Essential Services Commission

City West Water Expenditure Review

March 2009

Final Report

Halcrow Pacific Pty Ltd
and
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Halcrow

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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	27/01/09	DS/PL	DS/PL	DF
1	0	Final Report	20/03/09	DS/MB	DF/PL	DF
1	1	Final Report + minor ESC comments	31/03/09	DF/PL	DF/PL	DF
1	2	Final Report – Public Version	15/04/09	DF/PL	DF/PL	DF

Acknowledgements

Halcrow and Deloitte would like to thank City West Water staff, including Andre Kersting and David Heeps, for their assistance in relation to this report.

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 – 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 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 engagement team to this project was as follows:

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

- the engagement 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 engagement 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 engagement 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

As part of this review we have conducted an analysis on a number of aspects of City West Water's corporate framework, asset management framework, and strategic planning activities. Our review covered:

- City West Water's 2008/09 Corporate Plan, Customer Charter, Environmental Sustainability Plan and the Water Plan

- City West Water's Asset Management Plan, asset management policy, asset creation policy
- procedures for determining capital works programs, ongoing monitoring and post-implementation reviews and
- City West Water's operations planning process.

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 that 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 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*

The following table summarises our recommendations for changes to City West 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)

City West Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Total Water Plan operating expenditure	177.27	207	228