through which capital projects are identified and implemented
- the ability to deliver the proposed capital expenditure program
- the cost escalation factors adopted
- the proposed level of capital expenditure
- the main components of forecast operating expenditure.

As part of the review we also:

- sought further information from the businesses on a number of specific issues
- held further telephone and email discussions with the businesses
- spoke to external parties (including DSE) where required
- had regard to documentation and information prepared by independent third parties, including by the ABS, Reserve Bank of Australia, ABARE, and the US Energy Information Administration.

3.1.5 *Preparation of draft report*

The process and findings of the review undertaken by the review team were documented in a draft report, together with recommendations in respect to the prudence and efficiency of the proposed expenditure. This draft report was discussed with the ESC and distributed to the businesses for comment.

3.1.6 *Further interviews with businesses*

Following the submission of the draft report to the ESC and the receipt of comments from the businesses, we held further interviews with the businesses, as detailed in Table 3.2 below, to discuss their proposals.

Table 3.2 Further meetings with businesses

Date	Business
23 February	South East Water
12 March	Yarra Valley Water
12 March	City West Water
16 March	South East Water

3.1.7 *Preparation of final report*

In preparing this final report, we have had regard to:

- comments provided on the draft report by the ESC and the businesses
- further information provided by the businesses subsequent to their comments on the draft report.

In general terms our review has been more extensive and covered more areas than those discussed in this report. That is, where we have reviewed areas of expenditure and are satisfied at this time, based on the information provided to us, with the projections incorporated in the forecasts, we have generally not commented on that area in this report.

4 Strategies, drivers and service standards

4.1 *Operations, strategy and assets*

4.1.1 *Overview*

We have briefly reviewed Yarra Valley Water's corporate strategies, drivers and service standards in order to set the context for our review. Our review covered:

- Corporate strategies / documents including Yarra Valley Water's Strategy, the Strategic Corporate Plan, the Operational Plan, Statement of Corporate Intent, Asset Management Plan, and Business and Customer Charters
- Business drivers, and
- Service standards.

4.1.2 *Corporate framework*

Yarra Valley Water's corporate framework is made up of the following:

- Strategy
- Water Plan
- Corporate Plan
- Operational Plan
- Statement of Corporate Intent

Yarra Valley Water's Strategy underpins everything that the business does through four key strategic outcomes – Customer, Environment, Efficiency and Culture. Each of these four outcomes has a series of specific objectives (fourteen in total) that define how the business intends to meet the strategic outcomes over the next regulatory period and then specific targets, including annual targets for each year of the regulatory period. Progress in meeting the specific targets is monitored through the Balanced Scorecard.

The Water Plan is based on the Strategy and identifies the specific actions and required expenditure to meet the targets and objectives set in the Strategy. The current Water Plan is based on the objective of maintaining average service levels and that the current Customer Charter sets the baseline for the next regulatory period.

The Corporate Plan has a three year focus and is updated annually on a rolling basis. The Plan is a detailed discussion of the business' current operating environment, the strategies and drivers for the business, financial management issues and concerns, the businesses' current financial position, proposed capital expenditure for the period covered by the Corporate Plan and the current risk profile for the business.

The Operational Plan is an annual document that details the specific actions required for each year of the regulatory period. The actions identified in the Operational Plan flow into Group, Divisional and ultimately individual performance plans to complete the hierarchy.

The Statement of Corporate Intent is Yarra Valley Water's public document that defines the operating environment, key business policies, and key performance indicators for the business.

4.1.3 *Asset management framework*

Yarra Valley Water has four main program drivers for asset management planning:

- Regulatory and legislative requirements – minimal new requirements in this regulatory period (none specifically identified in the ESC template)
- Servicing new development – just in time servicing of new development with a particular focus on the northern suburbs
- Compliance with Government policy – Sewer Backlog Program, Yarra River Action Plan, State Environmental Protection Policy, and
- Maintaining and improving service levels – renewals programs objective to maintain current / average service levels.

In addition, there are a number of organisational drivers, some common to the main program drivers, that provide inputs to asset management planning, including:

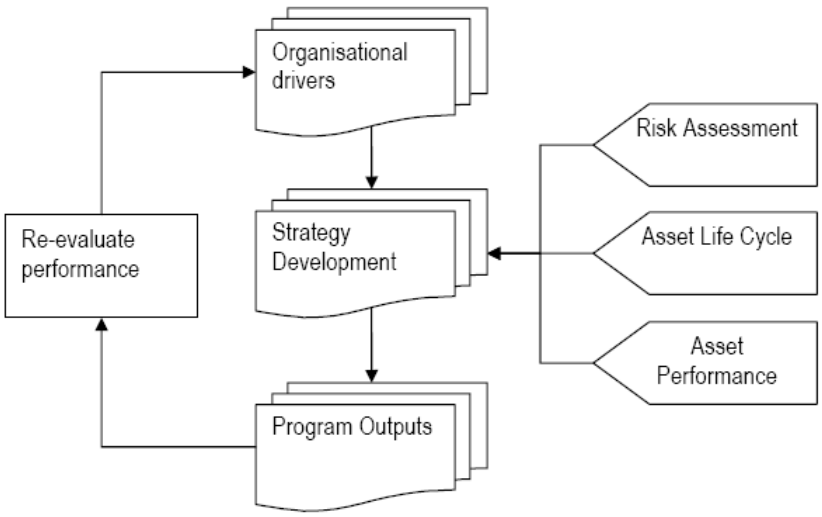
- Yarra Valley Water's Strategy;
- Yarra Valley Water's Balanced Scorecard;
- Regulation and legislation;
- Government policy;
- Financial constraints;
- Customer willingness to pay; and
- Levels of Service.

Yarra Valley Water indicated that "*the supply of water and sewerage services is a capital intensive undertaking. Given this basic economic characteristic, achievement of the goal to maximise the value of services provided to customers in an environmentally sustainable manner requires us to apply rigorous and efficient capital budgeting and asset management processes.*" Further, Yarra Valley Water's stated approach to asset management recognises the need to:

- *ensure that investment decision analysis leads to the formulation of investment plans that are efficient. In broad terms, this requires* [Yarra Valley Water] *to select the combination of capital projects and recurrent operations and maintenance programs that minimise total life cycle costs;*
- *execute the investment decisions and maintenance programs as efficiently as possible. In broad terms, this requires* [Yarra Valley Water] *to procure the most cost-effective capital works and maintenance services that are available*; and to
- *facilitate the efficient maintenance of the long-term operating capability of* [the] *infrastructure (asset management function). In broad terms, the aim of the asset management function is to ensure the planning, creation and maintenance of infrastructure that meets the needs of customers at minimum total life-cycle cost, and within the carrying capacity of supporting ecosystems.*[1]

Yarra Valley Water's asset management framework links organisational goals to the final outputs and is presented in Figure 4.1 below.

Figure 4.1 Yarra Valley Water Asset Management Framework[2]



[1] "YVW Response to Draft Expenditure Review_Water Plan 2009-13", February 2009.

[2] Ibid

Yarra Valley Water participates in a number of benchmarking reviews, with the predominant review being the asset management benchmarking undertaken by the Water Services Association of Australia (WSAA). In 2004, Yarra Valley Water participated in such a review covering corporate policy and business planning, all aspects of asset planning and management and business support systems. The results of the review indicated that Yarra Valley Water achieved the highest score in five out of the seven functional areas assessed when compared to the group of twenty-three water agencies from Australia, New Zealand and the United States.

4.2 Capital planning

Yarra Valley Water's capital planning processes are based around meeting the needs of their customers and the development industry, while managing risk and complying with regulatory obligations. Inherent in all of this is the objective of balancing the needs of the various stakeholders while efficiently delivering least cost community solutions.

Yarra Valley Water's capital program is based around three main service areas – water, sewer and business efficiency, however within these three areas, Yarra Valley Water defines a number of sub programs / drivers. The various sub programs / drivers are presented in Table 4.1 following.

Table 4.1 Yarra Valley Water's Capital Planning Sub Programs / Drivers[3]

Service Area/ Program	Sub Program	Summary of Driver
WATER SUPPLY	Water Growth Works	This program is driven by the need to provide new infrastructure to meet the needs of the development industry. Infrastructure delivery is coordinated with the development industry and proceeds only when new development is firmly committed to rather than being provided in advance of development.
	Water renewals (includes reticulation renewals, distribution mains renewals and main to meter renewals)	This program targets the renewal or replacement of assets at the end of their service life. In the case of reticulation and main to meter renewals it is based on the need to achieve define service levels for customer interruptions to the water supply. In the case of distribution main renewals is driven by the risks of large main failures that in the event of failure can impact on tens of thousands of customer and do major damage to community infrastructure such as roads and tram and rail tracks.
	Water reliability	This program focuses on water supply tanks, pumping stations, valves and other mechanical and electrical equipment on the network. The program targets the achievement of defined service levels to customers.
	Pressure management	This program is driven by the need to reduce leakage from the water system, but has an added benefit of increasing asset life.
	Water Meter replacements	This program provides for the replacement of meters at the end of their useful life. It is driven by the obligation to accurately meter water supplied to customers
SEWERAGE	Sewer Backlog	This program is driven by the need to improve the environment and comply with the State Government commitments and State Environmental Protection Policy.
	Sewer Growth works	Refer Water growth works

[3] "YVW Response to Draft Expenditure Review_Water Plan 2009-13", February 2009.

Service Area/ Program	Sub Program	Summary of Driver
	Sewer Renewals (includes reticulation renewals, house branch sewer renewals and Main and Branch Sewer renewals)	This program targets the renewal or replacement of assets at the end of their service life. In the case of reticulation and house connection branch sewer it is based on the need to achieve define service levels for customer interruptions to the sewer service. Main and Branch sewer renewals is driven by the risk of failure of large sewers that spill large volumes of sewerage into the environment causing significant environmental impact.
	Sewer System reliability	This program focuses on sewer system pumping stations and other mechanical and electrical equipment on the network. The program targets the achievement of defined service levels to customers.
	Improved System Capacity	This program is driven by the need to upgrade parts of the sewerage system where it has inadequate capacity to meet defined service levels and/or the requirements of the State Environment Protection Policy
	Northern Sewer and Epping Craigieburn Sewer Projects	These are major state projects with total cost in excess of $300M that are driven by the combined need to provide additional capacity for growth and compliance with the 1 in 5 year spill standard contained in State Environment Protection Policy (Waters of Victoria).
	Treatment Plants and recycling	This programs focuses on ensuring the Yarra Valley Water Treatment Plants meet regulatory requirements set by the EPA.
Business Efficiency	IT System Improvement	This program focuses on improvements to IT systems to improve efficiency and functionality to meet business needs. Improve customer service.
	IT Infrastructure	This program is driven by the need to replace upgrade and provide additional capacity for the businesses IT infrastructure. Improve customer service.
	Facilities	The program is driven by the need to maintain appropriate office accommodation for the business to efficiently operate. Improve customer service.

4.3 Operational planning

The foundation for Yarra Valley Water's operational planning is the Yarra Valley Water Strategy with the five year outlook presented in the Water Plan and a detailed annual outlook presented in the Operational Plan. Operational planning is undertaken using one of two methods, both of which are designed to identify opportunities for efficiencies and the optimal allocation of financial resources to achieve the desired outcomes.

The first method used is the zero based budgeting approach. Yarra Valley Water indicated that "*the purpose of this approach is to review and justify the controllable operating expenditure budget by demonstrating cost composition and strategic focus to undertake the activities required to achieve Yarra Valley Water's Strategy Outcomes.*" The advantages of this methodology include that:

- it is a 'blank slate' approach which shifts the emphasis to the justification of why a particular program / project should receive any funding;
- it links spending directly to business outcomes, ensuring budgets are supported and justified and that there is an understanding of why costs are incurred; and
- previous inefficiencies or redundant programs from historical budgets are not unintentionally carried over into future expenditure.

The second method used is the SPOT or Spend Optimisation Tool. Yarra Valley Water's explanation of this tool is that it is a "*prioritisation process that provides an opportunity for managers to seek further funding where their baseline budget has changed due to new regulatory requirements or obligations, growth, risk mitigation and research and development activities.*" All requests for funding assessed using this tool are reviewed and prioritised by the Executive team and must provide detailed justification including a cost benefit analysis and a direct linkage to Yarra Valley Water's Strategy. We would expect that clear and direct linkages to new obligations or regulatory requirements are also presented in the justification for funding.

4.4 Service standards

4.4.1 *Historical service standards*

In the 2005 price determination, the ESC set service standards for each metropolitan and regional water business. The ESC approved 21 service standards for Yarra Valley Water, ranging from water interruptions to sewer blockages, complaints to EWOV and minimum flow rates. Yarra Valley Water further proposed (and the ESC approved) 20 additional service standards.

Yarra Valley Water met or exceeded most of their target service standards, on average, over the first regulatory period. The 11 targets that Yarra Valley Water did not meet (within a five per cent threshold) are outlined in Table 4.2.

Table 4.2 Service standards not met (2005/06 to 2007/08)

Service standard	Target	Actual	Variance
Unplanned water supply interruptions (per 100km)	60	63	5% higher
Unaccounted for water (%)	10.9	13.6	25% higher
Sewerage blockages (per 100km)	43	45	5% higher
Number of customers receiving four sewerage blockages in a year	3	15	400% higher
Telephone calls answered within 30 seconds (%)	94.7	87.9	7% lower
Water quality complaints (per 1,000 customers)	4.4	5.6	27% higher
Number of customers with five or more blockages in five years (total over regulatory period)	389	787	102% higher
Account enquiries answered within 15 seconds (%)	90.0	79.2	12% lower
Volume of customers with estimated bills (%)	0.5	0.6	24% higher
Trade waste application turn around within four days (%)	90.0	63.7	29% lower
Reducing waste to landfill from Mitcham head office (tonnes over regulatory period)	430	337	22% lower

The service standards that Yarra Valley Water failed to achieve did not have a common 'theme' such as blockages or interruptions. It should be noted that six of the 11 service standards not met were additional standards proposed by Yarra Valley Water and not approved for other retailers. Yarra Valley Water's Water Plan (pp.90-100) includes an explanation for each service standard it failed to achieve.

Yarra Valley Water performed significantly better[4] on several indicators compared to target in the current regulatory period. These are shown in Table 4.3:

[4] Which we have defined as beating target by 20 per cent or more

Table 4.3 Service standards 20 per cent or more better than target (2005/06 to 2007/08)

Service standard	Target	Actual	Variance
Average time taken to attend burst and leaks (priority 2, minutes)	55	38	31% lower
Average time taken to attend bursts and leaks (priority 3, minutes)	600	357	41% lower
Average planned customer minutes off water supply	22	12	45% lower
Average planned frequency of water supply interruptions	0.11	0.08	27% lower
Average time to attend sewer spills and blockages (minutes)	65	51	22% lower
Average time to rectify a sewer blockage (minutes)	310	249	20% lower
Water recycled from Yarra Valley Water treatment plants (%)	12	27	128% higher
Greenhouse gas emissions over regulatory period (net tonnes)	36,000	25,167	30% lower

4.4.2 *Proposed service standards*

Yarra Valley Water has proposed service standard targets that mirror its average performance over the three years to 2007/08. Yarra Valley Water is therefore proposing to maintain its existing level of customer service rather than improve it over the next regulatory period.

5 Generic issues

5.1 *Overview*

This section discusses the review team's approach to analysing certain issues which are generic across each of the businesses and in several cases apply to both operating and capital expenditure. These include:

- general cost escalation factors
- labour cost increases
- productivity and other cost savings
- gainshare / painshare arrangements and other outcomes of alliance contracts.

5.1.1 *Proposed price rises*

A substantial augmentation program has been proposed, and indeed is underway, in order to increase the amount of water available to Melbourne customers. The augmentation projects, when combined with ongoing expenditure proposed by the businesses, will result in a dramatic increase in expenditure over the forthcoming regulatory period. The four metropolitan businesses' Water Plan forecasts were for total expenditure of $10.8 billion ($7.6 billion excluding bulk water charges) over the next regulatory period 2009/10 to 2012/13, including $4.3 billion of capital expenditure. Across the industry this represents a 64 per cent annual real increase in operating expenditure (including projected toll payments for the desalination plant) and a 35 per cent increase in capital expenditure over base year (2007/08) expenditure.

This increase in expenditure, when combined with reduced water use, results in a substantial increase in proposed water prices. Under the businesses' proposals, prices will increase by almost 100 per cent in real terms over the next regulatory period. Given this increase in its issues paper the ESC has noted that, in addition to its usual examination of whether proposed expenditures is efficient and prudent, it will also consider:[5]

- whether the proposed profile of capital expenditure should be smoothed to occur more evenly over the period, instead of being concentrated at the beginning of the period

[5] ESC 2009, Melbourne Metropolitan Water Review 2008/09 Water Plans – Issues Paper, December, pp 6-7.

- whether some expenditure could be deferred into the following regulatory period
- whether businesses have the capacity to deliver the proposed large capital program during the short timeframe proposed in their Water Plans
- stakeholders views on the trade-offs between reducing the proposed price increases and meeting environmental, drinking water quality and service reliability objectives.

It is not the role of this consultancy to directly address the issue of proposed price increases. However, given the ESC's comments in reviewing the businesses' proposals, we have been cognisant of the magnitude of the price rises proposed and therefore the importance of ensuring that discretionary expenditure is minimised or reduced entirely.

5.1.2 The current economic climate

This review is taking place at a time of significant economic uncertainty. For the vast majority of the current regulatory period, the Australian and Victorian economies have been in a phase of strong growth. Economic conditions have been characterised by:

- a falling unemployment rate, which was around 4.25 per cent for the majority of 2008
- strong growth in real wages, particularly in professions impacted by the 'mining boom'. This includes engineering and other technical skills engaged in infrastructure industries such as the water sector
- a relatively strong Australian dollar which almost reached parity with the US dollar in mid 2008
- increasing commodity prices, particularly in late 2007 and early 2008
- increasing oil prices, which had flow-on effects to oil by-products such as certain chemicals and plastics products
- steadily increasing domestic inflation and nominal interest rates.

We note that the ESC's decision in relation to gas distribution prices, released in March 2008, took the view that continuing real increase in wages in the utilities industries were likely, and that non-labour cost inputs were also likely to rise.

However, there has been a significant change in the global and domestic economic outlook since mid 2008. Widely attributed to failures in the US banking system, short to medium term economic conditions will be significantly different to those in previous years. Economic conditions are likely to reflect:

- reducing employment and increasing unemployment
- substantially lower private sector capital investment, particularly in resource industries; although this may be partly offset by higher levels of Federal and State Government investment in capital infrastructure
- a weaker Australian dollar against most currencies
- substantially lower commodity prices, including oil prices
- lower interest rates and inflation
- relatively volatile property and housing prices, with significant falls in some areas.

In our draft report we noted that although economic growth had slowed, some economic indicators had not yet moved. However, since our draft report more recent data shows that:

- full time employment is falling sharply. The Australian unemployment rate has now risen to 5.2%, with Victoria's unemployment rate well above the average at 5.6%
- gross domestic product fell 0.5% in the December quarter – the first quarterly decline since 2000/01.

This data was released after the most recent economic forecasts released by the Australian Government[6] and the RBA[7]. The Government's forecast of key economic parameters is presented in Table 5.1 below.

The Reserve Bank's forecasts are similar to the Government's. In its forecast of upcoming economic conditions the Reserve Bank noted that:

- business investment is expected to fall throughout most of the forecast period, with falls in commodity prices and resource company share prices resulting in a substantial scaling-back of mining-related investment. Non-residential building is also forecast to contract significantly
- wage growth is likely to slow in line with conditions in the labour market.

[6] Commonwealth of Australia, *Updated economic and fiscal outlook*, February 2009

[7] Reserve Bank of Australia, *Statement on Monetary Policy*, 6 February 2009

Table 5.1 Key Economic Parameters[8]

Parameter (year average percentage change)	2008/09	2009/10	2010/11	2011/12
Real GDP	1.0	0.75	3.0	3.0
Employment	1.0	-0.75	1.25	1.25
Wage Price Index	4.0	3.5	4.0	4.0
CPI	2.0	2.0	2.5	2.5
Nominal GDP	6.75	0.0	5.25	5.25

The Government has forecast that unemployment will reach seven per cent by June 2010.

It is also worth noting that a clear feature of the current economic downturn has been that forecasts of economic activity have consistently proved overly optimistic. This includes both forecasts by government as well as independent commentators.

Noting the above, two things are clear. Firstly, economic conditions experienced in the current regulatory period will not provide a good guide to economic conditions over the future regulatory period. Secondly, forecasts of certain input prices which were prepared in early to mid 2008 are unlikely to reflect current market conditions. In particular, impacts of the downturn are likely to include (compared to a 2007/08) baseline:

- equal or lower cost of materials such as steel, plastics-based pipes and chemicals
- equal or lower unit capital expenditure costs due to less competition from other large infrastructure projects, not only in the mining sector but in construction more generally
- equal or lower fuel costs
- reduced pressure on wages.

Finally, we encourage the ESC to closely monitor the changing economic circumstances and take them into account in its decisions.

[8] Commonwealth of Australia, *Updated economic and fiscal outlook*, February 2009, p. 7.

5.2 General cost escalation factors

5.2.1 General cost escalation factors

Aggregate operating and capital expenditure forecasts are a function of both the level of activity required in the forecast period, plus the forecast change in price of the individual cost inputs.

Individual price changes will differ across cost items. While some cost items will generally follow price levels in the economy (as measured by the CPI) others will be above or below CPI. Depending on the nature of the industry in question, cost escalation for a large proportion of input costs may differ markedly from the CPI.

Yarra Valley Water was the only business not to propose a real increase in either capital expenditure or operating expenditure (excluding labour, electricity and fuel), which are discussed in more detail in Chapter 6). Over the course of the expenditure review, Yarra Valley Water provided a number of operating and capital expenditure schedules and where activity levels on various expenditure items were neither increasing or decreasing, the forecasts showed a zero real increase in expenditure amounts, which supports the advice received from Yarra Valley Water that all input prices were only forecast to increase by CPI.

5.2.2 Capital and operating cost escalation

Discussion

The businesses engaged economic consultants Econtech (now KPMG Econtech) to prepare a report that provided forecast increases for capital project prices. This report, finalised in July 2008, included forecasts for changes in water distribution, reticulation, sewerage transfer and treatment costs, as well as information on other economic indicators such as CPI, average earnings, etc. Each of the businesses has applied the data contained in the Econtech report to their forecasts in different ways.

It is clear that many of the assumptions and forecasts contained in the Econtech report are not appropriate. This is not to question the veracity, integrity or methodology underlying the Econtech report. It simply reflects the fact that the sudden (and generally unanticipated) change in economic conditions since the report was prepared means that it has been overtaken by events and is not longer relevant.

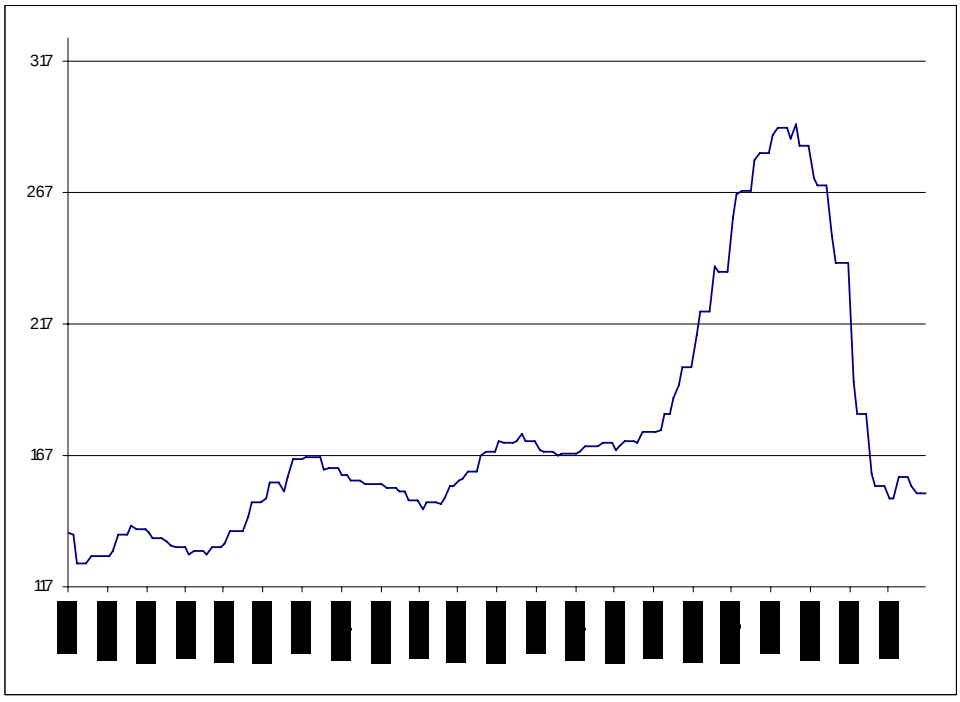
For example, a key assumption inherent in Econtech's report is a "sustained increase" in oil and steel prices, which are key inputs to water infrastructure. When the report was finalised in July 2008, this was a reasonable assumption, as both commodities had indeed experienced sustained increases for some time.

Since the Econtech report was finalised, however, there has been significant turmoil in global equity, credit and commodity markets. Section 6 of this report details the recent (i.e. post-July 2008) falls in global crude oil prices, which decreased by 53 per cent in real AUD terms between July 2008 and March 2009. Further, futures contracts for delivery in oil up to June 2013 are settling for around US$50-65, which is far less than AUD oil prices in July 2008.

Gauging the price of steel is a more difficult matter, because there are multiple steel products and markets throughout the world. One firm that does calculate a weighed steel price index is the CRU Group, which publishes its CRUspi index comprised of six carbon steel indices, together with indices for stainless steel and metallics. Figure 5.1 shows how the CRUspi global steel index has moved since July 2005 and shows a clear decline towards the present day.

Since July 2008, the CRUspi index has declined by 48 per cent. This mirrors the widely recognised Reuters/Jeffries CRB (global commodities) index, which has dropped 49 per cent since early July 2008.

Figure 5.1 CRUspi global steel prices index



Recommendations

It is clear that the Econtech assumption of a sustained increase in commodity prices, including steel and oil has not eventuated and indeed most commodities have experienced sharp falls in prices. Given steel and oil are key inputs to water infrastructure, it is worth considering if Yarra Valley Water's real capital escalation factor of zero is also too high and should be reduced.

Determining what the revised capital escalation factor should be is a difficult exercise. Even back in 2005 when there was clear evidence of increases in construction costs, in its 2005 Determination for Sydney Water, IPART commented that:

> *Having carefully considered the evidence available to it, the Tribunal believes that while there may be short-term variations in the rate of growth in the CPI and Total Non-dwelling Construction costs, both of these price indices are likely to follow general movements in the Australian economy as a whole. With this in mind the Tribunal does not consider that the recent higher rate of growth in Total Non-dwelling Construction costs represents a long-term trend which requires special consideration in the 2005 determination period.*

This was reiterated in IPART's 2008 draft Sydney Water price decision (confirmed in the final decision), where IPART concluded:

> *… there are significant uncertainties in the global equity markets and credit markets that could have a negative impact on construction activity. Construction activity (and costs) could also be dampened by anticipated further increases in domestic interest rates, which would increase borrowing costs for businesses.*
>
> *On balance, IPART has decided against Sydney Water's proposal to inflate the future capital expenditure by the construction cost index and, instead, proposes that this expenditure be escalated by the CPI.*

If a separate construction index is to be used then the issue of how that index should be determined will need consideration. The mix of input costs facing the Victorian metropolitan water businesses will be unique and an accurate index would need to consider such things as prices and parameters and weightings.

Anecdotal evidence available to us suggests that the economic downturn has resulted in greater competition amongst contract maintenance and engineering/construction businesses in the water sector due to the downturn in the mining industry.

This is supported by evidence from the RBA which noted in its February 2009 *Statement on Monetary Policy* that in the December 2008 quarter that there was "a significant fall in construction costs in Victoria". However we also note that this significant fall may be offset to some degree in future by the Australian Government's stimulus package which will increase capital spending in the residential and education sectors in particular.

Given current economic circumstances and the difficulties in forecasting a new construction index, we therefore feel it is reasonable to adopt the CPI rather than a separate construction cost index as the basis for forward projections. While the CPI and a construction index will diverge over the short term, over the medium to longer term we believe the CPI provides the best measure of changes in input costs.

We have adopted the assumption that on average water sector construction costs will increase at the CPI – i.e. that there will be no real increase in prices. While there is also arguably a strong case that increases in construction costs will be lower than CPI, a CPI-based increase reduces the risk that a below-CPI increase would provide to businesses.

Since this is the approach that has been undertaken by Yarra Valley Water, no general adjustment needs to be made to Yarra Valley Water's forecast operating and capital expenditure on this basis.

5.3 Labour cost increases

5.3.1 Benchmark increases

Initial business proposals

In their Water Plans, each of the businesses has proposed increases above CPI for labour costs for the next regulatory period, with forecasts ranging from 1 per cent to 2.5 per cent per year. The businesses' escalations in labour costs were determined via a number of means, including on the basis of:

- consistency with their respective EBAs and assumptions about inflation
- independent forecasts of wage increases.

2008 price review for regional water businesses

In its price review which was concluded in June 2008, the ESC allowed for a 1.25 per cent real annual increase in labour costs over the regulatory period. This rate was applied as a benchmark across all businesses.

Mercer and Econtech labour cost forecasts

One of the retailers indicated that it had relied on information provided by recognised human resource consultants Mercer Human Resource Consulting when determining its proposed real annual increase in labour costs.

In a 2006 report Mercer established forecasts for base salary and employment costs for a range of 'job families' extending to 2008/09, with base salary increases for construction and engineering professions increasing by 6.0 per cent and 6.3 per cent (in nominal terms) respectively in 2008/09.[9]

In February 2008 Mercer commissioned Econtech to model the size and structure of the Australian workplace in 2012 in terms of workforce, employment and occupations for its report – *Workplace 2012: What does it mean for employers?*

In its November update to its Workplace 2012 series, Mercer commissioned Econtech to provide updates of the demand for, and supply of, labour to account for events from February to October 2008.

Key points behind Econtech's labour cost growth forecasts include:

- unemployment was forecast to increase from a low of 4.0 per cent in February 2008 to over 5.3 per cent in 2009
- the shortage of skilled workers and wage pressure from a tight labour market are key drivers of labour costs
- wages growth in the utilities sector is assumed to be higher than for all Australian industries, due to the higher concentration of skilled workers
- inflation was forecast to range from 2.5 per cent in 2009/10 to 3.0 per cent in 2012/13.

One of the key drivers of labour costs identified in the Econtech report was the pressure on wages (and wages of skilled labour in particular) arising from a tight labour market driven by the commodities boom.

Heavy investment by the mining industry was projected to continue, placing further pressure on demand for skilled workers in the engineering and construction sectors. The utilities industry, being forced to compete with the mining and construction industries for skilled labour would also be subject to the skills shortage and upward pressure on wages.

[9] Mercer Human Resource Consulting (2006), *Quarterly Salary Review: Analysis of trends*, September 2006

Draft Report recommendations

In our draft report, we concluded that recent developments including falling commodities prices, strongly reducing private sector investment and a strong likelihood of rising unemployment were likely to reduce pressure on wages for the next regulatory period in all industries, including the water industry.

While strong investment is likely to continue in the water sector, in the context of recent developments and current wage price data, the draft report proposed a real increase in wages of one per cent above CPI per annum to be a reasonable assumption for the next regulatory period noting that we would review this assumption in light of the RBA's February 2009 Statement on Monetary Policy.

Revised business proposals

Following the release of our draft report, the businesses provided revised proposals based on advice received from the Victorian Government in relation to the wage price index and CPI. The advice provided by the Victorian Government was based the forecasts and projections of key economic parameters used by the Commonwealth in its *Updated Economic and Fiscal Outlook* (UEFO), and is set out in Table 5.2 below.

The businesses are now forecasting real wage increases of 1.5 per cent per annum. They have noted this is consistent with their expectations that their enterprise bargaining agreements (EBA) will be negotiated to allow for a four per cent per annum nominal increase in wages over the period.

Table 5.2 Commonwealth forecasts and projections of key economic parameters

Parameter (year average percentage change)	2008/09	2009/10	2010/11	2011/12
Real GDP	1.0	0.75	3.0	3.0
Employment	1.0	-0.75	1.25	1.25
Wage Price Index	4.0	3.5	4.0	4.0
CPI	2.0	2.0	2.5	2.5
Nominal GDP	6.75	0.0	5.25	5.25

Note: all parameters are year average percentage changes, except CPI which is through the year growth to June quarter. Source: Commonwealth of Australia, *Updated Economic and Fiscal Outlook*, February 2009

Key points in the Commonwealth's domestic economy forecasts include:

- more substantial falls in commodity prices are now expected than originally forecast in the *Mid-Year Economic and Fiscal Outlook 2008-09* (MYEFO)

- tight credit conditions leading to reduced investment, with a number of projects being cancelled or deferred
- unemployment is expected to increase to 5.5 per cent by June 2009 and reach 7 per cent by June 2010.[10]

It should also be noted that these figures also take into account the Commonwealth's fiscal stimulus package for 2008/09 and 2009/10.

Recent developments

Similarly to the UEFO, the RBA's 6 February 2009 Statement on Monetary Policy observed weakening domestic economic conditions characterised by reductions in capital expenditure forecasts (particularly in the mining sector) as a result of the global financial crisis and tighter credit conditions.

While CPI was 3.7 per cent to the year ended December 2008, it is expected to decline in coming quarters, with medium term expectations consistent with the Commonwealth's forecasts.

In relation to labour, the RBA noted that while employment grew by 0.2 per cent in the December quarter (1.6 per cent higher over the year to December), full-time employment was estimated to have fallen. Further softening of labour market conditions is expected in early 2009 with labour surveys pointing to weaker demand for labour and higher unemployment in the next year.[11]

Labour figures released by the Australian Bureau of Statistics (ABS) on 12 March 2009 were worse than generally expected, with national unemployment at 5.2 per cent and Victorian unemployment at 5.6 per cent.[12]

As noted above, the Commonwealth has estimated that unemployment will rise to 7 per cent by June 2010. However, recent predictions of Victorian unemployment by economists surveyed by *The Age* range from 7 per cent, to as high as 7-10 per cent (National Institute of Economic and Industry Research) and 12 per cent (Institute of Public Affairs).[13]

[10] Commonwealth of Australia (2009), *Updated Economic and Fiscal Outlook – February 2009*

[11] Reserve Bank of Australia (2009), *Statement on Monetary Policy*, 6 February 2009

[12] Australian Bureau of Statistics, 6202.0 - Labour Force, Australia, Feb 2009

[13] Bachelard, M. (2009), "How will Victoria's economy fare?", *The Age*, 15 March 2009

Conclusion and recommendation

In our view, the 1.5 per cent real growth in wages may be slightly on the high side given current economic conditions. Nevertheless, we consider that the guidance provided by the Victorian Government (on the basis of the Commonwealth's UEFO) provides the clearest indicator for the businesses in relation to forecasts of real wages growth. Therefore we have adopted a real increase in wages of 1.5 per cent above CPI per annum for the regulatory period.[14]

While we believe that this provides a reasonable basis for real wage increases over the period, taking into account a projected recovery in the domestic economy from 2010/11, we note that on the basis of the current figures for inflation it may overstate real wage increases in the short term, which are likely to be close to zero. However, it may understate increases in the later years of the period if the Government's predictions of a four per cent wage price growth come to fruition.

5.3.2 Training and graduate programs

Some of the businesses have sought additional funding above baseline levels in relation to training and graduate programs.

While these programs may indeed be appropriate, we have taken the view that they need to be undertaken in the context of a businesses' overall workforce management program and should not be the source of price rises for customers. For example, we would expect a higher graduate intake to be offset, for example, by a lower level of recruitment of employment of more experienced workers. Increased training will generally be reflected in higher productivity levels. Therefore, in determining revised forecasts of labour costs while we have had regard to businesses' overall employment levels (as reflected in FTE numbers) we have not provided for additional labour costs associated with such training.

[14] We note that on 27 March 2009 the Treasurer of Victoria issued a press release stating that Victorian public sector wages growth would be limited to 2.5 per cent, a reduction from its existing policy of 3.25 per cent. It is not clear to us whether this restriction is applicable to wages for the water businesses' employees: while we have assumed this is not the case, the announcement adds weight to the view that a 1.5 per cent real wage increase is likely to represent the upper end of a reasonable range of increases.

5.4 Productivity Savings

5.4.1 The VCEC report

Background

In August 2007 the Victorian Government directed the Victorian Competition and Efficiency Commission (VCEC) to undertake a review of the Melbourne metropolitan retail water sector, with a view to recommending areas for improvement. In February 2008, VCEC released its final report *Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector.*

VCEC's final report included 21 recommendations for the government to consider, associated with structural and non-structural reform, future contestability (i.e. competition) and governance arrangements. The government supported all but one of VCEC's recommendations, which related to setting a three year regulatory period. One key recommendation receiving government support related to the potential costs savings of 'shared services'. Specifically, VCEC's recommendation 4.1 called for:

> *"… (the development) and (implementation of) shared services and bulk procurement of materials. The Government should amend the water businesses' Statement of Obligations to establish a target level of future annual savings to be achieved of at least $8 to $10 million per annum and ensure that this is incorporated in their corporate plans."*[15]

VCEC recommended that the annual savings be achieved within 6-12 months after receiving government support. VCEC identified areas such as IT systems, coordinated procurement of capital projects and procurement of materials for minor capital works.

In its response to the VCEC recommendations, the Victorian Government supported recommendation 4.1 and indicated its intention to amend each business's Statement of Obligations (SoO) to "examine opportunities for shared services and co-ordinated procurement of common inputs, and implement such arrangements where it is assessed that they will yield material net savings in business costs."[16]

[15] Victorian Competition and Efficiency Commission (2008), Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector, February 2008, p.xxxi

[16] Victorian Government response to the VCEC inquiry, July 2008 p.7

It is unclear whether this is an explicit endorsement of VCEC's recommended cost savings or timeline, however it is understood from discussions with the businesses and the ESC that the government intends for the businesses to achieve productivity savings recommended by VCEC. On balance, therefore, we have assumed that businesses will achieve the mid-point of VCEC's recommended savings, that is, $9 million per annum.

Proposed savings

Table 5.3 below outlines the savings that each business has included in its Water Plan, less any implementation costs associated with VCEC recommendations.

Table 5.3 Proposed net shared services and bulk procurement savings ($m, 2008/09)

Business	2008/09	2009/10	2010/11	2011/12	2012/13
Yarra Valley Water	0.00	0.00	0.50	1.50	2.00
City West Water	1.00	1.50	1.50	1.50	1.50
South East Water	0.00	0.00	0.50	1.50	2.00
Melbourne Water	0.00	0.00	0.00	2.75	2.75
Total	**1.00**	**1.50**	**2.50**	**7.25**	**8.25**

As can be seen from Table 5.3, most businesses are not expecting to realise the full savings until the final year of the next regulatory period and Melbourne Water does not believe it can reach its target. Further, Yarra Valley Water and South East Water have included costs associated with the identification of the cost savings from shared services. These costs amount to $0.5 million for each business in each of the first two years, and relate to costs such as becoming a statutory authority, moving from single contracts into joint contracts and consulting fees.

Melbourne Water has advised that it will incur costs, however is not seeking to pass these through to customers. City West Water is also not claiming any costs associated with identifying the savings to be implemented. These two businesses, therefore, have forecast relatively higher net productivity savings than Yarra Valley Water (and South East Water). City West Water and Melbourne Water's approach also appears to be the most sensible to take – the savings resulting from shared services should be thought of as being net of any costs required to identify them.

Analysis of businesses' proposals

Although the government has not been specific on when it expects businesses to begin realising savings from shared services, it did support VCEC's recommendation 4.1 which called for the savings to be implemented within six to twelve months after the government endorsed the savings. It could therefore be argued that this is the timeframe the government has in mind. Yarra Valley Water, in its response to our draft report, rejected this line of reasoning, arguing that the government had only committed to examining opportunities for savings and had never endorsed VCEC's recommended $8-$10 million range.

All businesses believed the cost savings would be difficult, if not impossible to achieve in the next regulatory period. It should be noted, however, that VCEC's independent view was that the savings could be achieved and this was a better outcome than merging the businesses into one. The Victorian Government, as shareholder, supported this recommendation.

In addition to the quantum of savings, Melbourne Water also argued that its share of the expected savings should be relatively lower than the retailers. Melbourne Water argues that, given its size, it is already achieving large economies of scale and the retailers are better placed to gain advantages in this area.

We are of the view that Melbourne Water's arguments have some merit. It is likely that Melbourne Water is already achieving significant economies of scale and for some of the areas identified by VCEC, such as customer information and billing systems, the benefits would likely accrue mainly to the retailers. On the other hand, even if Melbourne Water was expected to match the retailers' savings ($4.5 million assuming $9 million in total), this would represent 1.6 per cent of its business as usual operating expenditure over the period. The remaining $4.5 million, shared amongst the retailers, would equate to 1.4 per cent of their collective controllable operating expenditure.

Irrespective of the allocation, all businesses are of the view that there is little to be gained in the area of IT systems such as billing and collections nor in the adoption of consolidated call centres. Further, documentation provided by the retailers shows a number of contracts not expiring until later in the regulatory period, reducing the ability to move to 'bulk procurement' options.

Progress to date

To date, the businesses have not realised any productivity savings from shared services. The businesses have convened a working group to identify areas that could be the target of shared services or procured on a 'bulk' basis. The working group first met in November 2008 and has established a number of sub-groups to further detail the potential savings identified by the working group.

As part of its submission on our draft expenditure report, Yarra Valley Water provided an extract of the progress of the working group as at 11 February 2009. The working group was assessing opportunities across a range of services, including:

- electricity
- banking
- fuel
- vehicles
- IT and telecommunications
- insurance
- over the counter collections
- laboratory services
- water tanker management
- meter purchasing
- meter reading
- media services.

Yarra Valley Water's submission noted that the preliminary views of the working group suggested that its original proposed VCEC savings were reasonable. Yarra Valley Water further stated that imposing any further savings may breach the requirements of the *Water Industry Regulatory Order* (WIRO), which requires businesses to recover efficient expenditure.

Recommendations

We have reviewed the additional information provided by Yarra Valley Water (and the other businesses), however it has not provided any robust argument for revisiting the savings included in our draft report. VCEC has identified the opportunity to realise efficiencies above and beyond what the businesses have been achieving, so we see no conflict with the WIRO principles, which only allow the recovery of efficient expenditure.

We reiterate that the government has supported VCEC recommendation 4.1, which explicitly outlined both the quantum and timing of savings. We recognise that no savings have been so far realised, and in light of this fact and the businesses' response to our draft report we deem it reasonable to expect that the businesses aim to achieve the VCEC cost savings, in full, by the third year of the next regulatory period (2011/12). Given work is currently underway to identify savings, it is recommended that 50 per cent of the identified savings will be achieved in 2009/10, with 75 per cent in 2010/11.

It is once again worth noting that the VCEC cost savings have been endorsed by the businesses' shareholder – the Victorian Government. Should the ESC approve revenue requirements that include these cost reductions, and the businesses are then unable to meet them, it is ultimately to the shareholder's detriment. It is unlikely that the adoption of the cost savings targets would result in the businesses facing financial distress and the nature of the savings are a one-off saving imposed on the businesses (i.e. savings are not cumulative).

In terms of allocating the $9 million per annum between the businesses, on balance, we are of the view that 60 per cent, or $5.4 million, should be allocated to the retailers, with the remaining 40 per cent ($3.6 million) allocated to Melbourne Water. This approach partly reflects Melbourne Water's position that many of the benefits of shared services are likely to accrue to the retailers, whilst recognising that, in terms of Melbourne Water's total operating expenditure, such a saving is not a significant burden.

In its response to the draft report Melbourne Water indicated that a 40 per cent allocation was too high and that it should contribute no more than 25 per cent to any target because:

- a number of the areas identified for saving are not applicable to Melbourne Water or are in areas where Melbourne Water has minimal expenditure
- Melbourne Water already has the lowest unit costs in many areas due to its scale and mature procurement processes.

We agree that Melbourne Water probably has less opportunity to make savings than the retailers. A 40 per cent allocation to Melbourne Water already represents a relatively lower share (as a percentage of total controllable operating expenditure) than the retailers. While it is ultimately a matter of judgement, we believe that a 25 per cent allocation ($2.25 million) to Melbourne Water is too low as it would represent a non-compounding reduction in costs of only 1.2 per cent. It would also require substantially greater reductions from the retailers if the overall targets are to be achieved. Although it is ultimately a matter of judgement, we consider that retaining the allocation as per our draft report is reasonable.

With regard to the allocation of the $5.4 million between the retailers, we believe an allocation based on controllable operating expenditure is the most appropriate approach. The potential savings identified by VCEC will have to be derived from the retailers' controllable operating expenditure, and apportioning the $5.4 million on, say, customer numbers does not reflect the differences between the businesses' customers. For instance, many of Yarra Valley Water's non-residential customers are not analogous to City West Water's non-residential customers.

Since 2007/08 is the most recent year of actual expenditure, we have therefore recommended that the $5.4 million VCEC savings are based on 2007/08 controllable expenditure, adjusted for any 'one-offs' in 2007/08 as outlined in section 6.1.2. This results in the proportional split as outlined in Table 5.4 below.

Table 5.4 Recommended allocation of $5.4 million shared services and bulk procurement savings between retailers ($m, 2008/09)

Business	2007/08 controllable opex	Adjustments	Net controllable opex	% of each retailer	Rounded VCEC saving
Yarra Valley Water	103.73	-4.78	98.95	36%	2.00
South East Water	110.20	-7.42	102.78	37%	2.00
City West Water	72.41	0.00	72.41	26%	1.40

Our proposed allocation of the $9 million in savings is summarised in Table 5.5 below.

Table 5.5 Recommended allocation of shared services and bulk procurement savings ($m, 2008/09)

Business	2008/09	2009/10	2010/11	2011/12	2012/13
Yarra Valley Water	0.00	1.00	1.50	2.00	2.00
South East Water	0.00	1.00	1.50	2.00	2.00
City West Water	0.00	0.70	1.05	1.40	1.40
Melbourne Water	0.00	1.80	2.70	3.60	3.60
Total	**0.00**	**4.50**	**6.75**	**9.00**	**9.00**

Note: Figures may not add due to rounding

Based on Yarra Valley Water's forecast shared services savings and associated costs, the adjustment identified in Table 5.6 is recommended.

Table 5.6 Recommended adjustment to Yarra Valley Water ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
VCEC net savings	Water Plan	0.00	0.00	0.50	1.50	2.00
	Revised forecast	0.00	1.00	1.50	2.00	2.00
	Net change	**0.00**	**-1.00**	**-1.00**	**-0.50**	**0.00**

Note: net savings refer to savings from shared services less implementation costs

5.4.2 Other Productivity savings

In addition to the VCEC shared services savings, the ESC expects businesses to achieve a one per cent per annum (growth adjusted) productivity improvement compared to the baseline (2007/08) operating expenditure. The productivity expectation is calculated by:

- determining the appropriate baseline operating expenditure, which should be net of non-controllable expenditure or any 'one offs' which are not expected to continue in the next regulatory period
- escalating the baseline operating expenditure by a factor equivalent to the growth in customers
- reducing the resultant amount by a compounding one per cent. That is, in the first year, the saving would be one per cent of the growth adjusted baseline operating expenditure, in the second year, it would be the productivity saving from the first year, plus an additional one per cent of the second year's growth adjusted operating expenditure, and so on.

Yarra Valley Water provided a calculation of its productivity savings in a schedule which reconciled expenditure back to its Water Plan. The schedule confirmed that Yarra Valley Water has incorporated a one per cent productivity saving and had accurately incorporated it into its forecast operating expenditure. For this reason, we are not recommending any further adjustment for productivity savings with the exception of the shared services savings adjustment outlined in section 5.4.1.

Nevertheless, Yarra Valley Water identified a number of additional expenditure items on top of their productivity-adjusted baseline expenditure. Some of these are discussed in Chapter 6.

5.5 Gainshare/painshare and alliance arrangements

5.5.1 Introduction

Each of the businesses, including Yarra Valley Water, have historically contracted out large amounts of their operations, maintenance and capital expenditure programs to third party service providers. These contracting arrangements have typically included paying agreed amounts for the delivery of capital works or for undertaking specific maintenance activities or programs.

In recent years the businesses have altered their relationship with third party service providers such that they reflect more of an 'alliance' arrangement. Alliance arrangements are an increasingly common procurement strategy. While they differ on a case-by-case basis, they typically involve the following features:

- long term agreements
- the business pays the alliance partner's direct costs and overheads
- the business also pays the alliance partner an agreed percentage profit margin
- forecast costs for individual projects or programs are estimated up-front and agreed by both parties
- a sharing of cost 'savings' or 'over-runs' between the business and the alliance partner (often referred to as 'gainshare' or 'painshare' payments)
- an 'open book' level of transparency on costs and other operational matters
- there is a commitment on both parties to work together in a collaborative manner and to avoid contract disputation and cost variations.

Alliance contracts have the potential to lead to cost reductions. For example, a review of South East Water's alliance agreement conducted by the Victorian Auditor-General in May 2008 found that: [17]

- South East Water was achieving ongoing savings of $1.63 million annually as a result of the alliance
- South East Water was paying 6.4 per cent less for operations and maintenance work than it would have had the schedule of rates from 2005 continued, and 6.5 per cent less for a sample of capital works projects than it would have had the alliance not existed.

The Auditor General also found that the alliance has generated additional revenue for South East Water and introduced new technologies benefiting South East Water and the water industry more generally, including through low staff turnover.

[17] Victorian Auditor-General 2008, *Review of South East Water's Alliance Agreement*, May, p. 2.

However the Auditor-General also criticised South East Water's arrangement and found that:

- there was a lack of rigour applied in choosing alliancing as the preferred procurement strategy. South East Water did not adequately assess its chosen alliance option against other options
- there were inadequacies in the alliance commercial framework including that the margin payable was higher than for the other metropolitan retailers and that the contract, including the margins, was not reviewable for 12 years.

From a regulatory viewpoint, alliance contract issues that typically need to be considered include:

- whether alliance contracts are the most cost effective approach to procurement
- ensuring that cost savings and efficiencies are appropriately passed back to customers not entirely retained by the alliance contractor
- identifying whether any gainshare or painshare payments to the alliance partner are built into base year (2007/08) expenditure and, if so, whether it is appropriate that these payments be carried forward into future year expenditure
- whether that the process for establishing 'forecast' costs (which ultimately will determine whether gainshare or painshare payments are made) is appropriate
- whether the margins are consistent with market rates.

In price determinations conducted by the ESC in the gas and electricity industries the ESC has expressed strong concern about certain contracting and alliance arrangements - including margin payments and other fees - particularly where the contractor or alliance partner is a related party. In several cases the ESC has not considered that payments to related parties represent efficient expenditure.

The ESC has also expressed concerns regarding the fact that painshare/gainshare may limit the amount of 'painshare' experienced by the contractor, but not the amount of gainshare – thus providing somewhat asymmetric incentives.

5.5.2 Yarra Valley Water's alliance arrangements

Yarra Valley Water does not have an alliance arrangement per se but has a pain/gain relationship style contract with a primary contractor for the majority of its maintenance activities. Under the contract with BBS:

- BBS is paid a 'target' cost for the majority of activities, plus a fixed margin.
- actual costs are compared annually with the target cost

- the difference (pain or gain) is shared 50 per cent between Yarra Valley Water and BBS
- at the anniversary of the contract a new target rate is struck half way between the actual rate and the target rate
- each year an annual price variation factor is applied

The contract was established in 2006 with an initial term of five years, a minimum of three years and a maximum of ten years. However, the contract is also subject to performance arrangements whereby, depending on the degree to which BBS achieves or fails to meet certain KPIs, the length of the contract is either reduced or extended.

Separate incentive arrangements may be in place for major capital projects. For example, Yarra Valley Water has established an incentive scheme with John Holland in respect of the Northern Sewerage Project.

Although it is not a key objective of this report to review in detail the painshare/gainshare arrangements, in principle the Yarra Valley Water appears to have some advantages over the models employed by the other retailers, including:

- providing both financial and non-financial (that is, extension of the terms) incentives to reduce costs
- target costs are automatically reset on an annual basis based on actual outcomes, ensuring that the two do not significantly diverge over the medium term
- a more appropriate length than, for example, the model adopted by South East Water
- a relatively symmetrical arrangement in that both painshare and gainshare amounts are capped.

Of course the efficiency and effectiveness of any individual painshare/gainshare model will depend upon the practical application of the model. In Yarra Valley Water's case this includes the level of the margin and the annual price variation factors applied.

6 Operating Expenditure

6.1 Historical and forecast operating expenditure

6.1.1 Overview of outcomes compared to 2005 determination

In the 2005 determination, the ESC approved operating expenditure for Yarra Valley Water totalling $703.0 million (in 2004 dollars) for the three years to 2007/08. Deducting Melbourne Water's bulk charges and other non-controllable expenditure (such as the environmental contribution and licence fees), and converting the currency to 2009 dollars, Yarra Valley Water's approved operating expenditure was $266.3 million.

Over the same three year period, Yarra Valley Water has actually incurred $299 million, an increase which Yarra Valley Water attributes to the drought and the associated cost of conservation programs, water restrictions and higher maintenance costs.

Table 6.1 shows Yarra Valley Water's actual expenditure over the current regulatory period.

Table 6.1 Actual controllable expenditure and variance to 2005 determination ($m, 2008/09)

Yarra Valley Water	2005/06	2006/07	2007/08	Total
2005 determination	88.7	88.8	88.9	**266.3**
Actual expenditure	102.0	98.2	98.9	**299.1**
Variance	**13.3**	**9.4**	**10.0**	**32.8**

Source: Yarra Valley Water regulatory accounts (2005/06 and 2006/07) and price review template (2007/08). Note: 2007/08 actual operating expenditure has been revised downwards by $4.8 million to remove expenditure related recoverable works.

Despite controllable expenditure being higher than forecast, Yarra Valley Water's actual expenditure in total was approximately the same as forecast. Including uncontrollable expenditure such as Melbourne Water's bulk charges, Yarra Valley Water incurred $813 million in operating expenditure,[18] compared with a $807 million forecast in the 2005 price decision (in 2009 dollars). Lower than forecast bulk charges (due to less water delivered) was a key factor in this outcome.

[18] According to regulatory accounts and the price review template

6.1.2 *Overview of forecast*

Yarra Valley Water has forecast that its operating expenditure will increase significantly over the regulatory period and almost double in real terms from $273 million in 2007/08 to $537 million in by 2012/13. A substantial proportion of the forecast increase is due to forecast increases in bulk water and wastewater charges from Melbourne Water. Aggregate forecasts are provided in Table 6.2:

Table 6.2 Yarra Valley Water operating expenditure forecast 2007/08 to 2012/13 ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water	56.61	60.26	62.42	63.53	64.30	64.68
Wastewater	47.12	47.01	48.40	49.13	49.56	49.66
Controllable expenditure	**103.73**	**107.28**	**110.82**	**112.66**	**113.86**	**114.35**
Melbourne Water bulk charges	150.57	185.18	219.23	270.28	331.88	405.84
Licence fees	0.90	0.74	0.74	0.74	0.74	0.90
Environmental contribution	17.43	17.50	17.01	16.53	16.06	15.61
Total	**272.63**	**310.69**	**347.80**	**400.21**	**462.55**	**536.70**

Source: Yarra Valley Water price review template

Table 6.3 and Table 6.4 summarise Yarra Valley Water's forecast controllable operating costs from 2007/08 to 2012/13 for water and wastewater respectively. Controllable costs are forecast to rise across the period by 14 per cent for water and 17 per cent for wastewater.

Table 6.3 Forecast controllable operating expenditure – water ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Operations and maintenance	29.65	31.49	32.77	33.51	34.26	34.61
Customer service and billing	17.47	17.76	18.24	18.52	18.64	18.78
GSL payments	0.12	0.07	0.14	0.14	0.14	0.14
Corporate	9.36	10.95	11.27	11.36	11.27	11.15
Total water	56.61	60.26	62.42	65.53	64.30	64.68
Increase over 2007/08		**3.65**	**5.81**	**8.92**	**7.69**	**8.07**
Increase over 2007/08 (%)		**6%**	**10%**	**16%**	**14%**	**14%**

Source: YVW ESC Annexures Part 4 tables 4-1 to 4-3.

The increase in wastewater expenditure is somewhat similar to that forecast for water expenditure. The decrease in operations and maintenance is due to $4.78 million in recoverable works expenditure associated with sewage works in new developments that is not forecast to be incurred in the next regulatory period.

Table 6.4 Forecast controllable operating expenditure – wastewater ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Operations and maintenance	9.31	6.62	7.37	7.81	8.25	8.37
Treatment	11.55	12.26	12.07	11.98	11.93	11.88
Customer service and billing	16.17	16.48	16.97	17.26	17.41	17.57
GSL payments	0.03	0.02	0.03	0.03	0.03	0.03
Corporate	10.07	11.64	11.96	12.05	11.94	11.81
Less: recoverable works expenditure in 2007/08 which is not ongoing	-4.78					
Total wastewater	**42.35**	**47.02**	**48.4**	**49.13**	**49.56**	**49.66**
Increase over 2007/08		**4.67**	**6.05**	**6.78**	**7.21**	**7.31**
Increase over 2007/08 (%)		**11%**	**14%**	**16%**	**17%**	**17%**

Source: YVW ESC Annexures Part 4 tables 4-1 to 4-3.

6.2 Expenditure items

6.2.1 Labour

Water Plan proposal

In its Water Plan, Yarra Valley Water identified that its unit costs for labour were expected to increase at one per cent per annum in real terms over the course of the next regulatory period, based on expected increases in its enterprise bargaining agreement (EBA) and independent forecasts that indicate that wages will increase slightly above CPI for the period.[19]

To determine increases in operating costs due to increases in wages, Yarra Valley Water applied a one per cent per annum increase to its direct actual operating expenditure for labour (including overtime) for 2007/08. This resulted in a $1.16 million increase in ordinary labour costs over 20007/08 levels by 2012/13, as set out in Table 6.5.

[19] ESC Annexure Part 4, p.4-27.

Table 6.5 Yarra Valley Water proposed increases in ordinary labour operating expenditure (including overtime) ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	22.37					
Increase		0.22	0.45	0.68	0.92	1.16
Total	**22.37**	**22.60**	**22.82**	**23.05**	**23.29**	**23.54**
Increase over 2007/08 (%)		**1.0%**	**2.0%**	**3.0%**	**4.1%**	**5.2%**

Source: Yarra Valley Water 'Action 3 Labour', ESC Annexure Part 4 page 4-27.

Although a different set of cost assumptions are provided in its template, Yarra Valley Water has advised that these assumptions did not flow through to its pricing model, and only the additional operating expenditure outlined in Table 6.5 was included in Yarra Valley Water's operating costs for the next regulatory period. [20]

Draft report

In our draft report we recommended a revised forecast for additional expenditure in relation to labour costs in order to take the following issues into account:

- while identifying a range of oncosts contributing to its labour costs, Yarra Valley Water had calculated additional labour costs due to increases in wages on the basis of its direct labour costs excluding oncosts. As oncosts contribute to overall labour costs, and will typically vary in proportion to direct wages, in developing our revised forecast of Yarra Valley Water's labour operating expenditure we included oncosts in those costs to be escalated by one per cent real over the period.
- subsequent to the submission of its Water Plan, Yarra Valley Water requested that its revenue requirement be increased to allow for additional operating expenditure for defined benefits superannuation contributions. Yarra Valley Water commenced cash contributions at a level of 9.2 per cent of total member salaries on 26 November 2008, and provided a forecast of contributions for the next regulatory period, taking into account a real increase in wages of one per cent per annum. We considered this to be a reasonable adjustment.

[20] Yarra Valley Water 'Action 3 Labour'

Yarra Valley Water revised proposal

In response to the draft report, Yarra Valley Water made the following adjustments to its original proposal:

- a revised forecast of real increases to labour costs of 1.5 per cent real per annum to reflect advice from the Victorian Government, with the revised forecast taking oncosts into account
- additional costs in relation to defined benefits contributions on the basis of advice provided to Yarra Valley Water by its fund manager.

The resulting proposed increases in operating expenditure over 2007/08 levels for the next regulatory period are shown in Table 6.6.

Table 6.6 Yarra Valley Water additional labour costs per FTE ($m, 2008/09)

	2008/09	2009/10	2010/11	2011/12	2012/13
1.5 per cent real increase in labour costs	0.45	0.91	1.37	1.84	2.32
Defined benefit superannuation costs	0.87	2.11	2.14	2.17	0.92
Total increase over 2007/08 operating expenditure	**1.32**	**3.02**	**3.51**	**4.01**	**3.24**

Yarra Valley Water's proposed increase in unit labour costs is in accordance with our views and recommendations on labour cost increases as set out in section 5.3. Yarra Valley Water identified a range of oncosts contributing to its total operating expenditure for labour that amount to an additional 3.1 per cent on top of its labour ordinary costs in 2007/08. However, this amount includes oncosts of $0.54 million for defined benefit contributions, which were not actually paid in 2007/08. Given that Yarra Valley Water has provided a forecast of additional expenditure for defined benefits contributions which allows for a 1.5 per cent per annum real increase in salaries, we have deducted this amount from the calculation of Yarra Valley Water's oncosts. This results in oncosts of $7.09 million (or 31.7 per cent) in 2007/08 as shown in Table 6.7. Oncost rates are generally in the range of 20 to 35 per cent, depending on the industry. Based on the information provided, we consider that an oncost rate of 31.7 per cent is reasonable.

Accordingly, we have provided a revised forecast of Yarra Valley Water's proposed operating expenditure increase arising from the application of a 1.5 per cent real increase per annum. The impact of this amendment on total labour cost increases is minor, resulting in a reduction in Yarra Valley Water's revised proposal of $0.13 million in total over the entire regulatory period.

Table 6.7 Breakdown of Yarra Valley Water's oncosts ($m, 2008/09)

Item	$m	% of total
Superannuation contributions	1.77	7.9%
Long service leave	1.06	4.7%
Annual leave	2.38	10.6%
WorkCover payments	0.25	1.1%
Redundancy payments	0.03	0.1%
Payroll tax	1.60	7.1%
Total	**7.09**	**31.7%**

Defined benefits contributions

On the basis of advice provided by its fund manager, Yarra Valley Water has requested that its revenue requirement be increased to allow for additional operating expenditure for defined benefits superannuation contributions. Yarra Valley Water provided advice from its fund manager confirming the need for additional contributions, and has forecast the amounts shown in Table 6.8 for the next regulatory period, taking into account a real increase in wages of 1.5 per cent per annum.

Table 6.8 Yarra Valley Water defined benefit superannuation contributions ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Contributions	0	0.87	2.11	2.14	2.17	0.92

Note: 2008/09 amount reflects 7 months' contribution. Source: email from YVW defined benefit fund manager

We consider this a reasonable adjustment and recommend that Yarra Valley Water's revenue requirement be increased to reflect this additional operating expenditure.

Cost per full-time employee

In its submission to the ESC, Yarra Valley Water identified total costs per full time-employee (FTE) ranging from $116,000 in 2007/08 to $122,000 in 2012/13. The 2007/08 figure is based upon a full cost of labour (direct costs plus oncosts) of $40.8 million and 352.6 FTEs, and is substantially higher than costs per FTE identified by the other businesses.

Yarra Valley Water has advised that it had incorrectly included oncosts of $6.7 million and omitted oncosts of $1.6 million (payroll tax) and $0.5 million (for defined benefit superannuation contributions) in its original calculation of 2007/08 total labour cost assumptions provided to the ESC. The total labour cost assumptions also included an amount for a write down of Yarra Valley Water's defined benefits superannuation asset.[21]

As noted above, Yarra Valley Water has advised that the labour cost assumptions set out in the template provided to the ESC do not flow through to its pricing model. Therefore due to these errors, we are not recommending any adjustment to Yarra Valley Water's revenue requirement.

Yarra Valley Water's direct labour costs and revised oncosts for 2007/08 (as set out in Table 6.6, and Table 6.7 above) amount to a full cost of labour in 2007/08 of $30 million and demonstrate a cost per FTE of $85,090 in 2007/08, as shown in Table 6.8 below. This appears reasonable in comparison with the costs identified by the other businesses.

Table 6.8 Yarra Valley Water revised labour costs per FTE ($2008/09)

	2007/08
Direct labour costs ($m)	22.37
Oncosts ($m)	7.63
Total labour costs ($m)	**30.00**
FTEs (number)	352.6
Cost per FTE ($000)	**85.09**

Changes in employee numbers

Yarra Valley Water proposes to add an additional 16 FTEs to its labour force over the next regulatory period, as shown in Table 6.9.

The net increase in FTEs is the result of a total increase of 43 over the course of the next regulatory period, which is expected to be offset by 27 efficiency related staff deductions due to process improvements in the billing and property connection functions. Descriptions of the requirements, positions and areas for additional FTEs put forward by Yarra Valley Water appear reasonable.

[21] Yarra Valley Water did not make defined benefit contributions of $0.5m in 2007/08. However, as these payments began on 26 November 2008, we have included them in calculations of costs per FTE.

Table 6.9 Yarra Valley Water increase in FTEs

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year	352.6					
Increase in FTEs over 2007/08		8	10	11	15	16
Total	**352.6**	**360.6**	**362.6**	**363.6**	**367.6**	**368.6**

Source: YVW file 'Action 3 Labour'

The costs related to these net additional staff were not included in Yarra Valley Water's additional operating expenditure used to determine increases in wages above CPI; they are embedded in individual operating expenditure increases. Therefore we have not made any amendments to Yarra Valley Water's proposed additional operating expenditure in this section in relation to labour costs for these FTEs.

Recommendations

Table 6.10 below sets out Yarra Valley Water's original proposal in relation to additional operating expenditure for labour, a revised forecast based on our recommendations outlined above, and the net change to Yarra Valley Water's revenue requirement.

The revised forecast reflects additional expenditure for:

- the application of a 1.5 per cent per annum real increase to labour oncosts in addition to ordinary labour costs for the next regulatory period.
- defined benefit superannuation contributions.

Note that as Yarra Valley Water's original proposal for labour costs excluded oncosts from the calculation of increases above CPI, Table 6.10 shows additional operating expenditure only, not Yarra Valley Water's total labour operating expenditure.

Table 6.10 Overview of recommended changes to labour operating expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Additional labour costs	Water Plan	0.22	0.45	0.68	0.92	1.16
	Revised forecast	1.32	3.00	3.49	3.98	3.19
	Net change	**1.09**	**2.55**	**2.81**	**3.06**	**2.03**

6.2.2 *Electricity costs*

Components of electricity costs

The businesses' water and wastewater pumping and treatment operations, as well as their head offices, can use significant amounts of energy. This energy is typically sourced from the electricity grid, although gases from wastewater treatment are used as energy sources at wastewater treatment plants). Electricity costs comprise the following key components:

- raw energy, which is typically priced on a peak/off peak basis
- network and metering charges for distribution and transmission. These are regulated charges which are determined according to a CPI - X price path set by the ESC and Australian Energy Regulator (AER). The current distribution price path (which represents the majority of network charges) expires at the end of 2010 and generally provides for annual price increases of CPI - 0.8 per cent to CPI - 1.5 per cent, depending upon the distributor.[22] The subsequent distribution price path will be set by the AER. Transmission prices currently follow a predetermined revenue path until 2013-14
- other miscellaneous charges such as energy levies associated with the Mandatory Renewable Energy Target (MRET) and Victorian Renewable Energy Target (VRET) schemes, NEMMCO pool fees and ancillary services fees etc
- loss factors.

Several businesses have also chosen to source some part of their energy requirement from green energy sources. They can do this by either:

- directly purchasing green energy, which is priced at a premium to the raw energy cost. The current green energy premium is about 6 c/kWh
- purchasing renewable energy credits (RECs). The current price of a REC is in the range of 4-5 c/kWh.

Many Victorian Councils and water businesses participated in a combined electricity tender co-ordinated by Strategic Purchasing and which fixed raw energy prices for the three year period commencing in July 2009. Under the contracts, other cost components (including network charges) are passed through. Because pool prices have generally increased in recent years, for most businesses the raw energy prices were higher than their previous contracts. This has translated into higher forecast electricity costs.

[22] However variations around these price changes are possible depending upon factors including the level of service provided and the impact of any cost pass-through events

Future changes in energy costs

The businesses' electricity costs are likely to change across the next regulatory period for a number of reasons, including:

- as their existing contracts expire
- as a result of changes in network charges, both within the existing price paths and following the reset of distribution network charges on 1 January 2011
- as a result of the changes in metering costs brought about by the introduction of smart meters in Victoria. The installation of smart meters will commence in 2010 with the rollout being completed by 2013. The rollout will increase electricity prices, however at this stage the extent of the price change, and the profile of the price change over the period to 2013, is uncertain. Distributors are required to make their first submission to the AER in relation to forecast costs and charges in February 2009
- the impact of the Australian Government's introduction of a carbon pollution reduction scheme on 1 July 2010. This scheme will take a 'cap and trade' approach whereby emitters of greenhouse gases – such as coal fired electricity generators - need to acquire a permit for every ton of greenhouse gas that they emit. This will increase the price of raw energy, although the extent of this price increase is difficult to gauge.

Overall electricity prices are likely to increase from current levels as the impact of price increases from smart meters and the carbon pollution reduction scheme is likely to exceed the impact of any possible reduction in distribution network charges. However the level of the price changes is extremely uncertain. In preliminary discussions the ESC has raised the prospect of providing for a pass through of these changes. We support this approach. Our analysis below is therefore based on the assumption that the pass through arrangements will apply.

Green Energy

The businesses' large energy usage can mean high levels of greenhouse gas emissions. Water businesses have various obligations to operate in an environmentally sustainable manner. For example, Yarra Valley Water's Statement of Obligations requires it to

- apply sustainable management principles
- improve its sustainability performance, including responding to climate change.

The businesses have interpreted their obligations in different ways, but have generally pursued one or more of the following options to reduce their environmental footprint:

- purchasing a proportion of their energy from renewable (green energy) sources.
- purchasing their energy from non-renewable sources, but purchased renewable energy certificates (RECs). RECs are established pursuant to the Mandatory Renewable Energy Target (MRET) scheme whereby renewable generators create RECs provided they can demonstrate renewable energy production above a given baseline. RECs can be traded and then surrendered. The price of RECs is similar to that of green energy, given that they are related products, however because they are tradeable prices vary on the open market
- creating Victorian Energy Efficiency Certificates (VEECs) through the Victorian Energy Efficiency Target scheme (VEET). VEECs represent one tonne of carbon abatement and have the potential to be created through the retailers' showerhead replacement program
- using energy generated from their own operations (eg mini-hydros, use of biogas)

We note the ESC has previously indicated that purchasing 10 to 20 per cent of green energy or equivalent offsets is not inconsistent with the Statement of Obligations requirement, but that where a business proposes higher abatement levels it needs to demonstrate sufficient customer support for the associated expenditure

Yarra Valley Water's proposal

Yarra Valley proposes to have zero net greenhouse emissions from its operations. Rather than achieve this through a large purchase of green energy[23] or RECs, it uses the assigned benefits from the showerhead exchange program. Yarra Valley Water is pursuing certification of the showerhead exchange program under various schemes including the VEET scheme. We note that the VEET scheme provides that one of its prescribed activities is 'decommissioning of non-low flow shower rose and the installation of low flow shower rose'. It would therefore appear likely, provided that appropriate arrangements are in place to ensure that the newly exchanged shower roses are actually installed and used, that Yarra Valley Water's exchange program will qualify under the scheme.

Yarra Valley Water participated in a bulk electricity purchasing tender conducted by Strategic Purchasing on behalf of a large number of government and semi-government entities. This tender established energy prices for 2008/09 to 2010/11.

[23] Yarra Valley Water actually proposes to undertake a small amount - approximately $20,000 – of green energy purchases

Although the participants in the tender benefitted from the economies of scale, Yarra Valley Water's aggregate electricity costs increased in 2008/09 as the terms of the contract were less favourable than the previous contract which was struck at relatively low rates.

We believe that Yarra Valley Water's approaches of:

- participating in the Strategic Purchasing tender, and
- generally meeting its greenhouse emission obligations through the showerhead program;

represents a prudent approach to electricity purchases. We note that Yarra Valley Water's per kWh cost of energy are well below those of the other retailers, including one retailer which also participated in the Strategic Purchasing tender.

The only area where we have major concerns with Yarra Valley Water's forecast of energy usage is that it has assumed a 30 per cent increase in energy costs upon expiry of its current contract in 2011/12. While Yarra Valley Water has attributed this increase to the impact of the carbon pollution reduction scheme, no evidence has been put forward to justify the magnitude of the increase.

As noted above, we understand the ESC will consider a pass-through for the impact of the scheme. Given this, we have removed the 30 per cent increase in prices from Yarra Valley Water's forecasts and prepared a forecast as calculated in Table 6.11.

Table 6.11 Yarra Valley Water – calculation of energy costs

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Mitcham office costs ($)	208,000	270,000	275,000	281,000	286,620	292,352
Other sites – cost per kWh ($/kWh)	0.090	0.119	0.121	0.123	0.123	0.123
Other sites - total kWh	20,647,568	26,220,454	26,631,977	26,837,536	30,240,208	32,293,057
Other sites - total cost ($)	1,851,328	3,108,259	3,224,703	3,308,017	3,727,433	3,980,469
Total cost ($)	**2,059,328**	**3,378,259**	**3,499,703**	**3,589,017**	**4,014,053**	**4,272,821**

Our recommended changes to the electricity expenditure forecasts are set out in Table 6.12.

Table 6.12 Overview of recommended changes to electricity expenditure ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
Electricity	Water Plan	3.38	3.50	3.59	5.01	5.39
	Revised forecast	3.38	3.50	3.59	4.01	4.27
	Net change	**0.00**	**0.00**	**0.00**	**-1.00**	**-1.12**

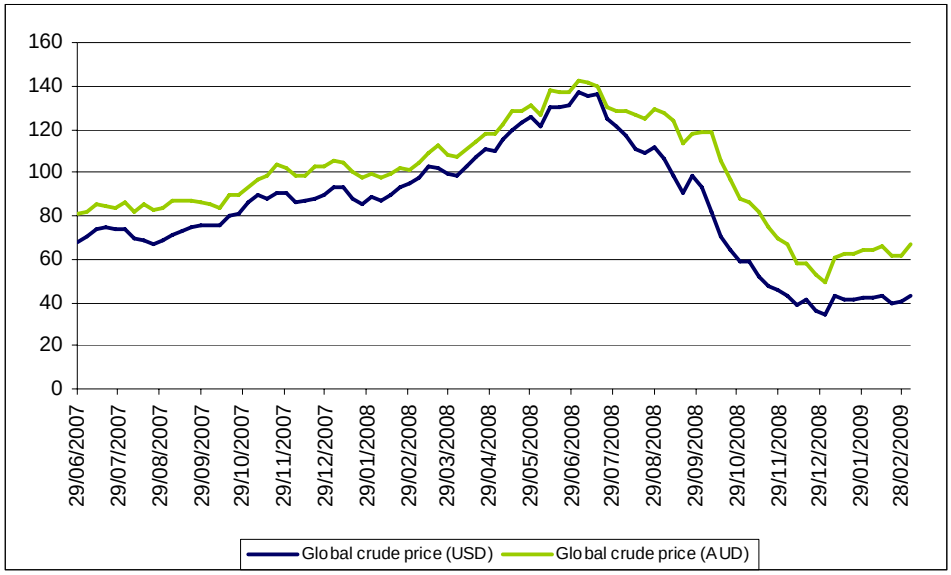
6.2.3 *Oil and fuel costs*

Changes in oil and fuel costs

Fuel costs (as represented by world crude oil prices) are an important input cost for the businesses. The businesses (or their outsourced contractors or alliance partners) will run a maintenance fleet. Oil prices also impact the price of chemicals and the cost of pipelines including those of PvC and similar construction material.

Fuel costs rose during 2007/08 from $80AUS/barrel at the start of the year to $140 at the end and averaged approximately $102 across this period. However, they fell sharply from July to December 2008 before increasing slightly since then and were approximately $67 in early March 2009. This represents a 35 per cent fall from average 2007/08 levels in nominal terms, and a fall of approximately 39 per cent in real terms.

Figure 6.1 Global crude oil prices, $ per barrel (nominal)



Source: US Energy Information Administration web site, accessed 15 March 2009 http://tonto.eia.doe.gov/dnav/pet/pet_pri_wco_k_w.htm.

Future movements in oil prices are difficult to predict, however longer term oil contracts suggest that prices will rebound to some degree. For example, in March 2009 oil futures contracts for delivery in March 2012 were around $65US[24] or approximately $100 AUS in nominal terms (and less in real 2008/09 terms). This is slightly lower than occurred in 2007/08.

Our view is therefore that it is reasonable to assume for forecasting purposes that oil-dependent costs will be at around the same level in real terms as occurred in 2007/08.

Yarra Valley Water has identified that the cost of sewage treatment and recycling waste management will increase due to increasing oil prices as shown in Table 6.13 below. In response to the draft decision Yarra Valley Water argued that oil prices have historically increased at approximately twice the rate of the CPI. It also noted that diesel prices have not rebounded at the same rate as oil.

We have noted Yarra Valley's arguments but point out that even if oil prices did rise at approximately double the rate of the CPI (which in our view is unlikely given current forecasts, although supply side issues created by the OPEC cartel mean that this cannot be ruled out) average prices for the regulatory period will still be lower than in 2007/08.

For the reasons discussed above our view is that the cost increases forecast by Yarra Valley Water are unlikely and the additional expenditure should be removed from the forecast.

Table 6.13 Cost changes attributed to increased oil costs ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Sewage treatment and recycling sites – waste management (screening and sludge)			63	63	139	139

6.2.4 *Chemical costs*

Yarra Valley Water has forecast an increase in expenditure on chemicals at sewerage treatment plants, as shown in Table 6.14. It has noted that 'increased world oil prices are giving rise to substantial increases in chemical costs.'

[24] http://moonshineoil.info/info/news2.htm

Table 6.14 Additional chemical costs ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Chemicals costs			125	125	125	150

In our draft report we expressed concern at the forecast increase in chemical costs on the basis that prices for alumina (being a key determinant of the price of alum which is used extensively in Yarra Valley Water's sewerage treatment process) had fallen substantially in recent months. Yarra Valley Water responded to our draft report and argued that:

- it had renegotiated chemical prices in December 2008 with the result that most prices had increased following three years of fixed contract prices
- the key input to alum prices is sulphuric acid which for which prices rose significantly in 2008 on the back of higher global sulphur prices

We have undertaken further analysis of trends in chemicals costs and note that prices have fallen substantially in recent months and in the majority of cases are expected to remain low as world industrial output declines. For example:

- in relation to alumina, in March 2009 ABARE[25] noted that:

  In 2008, the spot alumina price averaged around US$380 a tonne, but has since fallen to less than US$200 a tonne. Falling demand for aluminium and hence its production, has reduced consumption of alumina and increased its availability. This situation is forecast to continue in 2009 as cuts in alumina production lag cuts to aluminium production where companies are not vertically integrated. Alumina prices are expected to begin recovering in 2010 as demand for aluminium increases and aluminium production increases. Increased demand for alumina ahead of a recovery in production is projected to result in prices rising to 2012. After this time, prices are expected toremain relatively stable.

- sulphur prices underwent a massive 'spike' to US$763 per tonne peak in July 2008 but were just $37.50 in January 2009.[26]
- sulphuric acid prices rose rapidly in late 2007 to late 2008 on the back of supply shortfalls however this situation has reversed markedly in recent months and prices have plummeted in the face of large oversupply.[27]

We also note that for many chemicals the increase paid by Yarra Valley Water in late 2008 was less than the CPI increase over the previous three years.

[25] see http://www.abare.gov.au/publications_html/ac/ac_09/ac09_March_b.pdf, p. 187

[26] see http://www.scotiacapital.com/English/bns_econ/bnscomod.pdf

[27] http://cruonline.crugroup.com/Default.aspx?tabid=484

While we accept that Yarra Valley Water's domestic supply options may be limited, and allowing for the depreciation of the Australian dollar, our analysis suggests that it is unreasonable to assume above-CPI increases in unit chemical costs over the regulatory period. We have therefore removed Yarra Valley Water's additional chemical cost forecasts from the projections.

6.2.5 *Other operations and maintenance costs*

We have identified a number of new operations and maintenance related costs over the next regulatory period, 2009/10 to 2012/13, that is:

- sewer hydraulic improvement program - approximately $2 million
- O&M associated with new water supply assets – approximately $7 million
- O&M associated with sewage treatment costs caused by growth – approximately $2 million
- O&M associated with sewer infrastructure in new developments – approximately $5 million
- O&M associated with new pressure management assets – approximately $2 million

Information on these new expenditure items was not available for inclusion at the time of completing the draft report, however Yarra Valley Water provided supporting information for these projects. Our review of this information is presented in the following sections.

Sewer hydraulic improvement program

Yarra Valley Water is proposing an additional $0.736 million (over 2009/10 to 2012/13) in operating expenditure to cover new works in the sewer hydraulic improvement program. This is a reduction in the original amount proposed in the Water Plan of approximately $0.878 million. In addition, Yarra Valley Water has reduced the expected expenditure in 2008/09 from $0.427 million to $0.103 million.

Two projects represent more than half of the total expenditure for the sewer hydraulic improvement program.

- pollutant trap trial - we are satisfied with the reasoning behind the implementation of the pollutant trap trial and the expenditure proposed.
- pump station upgrade project – we are satisfied with the reasoning behind this expenditure.

Table 6.15 shows the reduction in operating expenditure arising from the error detailed above.

Table 6.15 Operating Expenditure - Sewer hydraulic improvement program - adjustments to operaitng expenditure 2009/10 to 2012/13

	2008/09	2009/10	2010/11	2011/12	2012/13
Water Plan	0.4	0.4	0.4	0.4	0.4
YVW Updated Forecast	0.1	0.2	0.2	0.2	0.2
Adjustment	**-0.3**	**-0.2**	**-0.2**	**-0.2**	**-0.2**

New water supply assets

Yarra Valley Water is increasing operating expenditure in this area by $6.679 million (over 2009/10 to 2012/13). Two projects make up almost 84 per cent of the total expenditure:

- RWTP Aurora Class A Treatment Plant - $4.670 million
- RWTP Hazelwynde Class A Treatment Plant - $0.939 million

Class A recycled water projects are included in new water assets as they are defined as delivering a product which is suitable for potable water substitution.

Yarra Valley Water provided a breakdown of operating expenditure for the Aurora RWTP and this is presented in Table 6.16.

Table 6.16 Operating Expenditure - New Water Supply Assets - Aurora RWTP - 2008/09 to 2012/13 ($'000 2008/09)

Item	2009/10	2010/11	2011/12	2012/13	Total
Labour	27	27	27	27	108
External services (maintenance, security etc.)	203	420	638	858	2,119
Energy	97	202	306	412	1,017
Chemicals	73	151	230	309	763
Total	400	800	1,200	1,606	4,007

We note that information provided by Yarra Valley Water (in Table 6.16) does not correlate with the figures included in the Water Plan (referenced in the first paragraph above), to an amount of $0.663 million. It is unclear why these figures do not match but have assumed that Yarra Valley Water has re-estimated the operating expenditure requirements. All our analysis below is based on the figures presented in Table 6.16.

We would generally expect the increases in operating expenditure to correlate reasonably well with the increases in volumes treated/produced by the RWTP, however we have calculated that this is not the case, as shown in Table 6.17 below.

Table 6.17 Aurora RWTP - Comparison of Operating Cost Increases versus Recycled Water Volume Increase 2009/10 to 2012/13

Item	2009/10	2010/11	2011/12	2012/13
Total Operating Cost Increase (%)	Base Year	100%	50%	34%
Recycled Water Volume Increase (%)	Base Year	46.7%	31.8%	24.3%

Table 6.17 shows that the operating costs are increasing at a significantly higher rate than the volume of recycled water produced by the plant. In fact, we would expect the opposite to occur in normal circumstances, that is, we would expect the operating cost per megalitre of recycled water supplied to be at its highest at the commencement of the plant and then decrease with increasing volumes, given economies of scale and fixed costs (but excluding any step increases in capacity or new assets). Our calculations indicate that the cost per megalitre of recycled water supplied increases from $1,246/ML (in 2009/10) to $2,080/ML (in 2012/13), a 67 per cent increase.

We propose to adjust the operating expenditure for the Aurora RWTP to reflect our expectation that operating cost per mega litre of recycled water supplied should be at its highest at the commencement of operations. We have done this using the calculated unit rate of $1,246/ML identified above. Table 6.18 shows our proposed adjustments to operating expenditure.

Table 6.18 Operating Expenditure - Proposed Adjustments to Aurora RWTP Expenditure (2009/10 – 2012/13)

Item	2009/10	2010/11	2011/12	2012/13
Aurora Total (ML/year)	321	471	621	772
Water Plan Aurora RWTP Opex Cost ($000 2008/09)	$400	$800	$1,201	$1,606
Revised forecast Aurora RWTP Opex ($000 2008/09)	$400	$587	$774	$962
Net change ($000 2008/09)	$0	-$213	-$427	-$644

Given Yarra Valley Water's definition of which assets are considered new water assets as opposed to sewerage assets (as discussed above), we would expect that the Brushy Creek Class A RWTP would also be considered a part of this category. We note however that the proposed operating expenditure for the Brushy Creek plant is included in new sewerage treatment plant costs caused by growth while other expenditure for Brushy Creek such as a pump station are included in the water category.

We would suggest that the operating expenditure allocated to the Brushy Creek Class A RWTP should be moved to the new water supply assets category to be consistent with the allocation of the Aurora RWTP and the Hazelwynde RWTP. We note however that this will not have any affect on the operating expenditure.

Sewerage treatment costs caused by growth

Yarra Valley Water is increasing operating expenditure in this area by $1.458 million. One project, the Brushy Creek Class A RWTP, makes up more than 37 per cent of the total expenditure, with an operating expenditure of $0.798 million.

As discussed in the previous section, we would expect that this expenditure would be categorised under new water supply assets, consistent with the Aurora RWTP and the Hazelwynde RWTP.

We completed a similar analysis for Brushy Creek RWTP as done for the Aurora RWTP and in general we found similar issues, that is:

- the increase in operating expenditure exceeded the increase in recycled water volume supplied
- there was a generally increasing trend of the operating cost per megalitre of recycled water supplied, although the magnitude of the increase was lower than for Aurora
- a reduction in the proposed operating expenditure is possible however the magnitude of the proposed decrease would be significantly less than that for Aurora. As such, we have decided to leave this expenditure as proposed to account for any uncertainties.

Sewerage infrastructure in new developments

Yarra Valley Water is increasing operating expenditure in this area by $4.512 million. The predominant expenditure lies with one project, the Aurora STP (STP74), at $2.124 million, which makes up almost 50 per cent of the total expenditure.

Yarra Valley Water provided a breakdown of the operating expenditure for this plant, as shown in Table 6.19.

Table 6.19 Operating Expenditure - Aurora STP (2009/10 to 2012/13) ($000 2008/09)

Item	2009/10	2010/11	2011/12	2012/13	TOTAL
Labour	$109	$109	$109	$109	**$436**
Transport	$16	$16	$16	$16	**$64**
External services (maintenance, security etc.)	$153	$269	$385	$385	**$1,192**
Energy	$54	$95	$136	$136	**$421**
Chemicals	$37	$66	$94	$94	**$291**
Total	$369	$555	$740	$740	**$2,404**

Our assessment of the operating expenditure for this plant indicates that the increase in operating expenditure is lower than the increase in the volume of sewage treated. As such, the operating cost per megalitre of recycled water supplied decreases from $1,125 / ML to $721 / ML over 2009/10 to 2012/13. This is consistent with expectations and therefore we have not made any adjustments to the forecast in this area.

New pressure management assets

Yarra Valley Water is increasing operating expenditure in this area by $1.552 million. The majority of expenditure lies with one project, complaint resolution at $0.670 million, which makes up about 43 per cent of the total expenditure. In addition, Yarra Valley Water is spending an additional $0.264 million in 2008/09.

Yarra Valley Water provided a breakdown of the operating expenditure for this item, as shown in Table 6.20 below.

We have no issues with the first three items in Table 6.20, however we do not accept Yarra Valley Water's forecast additional labour costs. Yarra Valley Water indicated that this allocation covered additional staff time to deal with complaints and their resolution, however we would expect that these tasks be undertaken within the existing customer service team. Yarra Valley Water has given no indication that new staff are required for this project.

Table 6.20 Operating Expenditure - PMA Complaint Resolution Program Expenditure 2008/09 to 2012/13 ($000 2008/09)

Item	2008/09	2009/10	2010/11	2011/12	2012/13	TOTAL
Investigate pressure complaints (Field investigation, monitoring and minor operational changes, etc)	$124.0	$95.9	$70.4	$74.9	$73.5	**$314.7**
Fire service upgrade (Cost sharing for private plumbing – fire services, etc)	$15.8	$12.3	$9.0	$9.6	$9.4	**$40.2**
Customer claim management (Cost sharing, plumbing upgrades, etc)	$79.3	$61.2	$44.8	$47.8	$46.9	**$200.8**
Labour	$45.0	$34.8	$25.5	$27.1	$26.6	**$114.0**
Total	**$264.2**	**$204.2**	**$149.7**	**$159.5**	**$156.4**	**$669.7**

We propose a reduction in the operating expenditure for this project to remove the cost of labour, as shown in Table 6.21 below.

Table 6.21 Operating Expenditure - PMA Complaint Resolution Program Expenditure Adjustment 2009/10 to 2012/13 ($000 2008/09)

Item	2009/10	2010/11	2011/12	2012/13	Total
Water Plan Complaint Resolution Program Expenditure	$204.2	$149.7	$159.5	$156.4	$669.7
Revised forecast Complaint Resolution Program Expenditure ($000 2008/09)	$169.4	$124.1	$132.4	$129.8	$555.7
Net change ($000 2008/09)	-$34.8	-$25.5	-$27.1	-$26.6	-$114.0

6.2.6 Billing and collection

Comparison of business proposals

Each of the retail businesses is proposing increased operating expenditure in relation to billing and collection services for the next regulatory period. For the purposes of comparison, we have included the following items in our calculations of total billing and collection expenditure:

- bill printing and postage
- collection costs (such as payment channel costs and merchant service fees)
- debt collection costs.

Total billing and collection expenditure proposed by the businesses in their Water Plans is set out in Table 6.22.

Table 6.22 Total billing and collection operating expenditure proposed by business ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	3.17	3.39	3.54	3.64	3.72	3.81
South East Water	6.48	6.91	7.51	8.11	8.82	9.64
Yarra Valley Water	5.99	6.80	7.58	8.43	9.06	9.62

Note: SEW's Water Plan included a significant amount of operating expenditure in relation to revenue not collected for bad debts, we have removed this expenditure from the figures in the table for the purposes of comparison.

The per customer expenditure on billing and collection for each business is set out in Table 6.23.

Table 6.23 Billing and collection operating expenditure per customer ($, 2008/09)

		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	Per customer ($)	9.60	10.00	10.20	10.23	10.21	10.23
	Increase over 2007/08		**4%**	**6%**	**7%**	**6%**	**7%**
South East Water	Per customer ($)	10.57	11.10	11.86	12.60	13.48	14.51
	Increase over 2007/08		**5%**	**12%**	**19%**	**28%**	**37%**
Yarra Valley Water	Per customer ($)	9.56	10.70	11.77	12.92	13.71	14.36
	Increase over 2007/08		**12%**	**23%**	**35%**	**43%**	**50%**

Yarra Valley Water's proposal

We note that on the basis of 2007/08 actual operating expenditure, Yarra Valley Water currently has the lowest per customer expenditure for billing and collection of the three retail businesses. However, its proposed increases are significantly greater than the other businesses, and result in Yarra Valley Water having the highest per customer expenditure by the end of the next regulatory period.[28]

The main drivers of Yarra Valley Water's proposed increase in operating expenditure include:

- an increase in bill payment costs of $1.07 million or 43.1 per cent above 2007/08 levels
- an increase in operating expenditure related to agency debt collection of $1.77m or 226.7 per cent above 2007/08 levels by the end of the period.

Increases in these costs are based on Yarra Valley Water's views about the impact of its price increase.

Bill payment costs (customer arrangements) are a fixed charge per payment and therefore related purely to transaction volumes. Yarra Valley Water's proposed increase reflects its views about growth in the number of payment transactions due to customers moving to monthly and fortnightly payment arrangements.

Agency debt collection costs are commission based and depend partly on volume and partly on the value of the debt. Yarra Valley Water has advised that its forecast increase in these costs is derived from its assumptions about:

- the average value of each debt referred for recovery due to the price increase. Specifically, the increase in the value of each debt is assumed to mirror the increase in price almost exactly
- the volume of debt referred, which is projected to increase due to the price increase and current economic climate.

While recognising that the impact of the price increase and economic climate is difficult to quantify, we note that Yarra Valley Water's assumptions about growth in bill payment transactions and referral rates do not bear any relationship to historical data provided for 2006/07 and 2007/08.

[28] In response to our draft report, South East Water provided a revised proposal, resulting in a final cost per customer of $13.76.

Recommendation

Given that the businesses operate in similar environments, we believe it is reasonable to expect that there should not be large variations in cost increases for the provision of fundamentally similar services.

Due to the similar size and customer make-up of Yarra Valley Water and South East Water, we consider that South East Water's increase in per customer operating expenditure for billing and collection services provides an appropriate benchmark for increases to Yarra Valley Water's operating costs.

Table 6.24 sets out Yarra Valley Water's original proposal in relation to operating expenditure for billing and collection, a revised forecast based on our recommendations, and the net change to Yarra Valley Water's revenue requirement.

Table 6.24 Overview of recommended changes to billing and collection operating expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Billing and collection	Water Plan	6.80	7.58	8.43	9.06	9.62
	Revised forecast	6.32	6.67	7.04	7.42	7.83
	Net change	**-0.47**	**-0.91**	**-1.39**	**-1.64**	**-1.79**

6.2.7 Hardship support and customer contacts

Hardship support

Yarra Valley Water has proposed an increase in hardship support costs associated with billing and collection, of $0.38m or 54.2 per cent above 2007/08 levels by the end of the period. The proposed expenditure, in Table 6.25, is related to additional FTEs and crediting customer accounts as part of the 'Arrange and Save' program.

Table 6.25 Yarra Valley Water proposed operating expenditure for hardship support ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	0.70					
Increase		0.05	0.21	0.25	0.35	0.38
Total	0.70	0.75	0.91	0.95	1.05	1.08
Increase over 2007/08 (%)		7%	30%	36%	50%	54%

Source: YVW presentation "Additional Opex" 9 Dec 2008, ESC Annexure Part 4 p. 4-26, YVW ESC Audit Queries – Operational Expenditure 19 Jan 2009.

The increases in operating expenditure identified by Yarra Valley Water are related to additional resources and growth in crediting customer accounts. Yarra Valley Water provided forecasts of growth in hardship customers as shown in Table 6.26 below as justification for increased costs.

Table 6.26 Yarra Valley Water assumptions underpinning increases in hardshp support costs

	2007/08 actual	2008/09 Year to date	2008/09 forecast	2009/10	2010/11	2011/12	2012/13
Hardship new customer growth	-9.1%	34.7%	35%	25%	20%	10%	10%

Source: Yarra Valley Water presentation: *Additional operating costs – billing and contact services*, 9 December 2008

On the basis of the data provided by Yarra Valley Water in relation to recent growth in hardship customer numbers, we consider the additional operating expenditure in relation to additional FTEs reasonable.

However, in relation to expenditure for crediting customer accounts, we note that Yarra Valley Water's template contains significant amounts of expenditure for debt write-offs in the form of 'revenue not collected'. Therefore, increasing Yarra Valley Water's operating expenditure to account for increased crediting of customer account may result in double counting this expense.

While we have not recommended an adjustment to Yarra Valley Water's operating expenditure to remove this item, the ESC should consider whether the treatment of this expense as operating expenditure as opposed to revenue not collected is appropriate.

Recommendation

We have not recommended any changes to Yarra Valley Water's operating expenditure forecasts in relation to hardship support costs

6.2.8 Conservation programs

Background

Each of the metropolitan businesses has proposed expenditures associated with achieving water conservation targets and delivering related initiatives as required under the water policy framework in Victoria. The total conservation expenditure across the retailers is shown in Table 6.27. The majority of this expenditure is related to new obligations and would not have been incurred five years ago.

Table 6.27 Total water conservation expenditure by business[1] ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	7.27	8.10	10.26	8.79	8.36	8.32
South East Water[2]	5.04	8.60	10.60	10.20	8.80	8.90
Yarra Valley Water	7.37	9.98	12.08	9.19	8.79	9.23
Melbourne Water	2.30	4.80	4.59	4.20	3.20	3.10
Total	**21.98**	**31.48**	**37.53**	**32.38**	**29.15**	**29.55**

Note: [1] Expenditure shown in this table includes any changes proposed by businesses in response to the draft report. [2]South East Water's forecast expenditure on restrictions was not included in the water conservation expenditure total. We have included this in the total for the purpose of comparison.

The per customer expenditure on water conservation for each business is set out in Table 6.28.

Table 6.28 Water conservation expenditure per customer[1 2] ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	22.03	23.90	29.55	24.73	22.97	22.36
South East Water	8.23	13.81	16.74	15.85	13.46	13.40
Yarra Valley Water	11.77	15.71	18.76	14.08	13.30	13.78
Average expenditure per customer	**12.54**	**16.91**	**20.76**	**17.66**	**16.18**	**16.40**

The key issues for review are:

- ensuring conservation programs are consistent with the policy framework for conservation measures in metropolitan Melbourne
- ensuring conservation programs are consistent with forecast restrictions and capital projects.

In particular, as noted by the ESC in its Issues Paper, this review needs to consider the purpose of certain water saving measures, given the augmentation projects being undertaken, and the impact of these measures on consumption over the regulatory period. This is important because the *Central Regional Sustainable Water Strategy* (CRSWS) (October 2006) pre-dates significant supply augmentations accelerated by the Victorian Government in *Our Water Our Future - The Next Stage of the Government's Water Plan* (June 2007) following further decline in water flows and the adoption of worst case scenario inflow assumptions. Committed projects include the desalination plant, the food bowl modernisation in Northern Victoria, the Sugarloaf pipeline and the expansion of the Victorian Water Grid. The new water supply options are expected to provide additional water supply of 240 gigalitres per year to Melbourne by 2011, which is half of Melbourne's annual water use.

These planned augmentations will inevitably alter the balance between the supply and demand of water in metropolitan Melbourne. There is some uncertainty about the ongoing role that conservation measures will have in managing the supply-demand balance after augmentations are in place and restrictions begin to ease.

The Victorian Government policy in relation to conservation measures has not been revisited following the decision to accelerate the augmentation projects. The *OWOF - Next Stage of the Government's Water Plan* reiterated the continuing importance of water conservation of measures and per capita water consumption targets established in the CRSWS.

However, the Victorian Competition and Efficiency Commission's *Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector* report notes the importance of an iterative and adaptive approach to planning which permits adjustments as circumstances change and recommends that:

current data and assumptions regarding the supply and demand outlook for water inform both the over-*arching strategy document, including the Central Region Sustainable Water Strategy, and the retailers' draft water plans.*[29]

Similarly, the Victorian Auditor-General, in its audit of planning for water infrastructure in Victoria, notes that the scale of augmentation changes means that:

the Department needs to revisit the strategy objectives, targets and actions in the light of these actions. For example, once these augmentation projects come on line, the justification for the scale of spending *on conservation and recycling needs to be revisited.*[30]

[29] Victorian Competition and Efficiency Commission 2008, Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector, final report, February.

In reviewing the businesses' water conservation expenditure for the next regulatory period, our view is that it is reasonable to expect the businesses to aim to achieve the water savings required by the Victorian Government under OWOF and the CRSWS. We also note that, given the extremely low storage levels and potential impact on water supply of the recent bushfire events, forecast restrictions levels have been revised since Water Plans were submitted, with restrictions of at least Level 1 expected to be in place until the end of the next regulatory period. The new Target 155 program has also been implemented by the Government to further promote water conservation.

Having said that, we still believe that it is important to review the purpose of individual conservation measures proposed by each business, particularly in light of the fact that the long-term headline water conservation and recycling targets to be achieved in the Melbourne region by 2015 under the CRSWS have already been met or exceeded. As noted in the Government's 12 month progress report on OWOF, Melbourne's per capita water consumption in 2007-2008 will beat the 2020 target.[31] We also note that the metropolitan water businesses are spending $128.6 million in total on conservation over the next regulatory period. While each individual program may have merit, when considered in aggregate terms the investment in this program is substantial.

We have therefore considered issues such as the timing of proposed expenditure and the diminishing returns of additional water conservation expenditure in terms of water saved and economic benefits.

Policy framework for water conservation

OWOF is the over-arching policy framework for long-term water planning in Victoria. With the aim of securing Victoria's water supplies for the next 50 years, it sets out 24 water conservation actions aimed at achieving a target of a reduction in per capita drinking water consumption in Melbourne of 15% by 2010 compared to the 1990s average.

The OWOF policy framework for water conservation for metropolitan Melbourne is applied through regional strategies and implementation plans as illustrated in Figure 6.2.

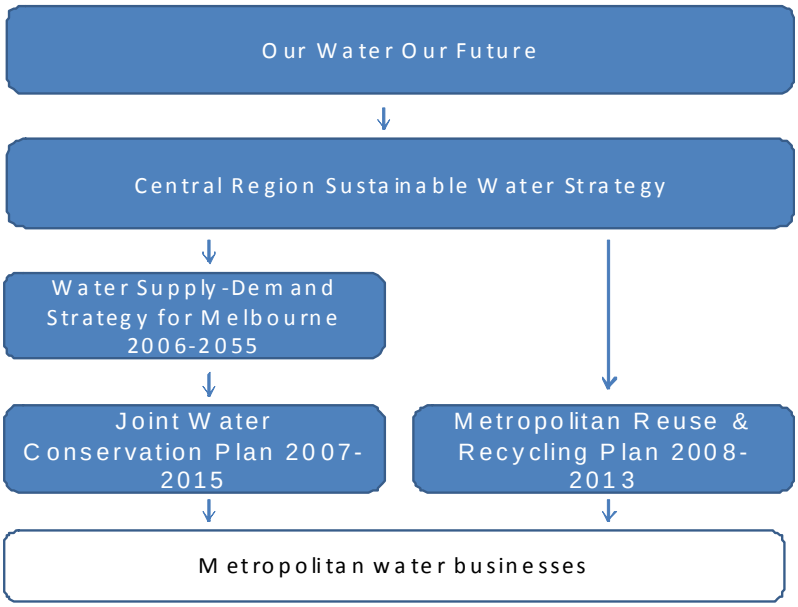
[30] Victorian Auditor-General, Planning for Water Infrastructure in Victoria, April 2008, p.28.

[31] Victorian Government, *12 Month Progress Report*, June 2008.

The development of Regional Sustainable Water Strategies is a key action from OWOF. The strategies set out actions to secure water for industry, cities and towns in a region while safeguarding the region's rivers and aquifers. The CRSWS, which was released in October 2006, sets key water conservation and efficiency actions for industry, cities and towns in the Central Highlands, Barwon, Port Phillip and Westernport regions while safeguarding the region's rivers and aquifers.

The *Water Supply-Demand Strategy for Melbourne* details how the metropolitan water authorities will implement the Government's policy directions and actions announced in the CRSWS. The Water Supply-Demand Strategy, which was required to be developed under the Statement of Obligations of each business, is specifically focused on securing supplies for Melbourne urban water customers for the next 50 years. It is the principal planning document for the metropolitan water authorities.

Figure 6.2 Policy framework for water conservation in metropolitan Melbourne



The *Joint Water Conservation Plan 2007-2015* (JWCP) and the *Metropolitan Reuse & Recycling Plan 2008-2013* (MRRP) have been developed by the businesses and establish implementation plans for the businesses to meet the water conservation actions and targets set by Government in the CRSWS and outlined in the Water Supply-Demand Strategy for Melbourne. Under the Statement of Obligations for each business, the programs developed for sustainable water resource management must be consistent with these plans.

The JWCP is focused on identifying the most effective delivery method to meet the 2015 water conservation target of a 30% reduction in water usage by 2015 (from a 1990s average). This target represents a water saving of 74 gigalitres per year by 2015, including 42 gigalitres for maintaining savings and 32 gigalitres of additional savings. Of the additional savings requirement, the JWCP directly allocates the gigalitre target to each business as shown in Table 6.29

Table 6.29 Water savings under the JWCP to meet targets[32]

	Water saving GL/year by 2015
City West Water	6.9
South East Water	12.0
Yarra Valley Water	12.7
Total	**31.6**

The MRRP identifies the most efficient and prudent recycling and reuse schemes that achieve the potable substitution target (and interim target) established in the CRSWS. Thirteen priority projects have been identified by the water businesses to achieve the 2015 interim target and the 2030 target at a cost of $307.3. For the purpose of this review recycling projects have been considered under capital expenditure if they fall into the top 10 projects by size.

Appendix A maps the programs set out in the JCWP to the policies, strategies and objectives set out in OWOF, the CRSWS and the Water Supply-Demand Strategy.

Yarra Valley Water's proposal

Yarra Valley Water forecast in its Water Plan that its expenditure on conservation programs will increase by 7 per cent from $7.37 million in 2007/08 to $7.92 million in 2012/13, but with a peak of $12.06 million in 2009/10.[33] In response to the draft report Yarra Valley Water revised its forecasts for each year of the

[32] Note for consistency with the other businesses we have included Yarra Valley Water's expenditure on the development of the Water Supply Demand Strategy, the Smartwater Fund and water restrictions in its water conservation expenditure.

[33] Note for consistency with the other businesses we have included Yarra Valley Water's expenditure on the development of the Water Supply Demand Strategy, the Smartwater Fund and water restrictions in its water conservation expenditure.

regulatory period as shown in Table 6.30, including changes to reflect inclusion of additional expenditure for the Target 155 program and the showerhead program.

Table 6.30 Water conservation expenditure[1] ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water Conservation Program Management	0.33	0.33	0.33	0.33	0.33	0.33
savewater!® membership	0.33	0.33	0.33	0.33	0.33	0.33
Showerhead Exchange Program	1.56	1.65	1.65	2.13	2.17	2.23
Behaviour change program	0.13	0.50	0.50	0.00	0.00	0.00
Washing machine, toilets, evaporative coolers and kiosks	0.72	0.12	0.12	0.12	0.12	0.06
Gardening Program	0.02	0.02	0.02	0.08	0.15	0.15
Smart account	0.03	0.11	0.11	0.11	0.11	0.11
Active Leakage Control, Accelerated.	0.32	0.32	0.32	0.32	0.32	0.32
Water Management Plans	0.45	0.45	0.45	0.45	0.45	0.45
Business Solutions + Segment Programs	0.20	0.36	0.36	0.36	0.36	0.36
Research activities for WSD Planning	0.13	0.04	0.04	0.15	0.04	0.04
OWOF Contribution	1.12	1.06	1.06	1.06	1.06	1.06
Additional OWOF	0.00	0.45	0.45	0.45	0.45	0.45
Costs related to development of next CRSWS	0.00	0.00	0.26	0.00	0.00	0.00
Smartwater Fund	0.76	0.76	0.76	0.76	0.76	0.76
Water Restrictions	1.19	1.19	1.19	1.19	1.19	1.19
Other minor	0.08	0.10	0.10	0.10	0.10	0.10
Total Water Plan proposal	**7.37**	**7.79**	**8.05**	**7.94**	**7.94**	**7.94**
Revised proposal in response to draft report	**7.37**	**9.98**	**12.08**	**9.19**	**8.79**	**9.23**

Note: 1 Yarra Valley Water included expenditure for Non Revenue Water Investigation and Thomson Qualification of Rights in its water conservation expenditure forecast, however we have removed from the forecast for the purpose of comparison with other businesses.

The largest increase proposed by Yarra Valley is in its showerhead replacement program, for which it proposed in its Water Plan a 43 per cent increase from $1.56 million in 2007/08 to $2.23 million in 2012/13 reflecting an increase in the installation cost of a showerhead from $30 to $40 from 2010/11 onwards due to the higher cost of encouraging uptake by customers who have not yet participated in the program. Yarra Valley Water has since revised upwards its forecast for the showerhead program by a total of $4.54 million across the next regulatory period. This reflects an additional cost of $50 per showerhead for 90,775 showerheads (this volume is based on market research estimate of demand propensity) to take into account the need to augment the existing exchange program with a retrofit service.

We note that there are a number of uncertainties related to delivery of the showerhead program over the next regulatory period. While we agree that the customer initiated exchange method is unlikely to achieve the targets because the people with a propensity to exchange their showerheads will already have done so, we are not satisfied that Yarra Valley Water's proposed cost per showerhead reflects an efficient economic outcome. We note that, with supply augmentations expected to come on line and restrictions ease from 2011/12 onwards, the return on this investment is likely to decrease considerably.

In addition, we believe that the introduction of the Victorian Energy Efficiency Target (VEET) scheme on 1 January 2009 may impact the volumes delivered by retailers and also has the potential to reduce the unit cost of a replacement. This is because under the VEET scheme accredited agents are likely to compete to replace showerheads in order to earn 'white' certificates. While Yarra Valley Water is currently meeting its replacement target and its future targets (see Table 6.31) seem reasonable in the absence of competition in the market, it is likely that there will be some impact on volumes able to be delivered by the retailers.

Table 6.31 Number of showerhead replacements

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Number of showerhead replacements	47,607	60,515	54,933	53,300	54,125	55,750

The metropolitan businesses will also be able to contract out the replacement activity to an accredited agent and therefore avoid having to create their own delivery channels as retrofitting becomes necessary. Alternatively, if businesses take part directly in the VEET scheme they will be able to offset program expenditure by reducing their purchase of Renewable Energy Certificates.

In summary, we acknowledge that in order to meet targets more intensive delivery channels are required for the showerhead program in future years. However, we believe that the introduction of the VEET scheme offers opportunities for the businesses to offset the potential cost increase as a result of retrofitting and also means that some showerheads are likely to be replaced by other accredited VEET providers. We therefore believe that showerhead program costs should continue to reflect only the cost of customer initiated exchanges. We therefore recommend that Yarra Valley Water's forecast cost per showerhead for its showerhead program remain unchanged from what was proposed in its Water Plan.

It is extremely difficult to forecast these offsetting impacts on unit costs and volumes to be delivered by Yarra Valley Water. On balance we believe that it is reasonable to assume that the impacts will offset each other. We therefore recommend that Yarra Valley Water's expenditure for its showerhead program remains unchanged from what was proposed in its original Water Plan submission.

The other large increase in Yarra Valley Water's proposed water conservation expenditure is related to the Target 155 program. As this program was introduced by the Government after submission of the Water Plan in November 2008, Yarra Valley Water has proposed that $2.19 million and $3.28 million additional expenditure be included in each of 2008/09 and 2009/10 respectively.

In reviewing this we note that we have received information from the Department of Sustainability and Environment indicating that during 2008/09, additional funding of $3.7 million is required to fund Target 155 and that the campaign costs have been split equally between the four metropolitan businesses. If we take this as a benchmark it seems reasonable for a business to be spending approximately $1.0 million in 2009/10 on Target 155 plus an allowance some for in-house costs. We also note that Yarra Valley Water's proposed expenditure per customer of $3.72 for 2008/09 compares reasonably on an expenditure per customer basis to what is proposed by South East Water, which is at the lower end of the forecast cost range. However, Yarra Valley Water is proposing a cost of $5.49 per customer in 2009/10. This is at the high end of the range of costs proposed by retailers for this program. It also does not seem reasonable to expect that the costs of this program will increase significantly after the first year when there are initial set-up costs.

We therefore recommend that Yarra Valley Water's proposed expenditure be increased by only $2.09 million for 2009/10 for the Target 155 program so that its expenditure per customer is equal to South East Water's proposed expenditure per customer (average across 2008/09 and 2009/10 of $3.50).

We note that the expenditure per customer proposed on this program for 2009/10 by each business is similar: $5.30 per customer for City West Water, $5.21 per customer for South East and $5.49 per customer for Yarra Valley Water. As we understand that the costs are being allocated to business on a per customer basis we therefore accept that it is reasonable to include an additional $3.28 million in Yarra Valley Water's conservation expenditure for 2009/10.

Yarra Valley Water is also forecasting little or no change in expenditure from 2007/08 levels for several conservation measures, including its water conservation management program (at $0.33 million per year) and its smart water bill ($0.11 million), which is an additional document attached to customers' water bills that provides information on their particular water use compared to typical and efficient households, tailored water-saving tips and information that directs customers to water saving solutions. Yarra Valley Water has also included expenditure of $1.19 million for each year except 2011/12 when it is proposing a $0.79 million[34] to reflect that there will be no need to manage a change in water restrictions during that year of the next regulatory period. However, Yarra Valley Water advises that this expenditure will be redirected to the reactivated mains cleaning program as restrictions are lifted.

This expenditure needs to be reviewed in light of planned supply augmentation and the expected move out of restrictions. Regarding the appropriate level of conservation measures, Yarra Valley Water states in its Water Plan Annexure that:

As water restrictions are eased, it will be important to maintain our water conservation program at its current level until at least the end of this Water Plan period to cater for the uncertainty of drought and climate change and enable Melbourne's dams to refill so as to provide long-term water supply security to customers." [35]

In regard to the expenditure on the smart water bill we accept Yarra Valley Water's justification that this is a legitimate ongoing expenditure that allows customers to manage their water use for both conservation and financial purposes.

However, Yarra Valley Water has not provided sufficient justification of its expenditure on water conservation management and restrictions over the next regulatory period. We note that the long-term headline targets for water conservation set out in the CRSWS are currently being met or exceeded, and that the Target 155 program is temporary, with the lifting of restrictions from 2011/12 forecast. We also believe that customer awareness about restrictions and

[34] Note the expenditure of $0.79 million for 2011/12 reflects an amendment from its Water Plan proposal of $1.19 million of expenditure for that year.

[35] p.2-21

knowledge of water saving will be at its maximum by the time restrictions begin to ease, and that the current level of conservation management will not be required.

In addition, in relation to Yarra Valley Water's proposal to redirect its forecast expenditure on water restrictions to another program does not seem to reflect an appropriate business planning approach and seems to indicate that the proposed expenditure is discretionary. We therefore consider that it is reasonable to phase out 30 per cent of Yarra Valley Water's expenditure on these measures between 2011/12 and 2012/13. This equates to the following changes:

- for expenditure on the administration of restrictions a reduction $0.18 million in 2011/12 and $0.36 million in 2012/13
- for expenditure on its water conservation management program a reduction of $0.05 million in 2011/12 and $0.10 million in 2012/13.

Recommendations

Table 6.32 sets out Yarra Valley Water's original proposal in relation to additional expenditure for water conservation, a revised forecast based on our recommendations outlined above, and the net change to Yarra Valley Water's revenue requirement.

Table 6.32 Overview of recommended changes to water conservation expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Water conservation	Water Plan	7.77	8.03	7.92	7.92	7.92
	Revised forecast	9.96	10.12	7.92	7.70	7.47
	Net change	**2.19**	**2.09**	**0.00**	**-0.23**	**-0.46**

6.2.9 Information technology (IT)

Water Plan proposal

In 2003 Yarra Valley Water adopted its Information Technology Strategic Plan (ITSP), a planning framework with a ten year outlook that establishes requirements for the upgrade and replacement of hardware and system or application software, and also comprises projects for business efficiency and effectiveness. One of the core aims of the ITSP is to "provide the Company with its required level of IT functionality whilst minimising total capital and operating costs over the long term".[36]

[36] ESC Annexure, November 2008, p.4-78

In its Water Plan, Yarra Valley Water has forecast an increase in information technology (IT) operating expenditure of $4.55 million over 2007/08 levels by the end of the next regulatory period, as shown in Table 6.33

Table 6.33 Yarra Valley Water IT operating expenditure - Water Plan ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	11.38					
Increase		3.32	3.89	4.35	4.51	4.55
Total	**11.38**	14.70	15.27	15.73	15.90	15.94
Increase over 2007/08 (%)		**29.2%**	**34.1%**	**38.2%**	**39.6%**	**40.0%**

Source: ESC Audit queries - operational expenditure 19 Jan 2009, ESC Annexure Part 4 page 4-27.

Yarra Valley Water revised proposal

In response to our draft report, Yarra Valley Water indicated that its original forecasts were provided in relation to 2007/08 budgeted amounts, rather than 2007/08 actual expenditure. Table 6.34 sets out Yarra Valley Water's revised proposal.

Table 6.34 Yarra Valley Water IT operating expenditure – Water Plan ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	11.39					
Increase		2.16	2.73	3.19	3.35	3.40
Total	**11.39**	**13.55**	**14.11**	**14.57**	**14.74**	**14.78**
Increase over 2007/08 (%)		**19%**	**24%**	**28%**	**29%**	**30%**

Source: Yarra Valley Water, *Response to Draft Expenditure Review*, February 2009.

The main drivers of Yarra Valley Water's increased IT operating expenditure are:

- additional labour costs amounting to $0.9 million in additional operating expenditure by the end of the period
- maintenance and external services in relation to the replacement of systems, resulting in $2.38 million in additional operating expenditure by the end of the regulatory period.

In relation to labour costs, Yarra Valley Water has indicated that understaffing and delays in recruiting resulted in lower actual expenditure in 2007/08 than forecast. We have reviewed Yarra Valley Water's justifications for additional staff in relation to IT and consider them reasonable with the exception of the following items:

- $0.15 million per annum from 2009/10 in relation to a 'Business Excellence Service' program.
- a provision for an additional $0.25 million per annum for 2008/09 and beyond for the use of consultants and administrative support to supplement additional staff.

The Business Excellence Program appears to be a discretionary program. If Yarra Valley Water considers the program to be beneficial to its customers, we would expect the benefits to outweigh the costs (e.g. through productivity savings) and therefore be able to be accommodated within its baseline expenditure. Further, and do not consider that a non-specific provision for the use of consultants and administrative support represents prudent and efficient expenditure. We also note that Yarra Valley Water is proposing to engage an additional 7 FTEs by the end of the period. Accordingly, we have recommended the removal of these expenditure items.

In relation to maintenance and external services, we have made the following observations about Yarra Valley Water's proposal:

- Yarra Valley Water has indicated that over 70 per cent of its systems are at EOL and in need of replacement.[37] However, the additional operating expenditure proposed by Yarra Valley Water identifies only 3 systems being replaced and an additional 11 new systems (as well as additional expenditure for miscellaneous systems related to growth)
- in relation to the replacement of existing systems, Yarra Valley Water is forecasting a reduction of $0.14 million in expenditure in 2009/10 and $0.19 million each year thereafter
- in relation to new systems, Yarra Valley Water is forecasting an increase of $1.48 million in additional expenditure 2008/09, rising to $2.19 million in 2012/13.

While we recognise that Yarra Valley Water is undertaking a number of capital investments in IT, and are not able to determine which of Yarra Valley Water's proposed systems represent discretionary expenditure, it appears as though the

[37] ESC Annexure, November 2008, p.4-82

costs relating to maintenance and external services for new systems are either overstated, the reductions in these costs for replaced systems are being understated, or both.

In particular, for maintenance and external services related to its new Customer Care and Billing (CC&B) system, Yarra Valley Water is forecasting an increase in operating expenditure of $0.77 million in 2008/09 and $0.9 million per annum thereafter, while reductions in costs amount to only $0.05 million in 2009/10 and $0.1 million per annum thereafter.

We would expect that efficiencies related to upgrading and replacing systems should go further towards reducing operating costs or provide benefits to customers. We note that Melbourne Water has proposed similar activities to Yarra Valley Water in terms of a capital management IT system enhancement and upgrade, and the phasing out of redundant systems. However, Melbourne Water has proposed significant reductions in operating costs as a result of these activities, and also through renegotiating contracts. Yarra Valley Water has not done so.

As set out in section 4, Yarra Valley Water is proposing to maintain its existing level of customer service rather than improve it over the next regulatory period. Therefore, in our revised forecast we have proposed not to include Yarra Valley Water's proposed additional operating expenditure in relation to its CC&B system, as we are not satisfied that the significant increase is justified. This results in a reduction of $0.77 million in 2008/09, $0.85 million in 2009/10 and $0.80 million per annum thereafter.

Recommendation

Table 6.35 sets out Yarra Valley Water's original proposal in relation to operating expenditure for IT, a revised forecast based on its revised proposal and our recommendations outlined above, and the net change to Yarra Valley Water's revenue requirement.

Table 6.35 Overview of recommended changes to IT operating expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Information Technology	Water Plan	14.70	15.27	15.73	15.90	15.94
	Revised forecast	12.53	12.86	13.37	13.53	13.58
	Net change	**-2.17**	**-2.41**	**-2.36**	**-2.36**	**-2.36**

6.2.10 *Land tax*

Land tax is assessed on a calendar year basis by the State Revenue Office (SRO) and is based on land value assessments for the preceding year. The taxable value of land is the municipal unimproved value (site value) provided by the relevant municipality or by the Office of the Valuer General. Under the Valuation of Land Act 1960, municipal councils are required to conduct general valuations for land in their municipality every two years.

Land Tax exemptions are provided for land used for public open space, Crown land managed by the businesses and land used for primary production.

Land tax rates have been falling in recent years. The highest rate has almost halved in the last four years - from 4 per cent in 2005 to 2.25 per cent currently. Recent changes are shown in Table 6.36 below:

Table 6.36 Land tax rates

Land tax rate	2007	2008	2009
Threshold and rate	$29,600 plus 3% for each dollar over $2.7 million	$22,480 plus 2.5% for each dollar over $2.7 million	$18,225 plus 2.25% for each dollar over $2.7 million

Source: State Revenue Office, 2008/09 budget papers

Yarra Valley Water has a significant land tax bill which it has forecast would increase over the regulatory period as shown in Table 6.37 below.

Table 6.37 Yarra Valley Water projected land tax costs ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Forecast	1.20	1.25	1.30	1.36	1.42	1.48

Our draft report expressed concern at the land tax rates used by Yarra Valley Water and its assumption about increases in the value of land. We therefore reduced the forecast of tax to be paid to be consistent with the actual land tax rate and a more reasonable CPI plus 2 per cent assumption regarding land value increases.

In response to the draft report Yarra Valley Water revised its forecast downwards, although not to the level in the draft report, as shown in Table 6.38.

Table 6.38 Yarra Valley Water projected land tax costs ($m, 2008/09)

	2008/09	2009/10	2010/11	2011/12	2012/13
Draft report	1.00	0.93	0.97	1.00	1.04
Yarra Valley Water revised forecast	1.09	1.14	1.19	1.23	1.28

Yarra Valley Water's revised calculation of land tax assumes land purchases of $1 million per annum and a 2 per cent real increase in value.

We have reviewed Yarra Valley Water's recalculated land tax projections and note that they differ from the draft report primarily due to a different assumed opening land value. We are satisfied that this opening land value is reasonable and we therefore accept Yarra Valley Water's recalculated projections and shown in Table 6.39.

Table 6.39 Overview of recommended changes to land tax expenditure ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
Land tax	Water Plan	1.25	1.30	1.36	1.42	1.48
	Revised forecast	1.09	1.14	1.19	1.23	1.28
	Net change	**-0.16**	**-0.16**	**-0.17**	**-0.19**	**-0.20**

6.2.11 Other expenditure

Guaranteed Service Level payments

Subsequent to the submission of its Water Plan, Yarra Valley Water advised it had incorrectly forecast Guaranteed Service Level (GSL) payments. Yarra Valley Water provided a new price review template that included the revised GSL payments, which are reflected in Table 6.40 below.

Table 6.40 Overview of recommended changes to GSL expenditure ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
GSL forecast	Water Plan	0.09	0.17	0.17	0.17	0.17
	Revised forecast	0.16	0.31	0.30	0.29	0.28
	Net change	**0.07**	**0.14**	**0.13**	**0.12**	**0.11**

Other items of increased expenditure

In its Water Plan Yarra Valley Water has identified additional spending on a number of projects, or spending on new projects over the forthcoming regulatory period. These are shown in Table 6.41 below.

Table 6.41 Other project expenditure ($m, 2008/09)

	2008/09	2009/10	2010/11	2011/12	2012/13
Risk tanking of trade waste customers			0.83	0.16	0.16
Australian biosolids membership	0.01	0.01	0.01		
Metropolitan Sewerage Strategy	0.32	0.21	0.21	0.05	
Water quality – improved communication			0.05	0.05	0.05
Research funding for water quality research Australia	0.16	0.16	0.16	0.16	0.16
Trade waste – HACCP22000 development and implementation		0.05	0.05	0.05	0.05
Trade waste – pricing impact assessment		0.12	0.14	0.07	
Contribution to WSAA membership	0.06	0.07	0.07	0.07	0.07
Tariff reform			0.17	0.17	
Financial reporting – valuing assets at fair value		0.26	0.26	0.26	0.26
Total	**0.55**	**0.88**	**1.95**	**1.04**	**0.75**

The draft report indicated that while we did not have any objections to the additional expenditure per se, that in many cases the expenditure either:

- did not represent 'new obligations' and/or
- could be undertaken using existing resources and in accordance with the usual 'swings and roundabouts' of a normal expenditure cycle. (Businesses will have a number of expenditure items that will vary from year to year depending upon circumstances at the time. There will be some projects that were undertaken in the base year and will not be required in future years and which will offset those identified increases) and/or
- represented non-operational expenditure that could be deferred, postponed or eliminated entirely given the current economic climate and proposed level of price increases.

In response to the draft report Yarra Valley Water provided further information to support each of the projects. It also suggested that removing these projects from the forecast would not be consistent with the requirements of the WIRO which require prices to provide for a sustainable revenue stream and to allow the regulated entity to recover its efficient operational, maintenance and administrative costs.

While we note Yarra Valley Water's arguments we believe that the base level (2007/08) expenditure provided should provide sufficient funding to undertake the activities proposed. While expenditure on some items will be required at above 2007/08 levels, it is equally certain that some items incurred in 2007/08 will require less. None of the items proposed are sufficiently material or unique in nature to suggest that they cannot be funded consistent with Yarra Valley Water's 2007/08 base allowance.

Further, without wishing to comment in detail on each cost increase proposed by Yarra Valley Water, we would make the observation that:

- some of the increased membership and research expenditure could be deferred with no impact on Yarra Valley Water's ability to efficiently deliver services in the short to medium term
- it is not clear that AASB 1049 will in fact require a costly asset revaluation as we understand that a cash flow analysis approach to asset valuation may be sufficient to meet the new standards. If so the cost will be substantially less than that forecast by Yarra Valley Water.

Table 6.42 Reduction in other expenditure ($m, 2008/09)

	2008/09	2009/10	2010/11	2011/12	2012/13
Other project expenditure	-0.55	-0.88	-1.95	-1.04	-0.75

6.2.12 Not prescribed versus prescribed

Yarra Valley Water receives a payment from Melbourne Water to undertake billing for parks and drainage services undertaken on behalf of Melbourne Water and Parks Victoria. The revenue and expenditure associated with this service are shown in Table 6.43 below.

On the basis of Yarra Valley Water's figures, it recorded a profit margin of 76 per cent on this activity in 2007/08. This margin is expected to increase to 92 per cent by 2012/13.

Table 6.43 Revenue and expenditure associated with billing for parks and drainage services ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Revenue	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Operating expenditure	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Difference	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

The key issue with the costs and revenue figures for this activity relates to the allocation of costs. A higher allocation of costs will reduce the cost pool for regulated services, and hence reduce water and wastewater charges. A lower allocation will increase water and wastewater charges.

Given the very large forecast profits being made on this service (which we note are slightly higher than the profits forecast in the current regulatory period), it will be the case that either:

- Yarra Valley Water is under-allocating costs to this activity, or
- Melbourne Water is paying a price for the service that is well in excess of costs.

On balance a combination of the above factors is likely. We note that Yarra Valley Water was asked to explain this profit and observed that:

- this part of its business is not ring fenced and is included as part of its general billing and collection processes
- it would prefer to have some rules to determine this cost properly
- the forecast expenditure was determined by taking the ESC approved 2005 expenditure and inflating to 08/09 prices (it has not been adjusted for customer numbers)
- the provision of this service has a very low marginal cost and it is probably not costing nearly $[redacted] million to provide the service each year.

For the purposes of the final report, and noting the large price rises for water and wastewater services proposed by Yarra Valley Water, we have reallocated the amount of expenditure transferred to non-prescribed expenditure such that the profit margin each year of the next regulatory period is equal to [redacted] per cent, which we believe is a reasonable return. This adjustment amounts to $[redacted] million over the period.

In addition, given the uncertainty and inconsistency of approach to estimating the costs of this service that seems to exist amongst the retailers, we suggest that the revenue and costs associated with this service this might be an area for further review by the ESC – either through the issuance of cost allocation guidelines or possibly at the next waterways review.

Recommendation

Table 6.44 shows our recommended re-allocation of expenditure from prescribed to non-prescribed.

Table 6.44 Overview of recommended changes to prescribed expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Re-allocation from prescribed to not prescribed	Water Plan	0	1.55	1.60	1.65	1.71
	Revised forecast	0	0	0	0	0
	Net change	0	-1.55	-1.60	-1.65	-1.71

6.3 *Conclusions and recommendations*

For the reasons set out above, we recommend that the changes shown in Table 6.45 be made to Yarra Valley Water's operating expenditure forecasts:

Table 6.45 Overview of recommended changes to operating expenditure ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Total Water Plan operating expenditure	272.63	310.69	347.8	400.21	462.55	536.7
Recommended adjustments						
VCEC savings		0.00	-1.00	-1.00	-0.50	0.00
Labour costs		1.09	2.55	2.81	3.06	2.03
Electricity		0.00	0.00	0.00	-1.00	-1.12
Waste management		0.00	-0.06	-0.06	-0.14	-0.14
Chemicals		0.00	-0.12	-0.12	-0.12	-0.15
Billing and Collection		-0.47	-0.91	-1.39	-1.64	-1.79
Water conservation		2.19	2.09	0.00	-0.23	-0.46
Information Technology		-2.17	-2.41	-2.36	-2.36	-2.36
Land Tax		-0.16	-0.16	-0.17	-0.19	-0.20
GSL adjustment		0.07	0.14	0.13	0.12	0.11
Operations and maintenance		-0.37	-0.27	-0.46	-0.67	-0.87
Minor items		-0.55	-0.88	-1.95	-1.04	-0.75
Re-allocation from prescribed to not prescribed		0.00	-1.55	-1.60	-1.65	-1.71
Total adjustments		**-0.38**	**-2.58**	**-6.18**	**-6.35**	**-7.40**
Total recommended operating expenditure		**310.31**	**345.22**	**394.03**	**456.20**	**529.30**

7 Capital Expenditure

7.1 Historical and forecast capital expenditure

7.1.1 Overview of outcomes of 2005 determination

In the 2005 determination, the ESC approved capital expenditure for Yarra Valley Water totalling $362.9 million (in 2004 dollars) for the three years to 2007/08. Converting to 2009 dollars, Yarra Valley Water's approved capital expenditure was $416.6 million. Over the same three year period, Yarra Valley Water has actually incurred $512.8 million in capital expenditure, with higher expenditure in each year. The approved and actual expenditure is shown in Table 7.1

Table 7.1 Actual capital expenditure and variance to 2005 determination ($m, 2008/09)

Business	2005/06	2006/07	2007/08	Total
2005 determination	136.9	134.7	145.0	**416.6**
Actual expenditure	169.8	178.6	164.4	**512.8**
Variance	**32.9**	**44.0**	**19.4**	**96.2**

It is important to note that the impact on businesses which incur capital expenditure greater than forecast is minimised to some extent by either the driver for the increased expenditure, or the regulatory system. That is:

- if capital expenditure exceeds forecast because of higher than expected growth, the higher expenditure will be offset by higher revenue from additional customers, or
- at the end of the regulatory period, actual capital expenditure is rolled into the regulated asset base, on which businesses receive a return on and return of capital.

Therefore, the financial impact on the business is the short term cost of funds between incurring the additional expenditure and having it rolled into the regulated asset base, less any additional revenue from higher than forecast growth.

7.1.2 *Overview of forecast*

Proposed capital expenditure

Table 7.2 shows Yarra Valley Water's proposed capital expenditure for the next regulatory period.

Table 7.2 Proposed capital expenditure in Water Plan ($m, 2008-09)

Business	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water	62.77	71.22	84.88	67.41	59.33	65.23
Wastewater	97.50	159.24	170.76	158.83	144.55	108.25
Recycled Water	4.13	4.00	21.29	4.74	11.35	15.94
Total Expenditure[38]	**164.40**	**234.45**	**276.94**	**230.98**	**215.23**	**189.42**

Source: Yarra Valley Template to ESC

Actual expenditure to 31 December 2008

Yarra Valley Water has provided details of expenditure to 31 December 2008 and revisions to forecasts to 30 June 2009. Yarra Valley Water has spent about $72.187 million of their annual budget of $175.26 million representing about 40 per cent of the annual budget. Yarra Valley Water has stated that this figure is consistent with historical performance and that they expect to achieve their revised annual budget in the six months to 30 June 2008.

The revised annual budget incorporates the deferral of a total of $59.2 million (made up of $73 million in deferrals and $13.8 million in new expenditure) from 2008/09 to the next regulatory period. In addition, Yarra Valley Water has deferred a further $55.7 million from the next regulatory period into the future regulatory period commencing 1 July 2013. Details of these deferrals are presented and discussed in the following sections.

Analysis of deferred projects from 2008/09

Yarra Valley Water provided details on the proposed deferral of $59.2 million from 2008/09 to the next regulatory period 2009/10 to 2012/13 and these are presented in Table 7.3 following.

[38] This figure excludes government and customer contributions.

Table 7.3 Yarra Valley Water – Proposed Expenditure Deferrals from 2008/09 to the 2009/10 to 2012/13 Regulatory Period

Projects	2008-09	2009-10	2010-11	2011-12	2012-13
Northern Sewer Project	-14.0[39]		14.0		
Epping Craigieburn Project	-7.1		7.1		
Mitcham Facilities Maintenance - Carpet Replacement project delayed	-0.5	0.5			
Craigieburn Recycled Water Scheme delay	-2.1	2.1			
Mernda Link Main delay	-2.7	2.7			
Hazelwynde RWTP delay by development	-1.2	1.2			
University Hill BS lower price than budgeted	-0.5				
Developer Reimbursements	-6.8	3.4	3.4		
Other Growth Works	-9.7	4.8	4.9		
CATS Design delays	-7.0	1.2			
Wallan STP Upgrade design delays	-1.0	1.5			
Cockatoo Backlog design and customer delays	-3.0	3.0			
Cumberland Rd water main refurbishment lower than budgeted	-0.5				
PMA's lower cost than budgeted	-1.0				
Preston BSS1 (lower) lower cost than budgeted	-1.0	1.0			
Emergency Storage Upgrades design delays	-5.0	9.0			
COMPASS Program and CC&B project	13.8	7.0[40]			
Water main renewals	-4.0	1.0	1.0	2.0	
Sewer main renewals	-6.0	2.0	2.0	2.0	
Other	-1.8	1.8			
Total Expenditure[41]	**-61.1**	**42.2**	**32.4**	**4**	**0**

[39] Yarra Valley Water identified an error in the original figure of $12.1 million

[40] Additional $7.0 million added – refer to analysis of COMPASS and CC&B project below

[41] This figure excludes government and customer contributions. Original total for 2009/10 ($39.2 million) did not match due to an error in the calculation.

In general, the proposed deferrals in 2008/09 have corresponding allocations in the next regulatory period, however we identified a number of specific projects in Table 7.3 where the proposed expenditure had increased, that is, where the deferred amount from 2008/09 was less than the total of expenditure included in the next regulatory period 2009/10 to 2012/13. Yarra Valley Water provided further details on these projects, as outlined below.

- Wallan STP Upgrade – increases from $1.0 million to $1.5 million – updated estimate is based on actual tendered construction prices including a small change of scope to build a new pump station rather than upgrade it and higher than expected price for lagoon components. We accept these changes and note that since the project is now tendered, the final construction cost should be very close to the $1.5 million figure nominated.
- Emergency Storage Upgrades – increases from $5.0 million to $9.0 million – Yarra Valley Water stated that it has re-profiled the expenditure for this item and further stated that the deferral was a result of design delays. No further details have been provided detailing the need for this additional expenditure, especially given the large transfer of expenditure from 2008/09 to 2009/10. We see no reason why this expenditure should be increased beyond the amount deferred and recommend the reduction of the allowable expenditure to the original $5.0 million deferred from 2008/09.
- COMPASS Program and the CC&B Project - $13 million of new expenditure – this item represents the expenditure for a collection of projects related to, but not a direct part of, the replacement of Yarra Valley Water's Billing System. The replacement of the Billing System was planned for completion in 2008/09 however this has been delayed to 2009/10. Forecast expenditure for the Billing System replacement in 2008/09 is $9.6 million while $4.2 million is forecast for the COMPASS suite of projects, giving a total in 2008/09 of $13.8 million. This leaves $7.0 million of the $11.2 million in total expenditure forecast for the COMPASS suite of projects deferred into 2009/10. We understand the need for a new billing system but can not understand why no allowance was made previously for the suite of projects incorporated into COMPASS.
- Delays in the rate of construction on the Northern Sewerage Project resulted in the capital expenditure profile being adjusted to defer funds from 2008/09 into the next regulatory period. ($14 million)
- Completion of Stage 1 of the Epping Craigieburn Sewerage Project was deferred for one year due to: ($7.1 million)
    - slower than expected development of the Melbourne Markets site and surrounding industrial/commercial land where the nominated developer withdrew from the project.

- development of a temporary sewerage servicing strategy which enables the lower than expected sewerage flows to be managed in the short term.

Analysis of deferred projects from the 2009/10 to 2012/13 regulatory period

Yarra Valley Water provided details on the proposed deferral of $55.7 million from the next regulatory period 2009/10 to 2012/13 to the future regulatory period commencing from 1 July 2013. Brief details on these deferrals are presented in the following points however no other, more specific, details were provided by Yarra Valley Water.

- Capital expenditure relating to water and sewerage growth asset has been re-profiled to take into account the following issues:
  - the unforeseen economic conditions which have resulted in reductions to development activity, and as such a delayed requirement for the new major water and sewerage infrastructure
  - updated information regarding the likely timing of reimbursements for key infrastructure constructed by developers.
  - updated project cost estimates for current projects, where available.

Reforecast of capital expenditure for 2009/10 – 2012/13

Yarra Valley Water provided an updated capital expenditure forecast in their response to the draft report, indicating that the revision took the following issues below into account. The revised forecast is shown in Table XX.

- carryovers from committed projects based on latest 2008/09 expenditure
- comments made by the auditors in their draft particularly the potential to defer the start of Epping Craigieburn sewer project
- activity level in the development industry
- opportunities to defer commencement of projects or extend projects and over a longer period of time
- likely cash flow profile from developer reimbursement work
- increased assets to be provided by the Company as a result of the clarification by the Commission of what defines a shared asset
- the firming up of cost estimates as projects move between functional design, detailed design, construction tender and as construction progresses.

Table 7.4 Yarra Valley Water Capital Expenditure Reforecast (Feb 2009)

Yarra Valley Water	2008/09	2009/10	2010/11	2011/12	2012/13	TOTALS
Total Water Plan capital expenditure	**234.45**	**276.94**	**230.98**	**215.23**	**189.42**	**912.57**
Water Plan adjustment for shared assets (December 2008)	**253.34**	**296.59**	**237.72**	**220.04**	**205.12**	**959.47**
YVW February 2009 forecast	**175.26**	**269.19**	**252.47**	**226.85**	**233.37**	**981.88**

7.2 Ability to deliver capital program

Delivery of this program will pose a number of challenges to Yarra Valley Water. There is a large capital works program in the water industry across the country. In addition to the $2.5 billion that will be spent on the capital programs of water businesses in rural and regional Victoria in the next regulatory period, a further $3.6 billion will be spent by Melbourne metropolitan water businesses. Also, the Victorian Desalination project is to be delivered by the end of 2011. Water businesses throughout Australia, such as those in urban New South Wales and Western Australia, are also proposing significant capital expenditure in the period to 2012-13.

This will place pressure on Yarra Valley Water's program, however this pressure is likely to be lower than might have been forecast 12 months ago due to:

- a rapidly slowing economy with reduced demand for construction materials and labour
- a number of significant mining projects being cancelled or delayed
- higher levels of unemployment forecast across the economy

The above economy-wide factors are likely to ensure that there is lower cost pressure on capital expenditure, however we believe that due to the large water sector capital program there remains a risk of projects being delayed as the realignment of resources from other sectors to the water sector may take some time to occur.

The careful use of advanced procurement strategies such as alliances and long term bundled contracts will assist to address these risks. The contracts for these arrangements must be strict enough to protect the businesses from significant expenditure increases but flexible enough to allow the businesses to take advantage of increased competition in the market and decreased materials costs.

7.3 Capital escalation

As noted in section 5.2, Yarra Valley Water has not included any overall escalation factors in its capital expenditure forecast. We note that some specific unit rates identified in the analysis of the top 10 projects have been escalated as a result of increases in costs such as plastics and steel, however these escalations are specific to the project and have been assessed already.

7.4 Yarra Valley Water's top 10 capital projects

The following section reviews the top ten capital projects contained in Yarra Valley Water's proposed capital program.

7.4.1 *Northern Sewerage Project*

Key References: YVW/MW, 2006, "*Northern Sewerage Project, Submission for Projects in Excess of $5 million*" (Revised) December 2006, Yarra Valley Water and Melbourne Water

Project Overview:

The Northern Sewerage Project (NSP) is designed to alleviate sewage spills at up to 25 of Yarra Valley Water's and Melbourne Water's non-compliant or worst performing emergency relief structures in order to meet the 1 in 5-year flow containment standard identified in Schedule F6 (Waters of Port Philip Bay) and Schedule F7 (Waters of the Yarra Catchment) of the State Environment Protection Policy (Waters of Victoria). The project is a major component of the Northern Suburbs Sewerage Strategy, which is being implemented in conjunction with Melbourne Water. The project is currently under construction. The NSP represents Stage 2 of the strategy with Melbourne Water undertaking Stage 1.

The Northern Sewerage Project is also specifically identified in the Yarra River Action Plan, which was announced by the Minister for Water in February 2006, as a priority project to achieve the Government's target to protect and improve the health and amenity of the Yarra River.

Project Expenditure

The proposed capital expenditure for the NSP has been adjusted a number of times since the project was first identified. The current profile of expenditure is shown in Table 7.5 while the history of expenditure estimates is presented in Table 7.6 along with the relevant reference for the values shown.

For the purposes of this review, we considered only the proposed expenditure included in the Water Plan templates, that is, a total of $198.9 million. While no supporting information has been provided for updated figures provided on 14 January 2009, the increase in costs is largely offset by the deferral of $14 million from 2008/2009 into the next regulatory period and a further deferral of

$2.03 million from 2009/2010 into 2011/2012. We have included a further updated actual and forecast expenditure for the project provided by Yarra Valley Water in February 2009 for reference.

Table 7.5 Northern Sewerage Project Proposed expenditure profile ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	47.0	61.3	26.8	24.7	0.2	**113.0**
Operating expenditure				0.03	0.07	**0.1**

Table 7.6 Northern Sewerage Project Historical Expenditure Estimates ($m, 2008/09)

Historical Expenditure Estimates ($m 2008/09)	Pre-2005	2005-2008	2008-2013	Total
YVW Updated Profile at end of Feb 2009		38.9	164.8	**203.7**
Updated Spreadsheet 14 Jan 2009		38.9	162.4	**201.3**
Water Plan Annexure Part 4 (November 2008)		38.9[42]	160.0	**198.9**
NSP Submission to DTF (December 2006)	0.3	60.2	170.8	**231.4**
2005-2008 Water Plan (1 Sept 2004)				**41.3**

Note: Figures for 2008-2013 include 2008/09 forecast expenditure. Updated profile figures for 2008/09 include actual expenditure to 31 December 2008.

We note that there was a significant increase in expenditure after the 2005-2008 Water Plan. Information provided by Yarra Valley Water indicates that this increase was a result of "further consideration of project risks and the finalisation of key project documents including the Detailed Design, Contract, Technical Specification, and the Geotechnical Baseline Report"[43]. Yarra Valley Water further explained that "tunnelling is a high risk construction technique and cost estimates prepared without the benefit of detailed investigation can never be considered reliable."

[42] Actual expenditure for 2005-2008 as reported by YVW on 14 January 2009

[43] YVW/MW, 2006

No proposed operating expenditure for the NSP was included in the 2009-13 Water Plan templates submitted by Yarra Valley Water, however we note the inclusion of operating expenditure related to the NSP in the Annexure Part 4 to the Water Plan of $0.03 million and $0.07 million in 2011/12 and 2012/13 respectively. Given that capital expenditure is still forecast for 2012/13, we would not expect operating expenditure to occur until early 2013. Any operating expenditure incurred before this time should be capitalised.

Project Delivery

The NSP has been in progress for some time and Table 7.7 below outlines some of the milestones identified for this project.

Table 7.7 Northern Sewerage Project Milestones

Date	Description of Works
1999	Strategic planning commences – Northern Suburbs Sewerage Strategy prepared
2000-2002	Strategies presented to Board
2004	Melbourne Water/Yarra Valley Water working group review preferred option and identify augmentation options – Northern Sewerage Project identified
Feb 2006	Gateway 2 (Business Case Review) undertaken
June 2006	Business case submission
Dec 2006	Business Case re-submission
Early 2007	Gateway 4 – Tender Decision review scheduled to be undertaken
Jan 2007	Final design cost estimate from Contractor
July 2007	Proposed commencement date for construction stage 2
Feb 2008	Actual commencement date for construction stage 2[44]
June 2011	EPA commitment to contain 1 in 5-year flows, completion commitment to two key stakeholders, and critical financial assumption - commencement of depreciation
Dec 2011	Scheduled completion date (critical success factor)

The proposed expenditure included in the Water Plan indicates that project completion will occur in the 2012/2013 financial year. There are potential risks of further delays to the project given that approximately 25 per cent of the forecast expenditure for 2008/2009 has been deferred to later years.

[44] Water Plan Annexure Part 1, page 1-17

Findings

Our review of the Northern Sewerage Project indicated that the project has undergone a number of changes since planning first commenced in 1999. Most significantly, there was a major change to the project between the 2005-2008 Water Plan and the December 2006 Business Case where the forecast capital expenditure increased from $41.3 million to $231.4 million (a 460 per cent increase). We accept Yarra Valley Water's explanation that tunnelling is a high risk construction technique and cost estimates prepared without the benefit of detailed investigation can never be considered reliable.

We note, however, that both the proposed expenditure in the Water Plan and the updated profile provided in February 2009, are less than the expenditure approved in the December 2006 Business Case and we would expect that the final capital cost remains under this approved figure.

Yarra Valley Water has not provided any justification for the updated expenditure figures for the 2009-2013 period provided on 14 January 2009, and as such these have not been taken into account. The proposed capital expenditure identified in the Water Plan has been assessed for the purposes of this review. We have noted where Yarra Valley Water has provided updated cost estimates based on the on-going review of costs and construction risks.

The proposed operating expenditure profile has been deferred one year to account for the delay in commencing the project.

We have some concerns over the deliverability of the project within the current scheduled program due to delays in expenditure in 2008/09; a deferment of 25 per cent of the proposed expenditure for this year. We note, however, that Yarra Valley Water's stage 2 works are not on the critical path for the overall project but are dependent on Melbourne Water's stage 1 works. Given the project still has approximately four years until completion, we expect that Yarra Valley Water should still be able to deliver the project within the current scheduled program and within the approved budget.

7.4.2 *Epping / Craigieburn – Stage 1 & Stage 2 (Section 1)*

Key References: YVW, 2008, "Epping Craigieburn Sewerage Project – Stage 1 and Stage 2 (Epping Branch Sewer Section 1) Tunnel Sewer – Draft Business Case" 14 August 2008, Yarra Valley Water.

Project Overview

This project is part of the Epping Craigieburn Sewerage Strategy which, along with the Northern Suburbs Sewerage Strategy, is one the key sewerage strategies for servicing development in Melbourne's north. The primary driver for this project is growth in the Hume and Epping growth corridors; predominantly for industrial developments such as the Cooper Street Employment Precinct and the Melbourne Wholesale Fruit and Vegetable Market.

This project covers Stage 1 and Stage 2 (Section 1) of the overall strategy.

Project Expenditure

The proposed capital expenditure for this project is shown in Table 7.8 below.

Table 7.8 Epping Craigieburn Stage 1 & Stage 2 (Section 1) proposed expenditure ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	4.2	15.6	41.7	41.7	7.3	**106.3**
Operating expenditure					0.08	**0.08**

The expenditure profile included in the Water Plan differs from the profile included in the August 2008 draft Business Case. The draft Business Case assumed a total capital expenditure of $115.3 million with the majority of expenditure in 2009/10 and 2010/11. The proposed expenditure included in the Water Plan, however, has been smoothed out over the regulatory period with the total capital expenditure reduced. Yarra Valley Water indicated that the draft Business Case included the most up-to-date project estimates available at the time.

The information provided by Yarra Valley Water contains multiple conflicting capital cost estimates. In relation to historical actual expenditure for 2007/08 and forecasts for 2008/09, the presentation "2009/10 – 2012/13 Water Plan – Servicing Growth – Presentation for ESC Audit – December 2008" lists, on slide 4 a total actual expenditure for the Epping Craigieburn Sewerage Project of $1.62 million, which when converted from $2007/08 to $2008/09 becomes $1.69 million. In the same presentation, on slide 35, the total actual expenditure for the project is listed as $2.5 million which converts to $2.6 million in $2008/09.

In relation to the proposed capital expenditure, the information provided lists the following capital expenditure forecasts:

- page 59 of the Water Plan lists a capital expenditure requirement of $106.3 million, which is also supported by the ESC template,
- page 4-48 of the Annexure Part 4 lists a capital expenditure of both $106.3 million and $105.83 million
- page 13 of the August 2008 draft Business Case identifies a capital cost estimate of $115.8 million while page 78 of the document identifies a funding requirement of $102 million

We are unable to identify an approved capital cost estimate as we have not been provided with the latest project business case. Yarra Valley Water has indicated that the final business case approval is not planned to occur until final designs are completed and the capital expenditure requirements are fully assessed. Yarra Valley Water provided a preliminary design report for the project dated 25 February 2009 however this report provided no updates to or more details on proposed capital expenditure. Further design work is required for this project and a detailed design is expected to follow on immediately after approval of the preliminary design report.

Yarra Valley Water provided updated capital cost estimates in their response to our draft report and these are shown in Table 7.9 below.

Table 7.9 Epping Craigieburn Sewer Project - Revisions to Capital Expenditure 2008/09 to 2012/13

Proposed Expenditure Profile ($m 2008/09)		2008/09	2009/10	2010/11	2011/12	2012/13	Total
Stage 1 & Stage 2 (Section 1)	Water Plan	4.2	15.6	41.7	41.7	7.3	**106.3**
	Halcrow Proposed	0	0	15.6	41.7	41.7	**99.0**
	YVW Update	1.3	2.8	15.6	41.7	41.7	**101.8**

Only a small amount (about $8,000) of operating expenditure has been identified in 2012/13 and although there is still capital expenditure in 2012/13 it is not likely to cover the whole year. As such it is not unreasonable to expect some operating expenditure in the latter part of this financial year.

Project Delivery

The original draft Business Case supplied by Yarra Valley Water was prepared in August 2008 and it identified the following key milestone dates, as shown in Table 7.10

Table 7.10 Epping Craigieburn Stage 1 & Stage 2 (Section 1) project milestones

Date	Description of Works
Nov 2008	Business Case approval
Mar 2009	Complete detailed design and all approvals
Sept 2009	Construction and commissioning
Dec 2011	Scheduled completion of project

While the scheduled completion date is December 2011, the proposed capital expenditure for this project extends into 2012/13. It is unclear whether there is any risk of further delays to this project as we have not been provided with any current progress reports on this project beyond the draft Business Case.

The preliminary design report provided by Yarra Valley Water does not provide any updates to the proposed delivery schedule of the project. Reference is made, however, to the detailed design process which is expected to follow on immediately after approval of the preliminary design by Yarra Valley Water.

Yarra Valley Water indicated that planning applications for the overall project have been submitted to the relevant councils for approval. Planning approval has been received from one council subject to a set of permit conditions, however Yarra Valley Water has indicated that the permit conditions are fairly standard and are within their expectations. Planning approval from the second council has been verbally given with a formal response expected to be provided before the end of March 2009. It is expected that the likely permit conditions will be similar to the first planning approval.

Yarra Valley Water's most recent program was based on the following milestones:

- February / March 2009 – planning approvals
- March / April 2009 – complete detailed design and final cost estimates, update and submit final Business Case
- April / May 2009 – proceed to construction tenders
- September / October 2009 – construction commences

We note that planning approvals are only just being received, the next stage of the design process is yet to commence and the final Business Case is yet to be completed. We have some concerns regarding whether this work could be done prior to April / May when the construction tendering process commences.

As a result of the recommendations in our Draft Report, which are further supported by the information and discussion above, Yarra Valley Water has proposed to adjust the project program, that is:

- 2009/2010 – Preliminary work and site establishment
- First half 2010 – proceed to construction tender
- 2010/2011 – construction commences

Findings

Our review of the key supporting information provided for this project, in general, has not identified any major issues. However we note that the key information supplied by Yarra Valley Water was only a draft Business Case dated August 2008.

We noted multiple discrepancies in the proposed capital expenditure for the project. This level of uncertainty within the supporting information provided by Yarra Valley Water does give us some concerns over the level of quality assurance and cross checking of figures undertaken prior to submitting the supporting information. We expect that the final Business Case will provide figures that are consistent with the submitted Water Plan and the ESC template.

We were not comfortable making a recommendation on the level of proposed capital expenditure or the proposed timing of the project based on the information previously provided by Yarra Valley Water. We could not establish that the project was sufficiently advanced to achieve the proposed capital expenditure and as such we proposed to defer the capital expenditure associated with this project by one year pending the receipt of an updated and approved Business Case and design documentation outlining the final capital expenditure figures. Deferring the capital expenditure results in a delay to the completion of the project and this in turn requires a deferment of the proposed operating expenditure.

Yarra Valley Water provided details of updated cost estimates and project timelines in their response to our Draft Report. Yarra Valley Water also provided the project's latest design report, a preliminary design report, however this document did not provide any further update to or confirmation of the capital cost or the project timing.

Yarra Valley Water has agreed to our proposal to defer the project by one year. The additional information provided by Yarra Valley Water supported our recommendation to defer the project by one year, by detailing very tight timeframes that we believed would not likely be met.

We have reviewed Yarra Valley Water's revised project timeline and their revised capital expenditure profile and we are generally satisfied with the proposed adjustments. The impact the proposed adjustment on the project expenditure is shown in Table 7.11.

Table 7.11 Epping Craigieburn Stage 1 & Stage 2 (Section 1) recommended capital expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	4.2	15.6	41.7	41.7	7.3	**106.3**
YVW updated forecast	1.3	2.8	15.6	41.7	41.7	**101.8**
Revised forecast	1.3	2.8	15.6	41.7	41.7	**101.8**
Adjustment	-2.9	-12.8	-26.1	0.0	+34.4	**-4.5**
Proposed operating expenditure					0.1	**0.1**
Adjusted operating expenditure					0.0	**0.0**
Adjustment					-0.1	**-0.1**

Note: Figures may not add due to rounding

7.4.3 Epping / Craigieburn – Stage 2 (Sections 2 & 3)

Key References: YVW, 2008, "Epping Craigieburn Sewerage Strategy – Epping Branch Sewer Sections 2 & 3 – Business Case" May 2008, Yarra Valley Water.

Project Overview

This project is also part of the Epping Craigieburn Sewerage Strategy and has the same primary drivers as the previous project, that is, growth in the Hume and Epping growth corridors, predominantly for industrial developments. The project also allows the diversion of sewage from the northern suburbs to the metropolitan sewerage system.

This project covers Stage 2 (Sections 2 and 3) of the overall strategy.

Project Expenditure

The proposed expenditure for this project is shown in Table 7.12 below.

Table 7.12 Epping / Craigieburn – Stage 2 (Sections 2 & 3) proposed expenditure ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	3.1	4.8	8.0	5.2	0.4	**18.5**
Operating expenditure[45]						

Note: Figures may not add due to rounding

The proposed expenditure shown above corresponds well with a May 2008 Business Case provided by Yarra Valley Water.

Yarra Valley Water provided updated capital cost estimates in their response to our draft report and these are shown in Table 7.13 below.

Table 7.13 Epping Craigieburn Sewer Project - Revisions to Capital Expenditure 2008/09 to 2012/13

Proposed Expenditure Profile ($m 2008/09)		2008/09	2009/10	2010/11	2011/12	2012/13	Total
Stage 2 (Sections 3 & 4)	Water Plan	3.1	4.8	8.0	5.2	0.4	**18.5**
	Halcrow Proposed	0	0	4.8	8.0	5.2	**18.0**
	YVW Update	1.3	8.6	0.9	3.4	7.3	**20.2**

Yarra Valley Water has increased allowances for Stage 2 works to allow for the likely final cost of Section 2, the construction contract for which was awarded in March 2009, and the latest cost estimates for Section 3. The pipe diameter for Section 2 was increased at a cost of $0.3 million to allow for potential increases in flow due to the expansion of the Urban Growth Boundary.

Project Delivery

The proposed project delivery timeframe outlined in the May 2008 Business Case indicated that the project would be completed at the end of 2009, subject to commencement in late 2008. However, the expenditure profile included in Annexure 4 to the Water Plan, prepared in November 2008, shows a somewhat different story, with expenditure smoothed over the entire regulatory period including 2008/09.

[45] No information was provided on operating expenditure

While this smoothing of expenditure will result in a less significant impact on water prices, it is unclear whether this is the primary reason for the adjustment in the project program. The May 2008 Business Case provided includes only the scheduled commencement and completion dates.

Yarra Valley Water has provided a brief update on the progress of this project indicating that the project has been tendered and a contract was awarded in March 2009. In addition, an updated capital expenditure profile has been provided showing expenditure across the next regulatory period.

Findings

This project is part of an overall strategy for servicing the northern suburbs of Melbourne catering for new industrial development.

We note that the proposed capital expenditure in the Water Plan matches the expenditure outlined in the May 2008 Business Case. We note some serious discrepancies between the May 2008 Business Case and the November 2008 Water Plan in relation to the timing of expenditure.

Yarra Valley Water has provided an update on the progress of the project, indicating that a construction contract was awarded in March 2009. Yarra Valley Water also provided updated cost estimates reflecting the commencement of construction. We have assessed the proposed adjustments to capital expenditure and the timing of the project and in general we have no major concerns. We note the increases in capital expenditure relate to pipe upsizing for Section 2 and the latest cost estimates for Section 3.

The adjustments proposed by Yarra Valley Water are shown in Table 7.14.

Table 7.14 Epping / Craigieburn – Stage 2 (Sections 2 & 3) proposed expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	3.1	4.8	8.0	5.2	0.4	**18.5**
YVW Updated forecast	1.3	8.6	0.9	3.4	7.3	**20.2**
Revised forecast	1.3	8.6	0.9	3.4	7.3	**20.2**
Adjustment	-1.8	+3.8	-7.1	-1.8	+6.9	**+1.7**

7.4.4 *Sewer Reticulation Renewals Program*

Key Reference: YVW, 2008, "ESC Annexure Part 4: Revenue Requirement – Water Plan 2009/10 – 2012/13" November 2008, Yarra Valley Water.

Project Overview

Yarra Valley Water's sewer reticulation pipeline renewals program is designed to reduce the rate of failure in over 8,700 kilometres of sewer mains less than 300 millimetres in diameter. Failure of the reticulation mains may result in sewage surcharges and, potentially, sewage spills to the environment.

The drivers for this program are the following service standards:[46]

- Sewage blockages (per 100 kilometres)
- Customers receiving 4 sewer blocks in the year
- Customers receiving 5 sewer blocks in the year
- Customers receiving 5 or [more] blocks in 5 years

Yarra Valley Water's stated objective is to "*target repeat service failures with the aim of not having any customer with three or more sewer interruption* [sic] *per annum*".[47]

Yarra Valley Water is proposing to maintain its historical performance levels by increasing the length of reticulation mains renewed from 30 kilometres to 45 kilometres. The proposed increase has been identified through predictive modelling techniques.

Project Expenditure

Proposed expenditure on the sewer reticulation main renewals program is shown in Table 7.15 below. This expenditure represents a significant (57 per cent) increase over historical levels, which are shown in Table 7.16 below.

Yarra Valley Water proposes an increase in the expenditure allocated to this renewals program in order to maintain service levels at historical average standards, that is, at a level of 45.2 blockages per 100 km[48]. This target level conflicts slightly with Part 4 of the Annexure which states that the target to be maintained is the June 2008 performance of 46.7 blockages per 100 km[49].

[46] Water Plan Annexure Part 4, page 4-59

[47] Ibid

[48] Water Plan Annexure Part 2, page 2-66

[49] Water Plan Annexure Part 4, page 4-60

Table 7.15 Sewer Reticulation Renewals proposed capital expenditure 2009/10 to 2012/13 ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	7.8	11.5	11.5	11.5	11.5	**45.9**

Table 7.16 Sewer Reticulation Renewals actual capital expenditure 2005/06 to 2007/08 ($m, 2008/09)

Actual Expenditure ($m 2008/09)	2005/06	2006/07	2007/08	Total
Water Plan Annexure Part 4 page 4-62 (November 2008)	3.8	6.1	7.3	**17.2**

The proposed expenditure for renewals is based on a unit rate of around $255/m (180,000m @ $45,870,000). This unit rate is a significant increase on the average rate over the 2005-2008 period, which was $172.5/m (or $239/m including the cost of Interfits) and even Yarra Valley Water's stated unit rate of $234/m[50] (which also includes the cost of Interfits).

Yarra Valley Water has identified an error in the Annexure Part 4 of the Water Plan, where the unit rates quoted in the discussion above were provided in $ 2007/08 rather than $ 2008/09. The impact of this adjustment increases Yarra Valley Water's stated unit rate from the quoted $234/m to $244/m.

Yarra Valley Water has consulted with its current sewer reticulation renewals contractor to assess the potential increases in unit rates that might be expected when the renewals contract is re-tendered in mid-2009. Preliminary expectations are that the rate would increase around 10 per cent. Yarra Valley Water stated that the unit rate for renewals had been held relatively constant since July 2005, when the renewals contract commenced.

In determining the unit rate for proposed sewer reticulation renewals over the next regulatory period, Yarra Valley Water indicated that they had only assumed a 5 per cent increase in the rate, that is, from $244/m to $255/m.

[50] Water Plan Annexure Part 4, pages 4-62 and 4-61 respectively.

We reviewed the terms of Yarra Valley Water's current sewer reticulation renewals contract and while there is some flexibility in the contract terms to adjust rates, generally the adjustments would be a result of CPI changes or increases to materials costs. These clauses are more likely to prevent disadvantage to the contractor rather than to Yarra Valley Water.

Project Delivery

This program of work has ongoing expenditure over the regulatory period and has no set delivery date. To date Yarra Valley Water has significantly exceeded the delivery targets set each year, as show in Table 7.17 below.

Table 7.17 Sewer Reticulation Renewals historical outcomes

Historical Program Targets and Outcomes	2005/06	2006/07	2007/08	Total
Target (km)				**40**
Outcomes (km)	24.1	39.6	41.0	**104.7**

Yarra Valley Water has stated that the exceedance of the original target shown in Table 7.17 above was due to an "*extremely high incidence of sewer blockages*" which occurred in 2007/08. However, this conflicts with reported performance data from Yarra Valley Water. The reported data shows that the number of blockages over the 2005-2008 regulatory period was:

- 2005/06 – 40.1 blockages per 100km
- 2006/07 – 49.3 blockages per 100 km
- 2007/08 – 46.3 blockages per 100 km

While at a relatively high level, the number of blockages is relatively consistent across the period, with no extremely high result in 2007/08. Yarra Valley Water subsequently clarified their statement, explaining that the reference was made to the number of multiple blockages experienced by a customer.

The proposed length of reticulation mains to be renewed over the 2009-2013 regulatory period is 180km in total or 45km per year as shown in Table 7.18. Yarra Valley Water states that this level of renewals is required in order to maintain the required target level of blockages per 100 km.

Table 7.18 Sewer Reticulation Renewals proposed outcomes

Proposed Program Targets	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Target (km)		45	45	45	45	**180**

Findings

Our review of the sewer reticulation renewals program has identified some inconsistencies with the proposed expenditure and the proposed delivery targets. We identified conflicting target outcomes for the regulatory period and inconsistent statements regarding historical performance.

We are satisfied with the increase in renewal lengths from 30km to 45 km, as this length is consistent with historical levels and has been derived using predictive modelling.

We have reviewed the proposed unit rate for renewals and note that the rates used in the current contract (due to expire in July 2009) have been held relatively constant since July 2005. We note that Yarra Valley Water has consulted with its current contractor and identified the potential for a 5-10 per cent increase in unit rates, but that the lower increase of 5 per cent has been used to adjust the unit rate.

While the final unit rates used for this program of works will be subject to the outcomes of the tender process, we note that Yarra Valley Water is proposing to work within the expenditure allowance proposed and will undertake a greater or smaller length of renewals depending on whether the final unit rates are lower or higher, respectively, than the assumed rate of $255/m.

To increase flexibility in the terms of the contract, Yarra Valley Water may wish to consider including clauses relating to undertaking annual market benchmarking of unit rates for renewals to ensure that the contracted rates are providing value for money for Yarra Valley Water.

We have accepted Yarra Valley Water's adjustment to unit rates and to the proposed lengths to be renewed. Table 7.19 shows the recommended expenditure for this program.

Table 7.19 Sewer Reticulation Renewals recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	7.8	11.5	11.5	11.5	11.5	**45.9**
Revised forecast	7.8	11.5	11.5	11.5	11.5	**45.9**
Adjustment	0.0	0.0	0.0	0.0	0.0	**0.0**

Note: Numbers may not add due to rounding

7.4.5 *Water Reticulation Renewals Program*

Key Reference: YVW, 2008, "ESC Annexure Part 4: Revenue Requirement – Water Plan 2009/10 – 2012/13" November 2008, Yarra Valley Water.

Project Overview

Yarra Valley Water's water main reticulation renewals program focuses on achieving customer service standards rather than renewals based on asset condition. The program is designed to reduce the potential impacts on customers, ranging from a loss of pressure to a loss of supply. Water reticulation pipelines are defined as pipes less than or equal to 225 mm in diameter.

As indicated, the focus for this program is customer service standards, and the targeted service levels are:

- Average unplanned frequency of water supply interruptions (per 1000 customers)
- Number of customers experiencing 5 unplanned water supply interruptions in the year (number)

Yarra Valley Water's stated objective is to assess all reticulation mains that have incurred more than three failures in the last 12 months. Reticulation mains that have had more than four failures in 12 months are assessed as a priority with an internal target of renewing at least 60 per cent of these mains within 12 weeks of identification.

Yarra Valley Water predominantly use the service level of the number of bursts per 100km per annum as their measure of performance for this renewals program.

We note, in supporting information provided by Yarra Valley Water[51], that the general trend for numbers of customers affected by unplanned water supply interruptions has been decreasing significantly over the past decade, although the recent period (January 2006 – present) has seen a slight trending increase in numbers of customer experiencing greater than three unplanned interruptions.

Project Expenditure

Yarra Valley Water's proposed expenditure on these renewals is shown in Table 7.20 below.

[51] Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008, Slide 12

Table 7.20 Water Reticulation Renewals Program proposed expenditure ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	15.5	14.4	14.4	14.4	14.6	**57.8**

The proposed expenditure is significantly higher than historical actual expenditure over the current regulatory period, which is shown in Table 7.21 below. In particular, the forecast 2008/09 expenditure represents a 34 per cent increase on the historical average over the current regulatory period. While we note there was an increase in the burst rate in 2007/08, the predominant reason for the increase in expenditure in 2008/09 was the increase in the unit rate for renewals.

Table 7.21 Water Reticulation Renewals Program actual expenditure ($m, 2008/09)

Actual Expenditure ($m 2008/09)	2005/06	2006/07	2007/08	Total
Annexure Part 1 page 1-18 (November 2008) Outcomes	10.96	10.49	13.19	**34.64**
Water Plan Annexure Part 4 page 4-58 (November 2008)	10.96	10.75	11.84	**33.55**

We note that there are conflicting reported outcomes for the total length of renewals undertaken (refer to the Project Delivery section for further information).

Yarra Valley Water's proposed expenditure is based on a unit rate for renewals of $249/m. This unit rate is significantly higher than the historical average, which is around $185/m. Yarra Valley Water stated that the increase in the unit rate was due to a number of factors including:

- Unsustainably low prices in the early 2000s
- Demand for works outstripping supply
- Increases in material costs, particularly plastic and steel, and
- Increases in road reinstatement costs (up to 25 per cent of renewals cost).[52]

A number of the factors stated above, however, are no longer having as large an impact given the current economic environment, as discussed in Chapter 4:

[52] Water Plan Annexure Part 4, page 4-57

- anecdotal evidence suggests that competition in the market place has increased with decreases in private sector investment, particularly in the mining sector, and
- there have been significant decreases in the price of oil and steel in the last couple of months which would be expected to flow through to pipe materials costs.

We note, however, that Yarra Valley Water signed a new water reticulation mains renewals contract in December 2008 with a new contracted unit rate of $267/m, an increase of 8.5 per cent on the rate for 2007/08.

Our review of the new contract revealed that there is some flexibility in the contract to adjust unit rates on an annual basis based on CPI and increases in materials prices. As discussed in the sewer reticulation renewals section, this flexibility appears to prevent major disadvantage to the contractor more than Yarra Valley Water. We note that the current contract operates for a minimum of three years with two further extensions of 24 months available to the contractor based on performance against key performance indicators.

Project Delivery

This program of work has on-going expenditure over the regulatory period and has no set delivery date. To date Yarra Valley Water has exceeded the delivery targets set in the current regulatory period, as show in Table 7.22 below.

We note that there are conflicting reported outcomes, from the current regulatory period, in the supporting information provided by Yarra Valley Water. While the differences are relatively minor, the conflicting numbers introduce a level of uncertainty over historical expenditure and outcomes which then affect our assessment of project deliverability and an analysis of proposed expenditure.

Table 7.22 Water Reticulation Renewals Program historical outcomes

Historical Program Targets and Outcomes	2005/06	2006/07	2007/08	Total
Target (km)				**173**
Outcomes (km) (Annexure Part 1, pg 1-18)	62.3	60.3	62.8	**185.1**
Outcomes (km) (Annexure Part 4, pg 4-56)	63.1	61.8	56.4	**180.5**

Yarra Valley Water is proposing to decrease the length of renewals undertaken to 58 km per annum, resulting in a target of 232 km over the next regulatory period as shown in Table 7.23. Predictive modelling undertaken using the CSIRO-developed PARMS (Pipeline Asset and Risk Management System) model has indicated that this level of renewals is required to maintain the long term service level of 46 bursts per 100 km per annum.

Table 7.23 Water Reticulation Renewals Program proposed outcomes

Proposed Program Targets	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Target (km)		58	58	58	58	**232**

Findings

Our review of Yarra Valley Water's water reticulation main renewals program has identified some significant increases in proposed expenditure predominantly as a result of a proposed increase in the unit rates used for the renewals.

Our analysis of the factors surrounding Yarra Valley Water's proposed increases to the unit rate for renewals indicated that the full increase no longer appears appropriate. However, we note that Yarra Valley Water has signed a three year minimum contract for the provision of water reticulation renewals, at a contracted unit rate of $249/m. Our review of the contract revealed that although there was some flexibility in the contract in relation to adjustments to unit rates, this flexibility appeared to apply more to the contractor than Yarra Valley Water.

The proposed and recommended capital expenditure for the water main renewals is shown in Table 7.24 below.

Table 7.24 Water Reticulation Renewals Program recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	15.5	14.4	14.4	14.4	14.6	**57.8**
YVW updated forecast	14.6	14.4	14.4	14.4	14.6	**57.8**
Revised forecast	14.6	14.4	14.4	14.4	14.6	**57.8**
Adjustment	0.9	0.0	0.0	0.0	0.0	**0.9**

Note: Yarra Valley Water has reduced the forecast expenditure in 2008/09.

7.4.6 *Property Branch Sewer Renewals Program*

Key Reference: YVW, 2008, "ESC Annexure Part 4: Revenue Requirement – Water Plan 2009/10 – 2012/13" November 2008, Yarra Valley Water.

Project Overview

Yarra Valley Water's house connection branch renewals program covers the pipes that connect the sewer reticulation mains to the customer's house plumbing. House connection branches are small diameter pipes and located close to the ground surface and as such, are susceptible to tree root intrusion. In general, 70 per cent of all sewer blockages occur within house connection branch and, of these, 75 per cent are caused by tree root intrusion.

The focus of this renewals program is to contribute to reducing the number of customers experiencing repeat blockages while helping to maintain the overall blockage rate.

The renewals program is made up of three components:

- Renewals based on service levels
- Renewals at the time of blockage, and
- Renewals to halve the difference in performance to South East Water

Only the first two components have expenditure in the 2009-2013 regulatory period.

Project Expenditure

Yarra Valley Water proposes significant expenditure for this renewals program over the regulatory period, as shown in Table 7.25 below.

Table 7.25 Property Branch Sewer Renewals Program proposed expenditure profile ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure (Service levels)	7.0	7.0	7.0	7.0	7.0	**27.9**
Capital expenditure (Blockage)	1.7	1.9	1.9	1.9	1.9	**7.5**
Total	8.7	8.9	8.9	8.9	8.9	**35.5**

Note: Numbers may not add due to rounding.

The original forecast expenditure for 2005-2008 is shown in Table 7.26. Yarra Valley Water provided additional information on actual expenditure and budgets for the current regulatory period.

Table 7.26 Property Branch Sewer Renewals Program proposed versus actual expenditure performance ($m, 2008/09)

Expenditure ($m 2008/09)	2005/06	2006/07	2007/08	Total
2005-2008 Water Plan (1 September 2004)	9.5	9.5	9.5	**28.5**
Actual expenditure	9.0	8.3	8.1	**25.4**

Yarra Valley Water provided details of the historical unit rate for these renewals showing an average cost per renewal of $4,523. In the next regulatory period, however, Yarra Valley Water are using a cost per renewal of $4,300[53]., representing a decrease over the historical average accounting for increased efficiency in the renewals process.

Project Delivery

This program of work has on going expenditure over the regulatory period and has no set delivery date. To date Yarra Valley Water has not met the delivery targets set in the 2005-2008 regulatory period, as show in Table 7.27 below.

Table 7.27 Property Branch Sewer Renewals Program historical outcomes profile ($m, 2008/09)

Historical Program Targets and Outcomes	2005/06	2006/07	2007/08	Total
Target (No.)				**7,710**
Outcomes (km) (Annexure Part 1, pg 1-19)	2,379	1,865	1,804	**6,048**

Yarra Valley Water stated that the target outcome was not met due to reductions in the renewals program resulting from a declining financial outlook for Yarra Valley Water and a general cutback of program expenditure.

The objective of the program for the 2009-2013 regulatory period is to maintain performance at the historical average level, which is currently at 12.4 blockages per 1000 customers.[54]

[53] Water Plan Annexure Part 4, page 4-64

[54] Water Plan Annexure Part 1, page 1-11

This target conflicts with other supporting information provided by Yarra Valley Water which sets the proposed target at the June 2008 actual level of 12.82 blockages per 1000 customers.[55] Yarra Valley Water has confirmed that the target to be achieved over the next regulatory period is to maintain a level of 12.4 blockages per 1,000 customers.

Yarra Valley Water stated that it will be increasing the number of house connection branch renewals from 1,800 to 2,000 in order to maintain the required target level of blockages. The proposed targets are shown in Table 7.28 below.

Table 7.28 Property Branch Sewer Renewals Program proposed outcomes profile ($m, 2008/09)

Proposed Program Targets	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Target (No.)		2,000	2,000	2,000	2,000	**8,000**

The reasoning for the increase in renewals has been a recent increase in the number of multiple blockages experienced by customers, caused predominantly by tree root intrusion, which has increased given the drought conditions over the past few years.

Findings

Yarra Valley Water proposes an increase in renewals from 1,800 to 2,000 per annum. This differs from the original target outcomes set in the 2005-2008 Water Plan of over 2,500 renewals per annum and is higher than recent actual performance. Yarra Valley Water gave reasons for their lower than expected renewals levels over 2005-2008 including the declining financial outlook due to lower water sales.

While we note that similar, if not worse, circumstances are in place at the moment (economic downturn combined with continued drought and current high level water restrictions), given that the rate of blockages has increased by 20 per cent, we agree that is prudent for Yarra Valley Water to increase the level of renewals to 2,000 per annum.

Yarra Valley Water have provided details of historical expenditure and outcomes, sufficient to determine an average unit rate. We note that the unit rate for renewals proposed by Yarra Valley Water is lower than this historical average, representing efficiencies achieved by the renewals contractor.

[55] Water Plan Annexure Part 4, page 4-63

The proposed capital expenditure for property branch sewer renewals is shown in Table 7.29.

Table 7.29 Property Branch Sewer Renewals Program recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	8.7	8.9	8.9	8.9	8.9	**35.5**
YVW updated forecast	6.8	8.9	8.9	8.9	8.9	**35.5**
Revised forecast	6.8	8.9	8.9	8.9	8.9	**35.5**
Adjustment	-1.9	0.0	0.0	0.0	0.0	**0.0**

Note: Numbers may not add due to rounding. Yarra Valley Water has adjusted expenditure in 2008/09.

7.4.7 High Risk Sewers Planned Rehabilitation

Key Reference: YVW, 2008, "Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008" December 2008, Yarra Valley Water.

Project Overview

Yarra Valley Water defines all sewer main or branch pipelines as high-risk, that is, they have the potential to cause significant environmental or customer impact and should therefore be assessed in a different manner to reticulation assets.

It has developed a Sewer Risk Ranking Model in collaboration with EPA, DSE and Melbourne Water and based on the Australian Standard for Risk Management AS4360. The model prioritises the renewal and utilises a combination of the condition, the criticality of the failure of a given main and hydraulic capacity to determine a risk ranking.

Asset condition information is provided by site inspections, the criticality of the main is determined by consideration of social, environmental, culture and efficiency factors and hydraulic capacity is determined by modelling and forecasting methods.

Potential consequences of main or branch pipeline failure are assessed against Yarra Valley Water's four key corporate strategy elements:

- Environment - damage to the environment
- Customer - disruption of the customer/community
- Efficiency- costs associated with the failure

- Culture – potential for injury or damage when repairing a failed asset

The risk assessment and ranking process leads to the development of a risk matrix showing the criticality rating, asset condition grade, action required and length of relevant main. This matrix is shown in Table 7.30 below.

Table 7.30 High Risk Sewers Planned Rehabilitation Risk matrix

Grade	2008 Criticality Rating - Main and Branch Sewer[56]			
	AAA	A	B	C
5	Immediate rehabilitation *2km*	Immediate rehabilitation *7km*	Immediate rehabilitation *9km*	Program rehabilitation *0.38km*
4	Immediate rehabilitation *1km*	Program rehabilitation *18km*	Program rehabilitation *41km*	Program rehabilitation if maintenance records indicate deterioration *9km*
3	Program rehabilitation if poor condition for age *4km*	Program rehabilitation if poor condition for age *44km*	Program rehabilitation if poor condition for age *101km*	No action *29km*
2	Program rehabilitation if poor condition for age *4km*	Program rehabilitation if poor condition for age *40km*	No action *127km*	No action *57km*
1	No action *2km*	No action *21km*	No action *173km*	No action *98km*

Ref: Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008, Slide 54

Project Expenditure

Proposed capital expenditure for this program of work is shown in Table 7.31.

Table 7.31 High Risk Sewers Planned Rehabilitation proposed expenditure profile ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	7.8	6.0	6.0	6.0	6.0	**24.0**

[56] Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008, Slide 54

Yarra Valley Water provided details of previous expenditure for this category of works indicating that it formed a component of the general sewer renewal works. Previous expenditure is presented in Table 7.32.

Table 7.32 High Risk Sewers Actual Expenditure 2005/06 to 2007/08

Proposed Expenditure Profile ($m 2008/09)	2005/06	2006/07	2007/08	Total
Relining Projects	$5.4M	$7.3M	$7.6M	$19M
Rate of High Risk projects in Relining Project	40%	38%	22%	
Pipe Cracking and Collapse Projects	$4.79M	$3.95M	$4.84M	$13.58M
Total Expenditure on High Risk Sewers	$6.95M	$6.71M	$6.51M	$20.17M

The unit rates costs for rehabilitation of high risk sewers varies significantly with the diameter of the pipe and the method of rehabilitation. Yarra Valley Water has provided details of the average unit rates for historical renewals over the current regulatory period, as shown in Table 7.33.

Table 7.33 Rehabilitation of High Risk Sewers - Average Unit Rates for Historical Works 2005/06 to 2007/08

Diameter	Average Unit Rates ($2008/09)
225mm and 300 mm	$271
375 mm and 450 mm	$331
> 450 mm	$487
Average	$275

The average unit rates shown in Table 7.33 do not include items such as CCTV, project management and contingencies, as would be included in current projects. Previously these items were undertaken or costed separately. The approximate breakdown of the average rehabilitation rate is:

- CCTV program $ 31.5 per metre
- Sewer rehabilitation $275.0 per metre
- Project management $ 30.0 per metre (9.8 per cent)
- Contingency $ 16.5 per metre (5 per cent)
- **TOTAL** **$353.0 per metre**

Project Delivery

Yarra Valley Water proposes to undertake approximately 68 km of planned rehabilitation over the next regulatory period, as shown in Table 7.34.

Table 7.34 High Risk Sewers Planned Rehabilitation proposed outcomes

Proposed Program Targets	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Target (km)		15	16	18	19	**68**

This level of outcomes is consistent with historic performance which has seen approximately 19 kilometres of high risk mains rehabilitated each year.

Yarra Valley Water has provided basic details of the proposed lengths to be rehabilitated. Mains are prioritised based on the risk model discussed in the previous sections. Table 7.35 shows the outputs from the risk model detailing the priority lengths for rehabilitation.

Table 7.35 High Risk Sewer Rehabilitation - Priority Lengths for Rehabilitation

Category	2008 Total Length
Immediate rehabilitation	19 km
Program rehabilitation	59.4 km
Program rehabilitation if poor condition for age	202 km
No action	507 km

Findings

Our review has identified that that Yarra Valley Water use a risk assessment model to identify and prioritise sewer mains for rehabilitation, and we have reviewed outputs from the model in the form of a risk model showing lengths requiring rehabilitation. We are satisfied that the risk model is detailed enough to identify the appropriate high risk mains for rehabilitation.

Yarra Valley Water has provided details of proposed capital expenditure over the next regulatory period and details of the average unit rate applied to calculate the expenditure. We are satisfied that the proposed capital expenditure and the unit rate used to calculate the expenditure have been developed using a sound basis.

The proposed capital expenditure for this program is shown in Table 7.36.

Table 7.36 High Risk Sewers Planned Rehabilitation recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	7.8	6.0	6.0	6.0	6.0	**24.0**
YVW updated forecast	8.3	6.0	6.0	6.0	6.0	**24.0**
Revised forecast	8.3	6.0	6.0	6.0	6.0	**24.0**
Adjustment	+0.5	0.0	0.0	0.0	0.0	**0.0**

7.4.8 *New building*

Project Overview

Yarra Valley Water proposes to construct an extension to existing buildings at the Mitcham office to accommodate staff and contractors needed to deliver the current and future Water Plan operational requirements. The proposed extension would be constructed over a period of three years commencing in 2009/10.

Yarra Valley Water indicated that the need for the office extension was to increase the space available per staff member or per desk from the current average of 10.9 square metres to a level of 15 square metres per desk. This increased level is recommended by the Victorian Government Office Accommodation guidelines.

Project Expenditure

The proposed capital expenditure required for this project is shown in Table 7.37.

Table 7.37 New building proposed expenditure ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	-	4.1	7.1	3.4	-	**14.6**
YVW Updated expenditure	-	3.0	6.5	1.72	-	**11.22**

Yarra Valley Water has revised the expenditure originally proposed in their capital program to take account of comments related to the draft report requesting reductions in capital expenditure where possible, to reduce the impact on prices.

Yarra Valley Water provided details of submissions to and approval from the Yarra Valley Water Board. These submissions detailed the results of an options analysis covering five options as shown below with their respective Net Present Cost.

- Extend office space at Mitcham – NPC = $24.2 million

- Buy land and build full new office building – NPC = $60.7 million
- Lease brand new office building – NPC = $40.5 million
- Utilise temporary accommodation – NPC = $25.7 million
- Move some teams off-site – NPC = $32.9 million

Project Delivery

The proposed project is to be delivered over a period of 3 years commencing in 2009/10 with completion in 2011/12.

Findings

While there was no information supporting this project included within the Water Plan or the supporting Annexures, Yarra Valley Water has subsequently provided additional information detailing the "business case" for the office extension. We understand that this information was presented to the Yarra Valley Water Board and was approved.

We note that one of the primary guidelines for justifying the office extension is the Victorian Government Office Accommodation guideline, however we understand that this guideline covers new government buildings only; not existing buildings. In our opinion this guideline does not specifically apply as a justification for this project. We also note that Yarra Valley Water's submission to their Board indicates that, with the winding up of the COMPASS and CC&B programs, that pressure on space will decrease.

While we note that Yarra Valley Water has reduced their originally proposed capital expenditure by over 23 per cent, we are still of the opinion that this expenditure could, in the context of water prices doubling and capital programs being deferred, be seen as discretionary. We have seen no evidence that the current office accommodation arrangements are having an adverse affect on project delivery, staff moral or efficiency.

As such, we maintain our recommendation to remove this expenditure from the capital program. The impact of our proposed adjustment is shown in Table 7.38.

Table 7.38 New building recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	-	4.1	7.1	3.4	-	**14.6**
YVW updated forecast	-	3.0	6.5	1.7	-	**11.2**
Revised Forecast	-	0.0	0.0	0.0	-	**0.0**
Adjustment	-	-4.1	-7.1	-3.4	-	**-14.6**

7.4.9 *RA0005 Wonga Park Sewer Backlog*

Project Overview

Yarra Valley Water is required to provide sewerage services to currently un-serviced households as part of the backlog sewerage program.

The primary drivers for this program are:

- the Yarra River Health Strategy and its related Yarra River Action Plan, and
- Clause 20(2) of the State Environment Protection Policy (Waters of Victoria – Schedule F7 Waters of Yarra catchment.

Yarra Valley Water has listed two priority projects in its current Water Plan that work to protect and enhance the Yarra River, the Northern Sewerage Project and the backlog sewerage program.

Yarra Valley Water is required to fulfil its obligations under the backlog sewerage program by 2025, a date that has been brought forward at the request of the State Government.

Project Expenditure

Yarra Valley Water proposes to spend $52.9 million on the backlog sewerage program over the current 2009-2013 regulatory period. Of this, $13.1 million is proposed to be allocated to RA0005 Wonga Park Sewer backlog.

Yarra Valley Water has stated in the Water Plan, on page 42, that the provision of sewerage services to backlog areas over the current regulatory period will result in additional operating expenditure costs of $0.6 M. However, this conflicts with other information provided in the Water Plan which, on page 55, identifies an increase of $0.25 million over the base operating expenditure in 2007/08.

Yarra Valley Water has provided a comprehensive package of information to support the proposed expenditure.

Project Delivery

Yarra Valley Water's backlog sewerage program has been operating for a number of years. During the previous 2005-2008 Water Plan regulatory period, Yarra Valley Water provided services to 1,107 lots. This was greater than the original forecast of 943 lots and Yarra Valley Water has stated that this is the result of a re-prioritisation of the backlog sewerage program and identification of a new target, which was then achieved.

Yarra Valley Water proposes to provide services to 2,660 lots during the next regulatory period a significant increase over the levels achieved in the 2005-2008 Water Plan period. Yarra Valley Water has indicated that this increase is necessary to meet the adjusted completion date of 2025.

The Water Plan indicates that the Wonga Park backlog sewer project appears to commence in 2008/09 and is to be completed by 2011/12.

Findings

We understand the importance of the backlog sewer program and the mandated responsibilities on Yarra Valley Water to complete the program by 2025, and we have assessed the project and the supporting information provided. We are satisfied regarding the reasons for the expenditure, the quantum of capital expenditure proposed and the timing of the project. The proposed capital expenditure for this project is shown in Table 7.39.

Table 7.39 RA0005 Wonga Park Sewer Backlog recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Proposed expenditure	0.3	0.6	3.1	9.4	-	**13.1**
Adjusted expenditure	0.5	0.6	3.1	9.4	-	**13.1**
Adjustment	+0.2	0.0	0.0	0.0	-	**0.0**

7.4.10 Customer Water Meter Replacement

Key Reference: YVW, 2008, "Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008" December 2008, Yarra Valley Water.

Project Overview

Yarra Valley Water has approximately 630,000 customer water meters in their network and this figure is growing at an approximate rate of 1.4 per cent annually.

Yarra Valley Water's policy for meter replacement is that "*meters are replaced as they fail (accuracy) individually or collectively (a population of meters is replaced once it is established that that population has systemically failed.) with the goal of maintaining the 'fleet's' (all of the meters) accuracy*"[57].

[57] Water Plan 3 Asset Management Planning Presentation for ESC Audit, December 2008, Slide 41

Project Expenditure

The proposed capital expenditure for this program is shown in Table 7.40.

Table 7.40 Customer Water Meter Replacement proposed expenditure profile ($m, 2008/09)

Proposed Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Capital expenditure	2.7	3.0	2.6	2.8	2.9	**11.3**

Yarra Valley Water provided specific details on the breakdown of the proposed capital expenditure in their response to our Draft Report, which we have reviewed and are satisfied with.

Yarra Valley Water also provided details of historical expenditure on customer water meter replacement, as shown in Table 7.41, for comparison against the proposed expenditure.

Table 7.41 Customer Water Meter Replacements - Historical Capital Expenditure 2005/06 to 2007/08

Historical Expenditure Profile ($m 2008/09)	2005/06	2006/07	2007/08	Total
Planned water meter replacement all sizes	1.06	0.97	0.72	**2.75**
Large meters inspection and testing	0.15	0.29	0.49	**0.93**
All meter replacements unplanned and strategy and development	1.03	1.04	1.36	**3.44**
Total	2.24	2.30	2.57	**7.12**

The proposed capital expenditure for the next regulatory period represents a 10 per cent increase over the actual expenditure in 2007/08.

Yarra Valley Water has provided details of their customer water meter replacement contract. The contract includes a detailed schedule of rates under which all meter replacements are performed. The schedule of rates has remained unchanged from the commencement of the contract on 1 July 2005 until November 2008 when a proportion of the rates were reviewed. Yarra Valley Water indicated that the revision to the rates was to adjust the supply cost of meters due to systemic failures in the brand of meters originally included in the contract rates.

We have undertaken a comparative analysis of customer water meter replacement programs across all three businesses to identify any major differences. In addition, the comparative analysis provides some indication of whether these works may benefit from inclusion under shared services arrangements. Our analysis has indicated that the replacement costs do not vary significantly across the businesses, with the largest variation being around 8 per cent from the benchmark rate. Across the three water businesses, however, the total potential savings would be more significant.

Project Delivery

Yarra Valley Water has provided details of its current customer water meter replacement contract. The contract commenced on 1 July 2005 and is due for renewal on 31 December 2009.

Historical performance in replacement of water meters was less than expected with 60,000 meters targeted for replacement over the 2005-2008 regulatory period but only 43,729 meters actually replaced. Yarra Valley Water stated that the reduction in replacements was due to lower water use (and correspondingly lower revenue risk from inaccurate meters) and increases in the replacement cost of the meters (from rising copper prices).

Yarra Valley Water is proposing to replace a total of 91,081 water meters covering a range of meter sizes and criteria for replacement. This total represents a 108 per cent increase over historical performance. Given the fact that similar conditions to those discussed above, which affected historical performance, are present, this may have some impact on the proposed meter replacements program. We would recommend that Yarra Valley Water monitor their performance on this project closely and adjust required capital expenditure if circumstances warrant this change.

We note that water prices are proposed to increase significantly over the next regulatory period which, we presume, will offset the expected reduction in water use in Yarra Valley Water's water meter replacement model.

Findings

Our review of Yarra Valley Water's proposed meter replacement program identified that there appears to be a relatively robust model for identifying when meter replacement should occur.

Yarra Valley Water provided supporting information detailing performance against targets for the current regulatory period, proposed expenditure and a breakdown of proposed meter replacements.

Our review of this information did not highlight any issues with the proposed expenditure. We have some concerns over the number of water meters proposed for replacement since it is significantly higher than historical performance. We have not, however, identified any requirements for reductions in expenditure. The proposed and recommended capital expenditure is presented in Table 7.42

Table 7.42 Customer Water Meter Replacement recommended expenditure ($m, 2008/09)

Recommended Expenditure Profile ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	2.7	3.0	2.6	2.8	2.9	**11.3**
YVW updated forecast	2.5	3.0	2.6	2.8	2.9	**11.3**
Revised forecast	2.5	3.0	2.6	2.8	2.9	**11.3**
Adjustment	-0.2	0.0	0.0	0.0	0.0	**0.0**

7.5 Other comments on capital expenditure

7.5.1 Renewals program

Renewals programs are generally not a specific project but are rather a program of works grouping a number of similar but individual projects. These projects are generally covered by an overall strategy and involve very similar works.

Yarra Valley Water uses a variety of risk based models to identify and prioritise assets for renewal, for example:

- Water reticulation main lengths are determined using the PARMS (Pipeline Asset and Risk Management System) developed by CSIRO. This model takes into account the following variables: asset age, durability and integrity of construction material, design and construction techniques used, the effect of climatic and environmental conditions, the operation and maintenance regime used, the condition of the assets and the unit rate for renewal.
- Sewer reticulation main and house connection branch renewal lengths are determined using a predictive risk based model taking into account customer service standards for sewerage blockages and repeat blockages and the criticality / potential impact on the local and overall performance of the sewer network.
- High risk sewer reticulation and main and branch renewal lengths are determined using a criticality model assessing consequence and likelihood. The model outputs rate individual lengths of sewer mains according to a set rating scale. The highest risk mains are prioritised for renewal.

Yarra Valley Water's total renewals program is shown in Table 7.43. The renewals programs for sewer reticulation, water reticulation, property branch sewers and high risk sewers planned rehabilitation, have been discussed and analysed in Section 7.4.

Table 7.43 Yarra Valley Water Renewals Program for Water and Sewer ($m, 2008/09)

Renewals Program Components ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Sewer HCB	8.7	8.9	8.9	8.9	8.9	**35.5**
Sewer Main and Branch	7.9	6.0	7.4	7.6	10.2	**31.2**
Sewer Reticulation	7.8	11.5	11.5	11.5	11.5	**45.9**
Sub-total Sewer	**24.4**	**26.4**	**27.8**	**29.0**	**30.6**	**112.6**
Water Distribution	2.7	1.8	3.1	0.2	5.0	**10.2**
Water Main to Meter	0.9	0.9	0.9	0.9	0.9	**3.8**
Water Reticulation	15.5	14.4	14.4	14.4	14.6	**57.8**
Sub-total Water	**19.1**	**17.1**	**18.4**	**15.5**	**20.5**	**71.8**
Total	**43.6**	**43.7**	**46.3**	**43.5**	**51.1**	**184.6**

Note: Numbers may not add to due rounding

The total expenditure for the renewals programs represents approximately 20.6 per cent of the total capital expenditure for Yarra Valley Water over the next regulatory period. Over the current regulatory period, the total expenditure on renewals was about $140.8 million which represents about 27.4 per cent of the total capital expenditure.

We note that Yarra Valley Water has proposed a deferral of expenditure on water and sewer renewals from 2008/09 to the next regulatory period from 2009/10 to 2012/13 as shown in Table 7.44.

Table 7.44 Water and Sewer Main Renewals - Proposed Deferrals from 2008/09

Renewals Program Deferrals ($m 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Mains	-4.0	1.0	1.0	2.0	-	**0.0**
Sewer Mains	-6.0	2.0	2.0	2.0	-	**0.0**
Total	**-10.0**	**3.0**	**3.0**	**4.0**	**-**	**0.0**

In the supporting information provided by Yarra Valley Water, there were a number of updates to the 2008/09 forecast expenditure. We are unsure whether these adjustments take account of the proposed deferrals listed in Table 7.44, however the sum total of the adjustments does not match the total deferrals above. In the absence of further information, we have included the proposed deferrals on top of the latest expenditure forecasts.

7.5.2 *New / increased ongoing capital programs*

We have identified a number of programs where expenditure is either new in the next regulatory period or has been significantly increased in the next regulatory period compared to the expenditure approved for the current regulatory period. The following programs have been identified:

- (SSC912) Rising Main Replacements / Upgrades (increased expenditure)
- (WSR503) Valve Insertion Program (increased expenditure)
- (WSR450) M & E Pump Station Upgrades – Efficiency (increased expenditure)
- (WSR401) Programmed Pump Station Upgrades (increased expenditure)
- (WSR643) Tank – M&E Upgrade Strategy (new program)
- WWQ022 Strategy to reduce WQ complaints to 3.0/1000 in 2013 (new program)
- (SCC922) Emergency Replacement of Manholes (new program)
- (WSR714) Alternative Energy Source Strategy (Water) (new program)
- (SSC916) Alternative Energy Source Strategy (Sewerage) (new program)
- (SRH013) Renew Property Branch Sewers (from logged jobs) (new program)
- (SSC919) Emergency Civil Site Works (new program)
- (SSC911) Siphon Replacements / Upgrades (new program)

No information was received on these new or significantly increased programs in time for inclusion in the draft report, however Yarra Valley Water subsequently provided supporting information.

Our review of these programs did not identify any major issues and as such we have not recommended any adjustments to the proposed expenditure. We note, however, that the WSR643 Tank – M&E Upgrade Strategy program was incorrectly labelled and in fact relates to on going expenditure for sewer pump station upgrades and M&E upgrades. Yarra Valley Water has not provided the appropriate code for this expenditure however updated supporting details for the expenditure were provided and we have no issues with the program.

7.5.3 *Commissioning dates*

We have reviewed the correlation between commissioning dates and the commencement of operating expenditure for the top 10 projects only. We have not been supplied with sufficient information to assess this for the remaining capital projects. Refer to Section 7.4 for further details. Where information has been made available to us, we are generally satisfied that the commissioning dates and operating expenditure commencement dates match.

7.5.4 *Depreciation rates*

Consistency with asset lives

We note that the ESC uses a single asset life to model the depreciation of assets from capital projects. This practice generally does not provide a fully accurate depreciation profile, however the impact of this can be reduced by using a weighted average asset life which is based on asset lives for each category of assets weighted by the level of expenditure proposed for the category of assets.

We have not received sufficient information to assess whether the single asset life used has been developed in this manner.

Consistency with project commissioning dates

We have reviewed the correlation between commissioning dates and the commencement of depreciation for the top 10 projects only. We have not been supplied with sufficient information to assess this for the remaining capital projects. Refer to Section 7.4 for further details. Where information has been made available to us, we are generally satisfied that the commissioning dates and depreciation commencement dates match.

7.5.5 *Not prescribed capital expenditure*

Yarra Valley Water has not identified any not prescribed capital expenditure items in the ESC template.

7.5.6 *Revised template – developer contributions*

Subsequent to the submission of its Water Plan, Yarra Valley Water submitted a revised price review template that reflected a change in the treatment of a number of assets that Yarra Valley Water originally assumed it would not be funding. This was due to a change in approach announced by the ESC whereby 'reticulation assets' were newly defined as any sewerage pipes of 225mm in diameter or less, or any water pipes of 150mm in diameter or less.

The change in the treatment of these assets increased Yarra Valley Water's gross capital expenditure by the amounts indicated below.

Table 7.45 Change to capital expenditure program relating to contributed assets ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
Developer contributed assets	Water Plan	234.45	276.94	230.98	215.23	189.42
	Revised forecast	253.34	296.59	237.72	220.04	205.13
	Net change	**18.89**	**19.65**	**6.74**	**4.81**	**15.70**

7.6 Conclusions and recommendations

For the reasons set out above, we recommend that the changes identified in Table 7.46, be made to Yarra Valley Water's capital expenditure forecasts.

The recommended changes include Yarra Valley Water's most recent forecasts for the projects listed which include proposed deferrals of expenditure.

Table 7.46 Overview of recommended changes to capital expenditure ($m, 2008/09)

Yarra Valley Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	TOTALS
Total Water Plan capital expenditure	**164.40**	**234.45**	**276.94**	**230.98**	**215.23**	**189.42**	**912.57**
Recommended adjustments							
Contributed assets	-	18.89	19.65	6.74	4.81	15.70	**46.90**
Water Plan adjustment		**253.34**	**296.59**	**237.72**	**220.04**	**205.12**	**959.47**
Norther Sewerage Project		-14.00	-2.03	20.80	-0.09	0.07	**18.75**
Epping / Craigieburn – Stage 1 & Stage 2 (Section 1)	-	-2.87	-12.82	-26.06	0.00	34.43	**-4.45**
Epping / Craigieburn – Stage 2 (Sections 2 & 3)	-	-1.83	3.80	-7.13	-1.81	6.88	**1.74**
Water Reticulation Renewals Program	-	-0.93	0.00	0.00	0.00	0.00	**0.00**
Property Branch Sewer Renewals Program	-	-1.87	0.00	0.00	0.00	0.00	**0.00**
High Risk Sewers Planned Rehabilitation	-	0.48	0.00	0.00	0.00	0.00	**0.00**
New building	-	0.00	-4.10	-7.10	-3.40	0.00	**-14.60**
Wonga Park Sewer Backlog		0.20	0.00	0.00	0.00	0.00	**0.00**
Customer Water Meter Replacement	-	-0.17	0.00	0.00	0.00	0.00	**0.00**
Other water deferrals		-12.68	-24.63	18.56	4.18	-1.18	**-3.07**
Other sewer deferrals		-44.41	9.38	9.18	6.23	-11.95	**12.84**
Total adjustments	**-**	**-78.08**	**-30.40**	**8.25**	**5.11**	**28.25**	**11.21**
Total recommended capital expenditure		**175.26**	**266.19**	**245.97**	**225.15**	**233.37**	**970.68**

Note: Figures may not add due to rounding

8 Glossary

8.1 *Key terms and acronyms used*

ACRM	Asset Criticality Risk Model
CWW	City West Water
Current regulatory period	Regulatory period from 1 July 2005 to 30 June 2009
ESC	Essential Services Commission
GL	Gigalitre or one billion litres
KPI	Key performance indicator
ML	Megalitre or one million litres
MW	Melbourne Water
Next regulatory period	Regulatory period from 1 July 2009 to 30 June 2013
Not prescribed services	See prescribed services
Potable water	Water that is suitable for drinking
Prescribed services	Services as set out in section 6(a) of the WIRO, broadly relating to core water, wastewater and recycled water services which the ESC has responsibility for regulating. Differentiated from other areas of operation which are defined as 'not prescribed services' and are not regulated by the ESC
Recycled water	Water derived from wastewater systems or industry processes which is treated to a standard that is appropriate for its intended use
Reticulation	A network of pipelines used to deliver water to end users
RWTP	Recycled Water Treatment Plant
SEW	South East Water
SoO	Statement of Obligations
STP	Sewerage Treatment Plant (same as WWTP)
VCEC	Victorian Competition and Efficiency Commission
Wastewater	includes Sewerage and Trade Waste services

Water retailer	Any one of, or a combination of, metropolitan Melbourne's three water retail businesses – City West Water, South East Water and Yarra Valley Water
WIRO	Water Industry Regulatory Order
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
YVW	Yarra Valley Water

Appendix A: Mapping of Conservation Measures

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
Demand management	5.4 The Government will require all urban water authorities to introduce permanent water savings measures. These measures will be developed at the local level and will be suitable for local conditions. 5.5 The Government and water authorities will undertake community education and information programs to encourage water saving. 5.8 The Government and water authorities will develop, prior to 1 December 2004, uniform water restriction guidelines for drought response which will set out a recommended four-stage restriction policy for the whole of Victoria.	4.31 Metropolitan water authorities to maintain existing water savings (350,000 water-efficient gardens and work with 140,000 householders) Water authorities to work with the community to reduce total per capita water usage by at least 25 per cent by 2015, increasing to 30 per cent by 2020 (from 1990's average water use). Additional conservation measures will be implemented in Melbourne with a view to bringing forward the 30 per cent target to 2015. (3.1) DSE and the water authorities to extend the metropolitan Our Water Our Future behavioural change program until 2015 (3.3)	Objective 1: Maintaining current water use at 331 litres per day through water conservation measures ($12m a year) and behaviour change ($9m a year), with an ongoing timeframe.	1.1 Continue existing water savings by maintaining existing programs e.g. water efficiency labelling, local government efficiency program, Savewater!, OWOF behavioural change, 5 star homes water efficiency, rebates for water conservation goods, Smart water Fund (save 42 GL p.a. by 2015) 1.2 New program that focuses on garden watering (save 4.3 GL p.a. by 2015) 1.3 Individualised behaviour change programs (maintain current saving of 3.9 GL p.a. by 2015) 1.4 PWSR and restrictions

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
		DSE and the metropolitan water authorities to introduce on-the-spot fines for breaching water restrictions or permanent water saving rules (3.4) Continue to support the Smart Water Fund until 2008, at which time there would be a review (3.8)		
Household efficiency	5.9 The Government, in partnership with the Commonwealth and other State and Territory Governments, is developing national mandatory water efficiency labelling for appliances, fixtures and fittings. Victoria proposes to introduce legislation to implement the national scheme by Autumn 2005. 5.11 The Government will encourage use of water efficient washing machines and dishwashers through the water efficiency labelling scheme but does not propose to make them mandatory at this stage. 5.10 The Government will introduce mandatory water efficient plumbing measures such as water conserving shower roses and	4.3.2 Metropolitan water authorities to implement conservation and efficiency programs (water-efficient showerhead program; water-efficient washing machine program; water-efficient evaporative air conditioners) Water authorities and Victorian Water Trust to extend the Water Smart Homes and Gardens	Objective 3: Save more water at home: undertake new water conservation actions to achieve 21.9 billion water savings by 2015, 34.6 billion water savings by 2030 and 38.6 billion water savings by 2055, at a cost of up to $25 million a year to 2015. Actions would include water-efficient showerheads,	Program 2: Showerhead replacement: install 1,054,153 water efficient showerheads (save 12.6 GL p.a. by 2015) Program 3: Clothes-washer incentives - rebates for and installation over 400,000 4 and 5 star washers (save 8.5 GL p.a. by 2015) Program 4: Evaporative air conditioner compliance

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	taps (AAA equivalent) for all new houses and other buildings and for new fittings within existing buildings from 1 July 2004. 5.12 The Water Smart Gardens and Homes Rebates Scheme will continue to support households to use water more wisely, over the next two years until 30 June 2006.	Rebates until June 2011 (3.9) Ongoing until June 2009, the urban water authorities are to distribute around 160,000 water efficient showerheads (3.10)	washing machines, evaporative air conditioners and Melbourne friendly gardens.	standards by 2015 (save 0.8 GL p.a. by 2015)
Development efficiency	5.13 The Government will set an aspirational target for new development to achieve at least 25 per cent savings in water use. 5.14 The Government will prepare Water Sensitive Urban Development guidelines to assist developers, industry and local government in achieving the target, further developing existing work by Councils, water authorities, developers and others. 5.15 The Government will provide funding to support smart urban water use initiatives which encourage innovative approaches to demand management, recycling and stormwater management. 5.16 The Government will require the urban water authorities to plan for new growth areas in the development of their Water Supply- Demand Strategies. 5.17 The Government will require improved water efficiency in new Government buildings.	4.3.4 Melbourne water authorities to expand the Pathways to Sustainability program to all water users within Melbourne that use 10 ML per year or more (and implement additional actions to achieve the non–residential target and implement other programs to achieve the non-residential conservation target	Objective 4: Helping businesses achieve 13.0 billion water savings by 2015, 15.7 billion water savings by 2030 and 17.0 billion water savings by 2055, at a cost of up to $4 million a year to 2015.	Program 6: Businesses and industry water efficiency (save 8 GL p.a. plus 5GL for Altona Precinct by 2015)

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	5.21 Funding will be provided to support the extension of local government water conservation plans across regional Victoria. 5.22 The urban water authorities will be required to work with local government in the preparation of these plans. 5.23 Local government will be eligible for funding support for water conservation and recycling demonstration projects including use of recycled water on sporting grounds and in parks. 5.18 The Government will require all urban water authorities to work with industry towards improved water management outcomes, including opportunities for water conservation, recycling and waste minimisation. 5.19 The Government will require all urban water authorities to report annually on their water conservation programs with industry and details of water saved. 5.20 The Pathways to Sustainability program within metropolitan Melbourne will be extended by the water authorities to other industrial water users within the metropolitan area as soon as the initial program has been completed for the top 200 industrial water users.			

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Leakage		4.33 Metropolitan water authorities to continue to manage the water distribution system efficiently and reduce leakage	Objective 5: Saving 2.5 billion litres of water n a year through reduction in water leaks and wastage at a cost of $1.2 million a year.	Program 7: Water infrastructure losses and waste – double the active leak control program to 6,000 km a year, and maintaining monitoring and pressure reduction programs. (save 2.5 GL p.a. by 2015)
Recycling	5.25 The Government will require all urban water authorities to assess opportunities for the use of recycled water and other alternative supplies in the development of Water Supply-Demand Strategies. (note OWOF states that the Government has previously announced a water recycling target of 20 per cent by 2010). 5.26 The Government will not place recycled water directly into the drinking water supply system. However, technical development and implementation elsewhere will be monitored. 5.27 Over the next four years, the Government will consider investment in strategic water recovery and recycling programs that:	Action 4.36 Melbourne water authorities will invest in the voluntary uptake of a range of local water recycling and reuse schemes, including rainwater tanks, advanced greywater systems, dual pipe systems for recycled water in new residential and commercial developments and treatment plants for stormwater reuse.		13 priority projects identified under the MMRP. Three of these projects are YVW's: Beveridge, Craigieburn West and Epping North total 0.5GL saved (p.18 Corporate Plan $2.4m in 2008/09).

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	o are of State or regional significance; o deliver multiple benefits – social, economic and environmental; o involve a cooperative approach; and o are larger scale projects or initiatives.	Action 4.37 The Government will work with the metropolitan water authorities and stakeholders to investigate opportunities to reuse and recycle 30,000 ML of local water sources for non–drinking purposes within greater Melbourne by 2055.		

Halcrow Pacific Pty Ltd

Melbourne
Level 1, 542 Station Street, Box Hill, Melbourne, VIC 3128
Tel +61 3 9899 9777 Fax +61 3 9899 1214
Sydney
Level 22, 68 Pitt Street, Sydney, NSW 2000
Tel +61 2 9250 9900 Fax +61 2 9241 2228
Brisbane
Suite 758, 320 Adelaide Street, Brisbane, QLD, 4000
Tel +61 7 3010 9272

www.halcrow.com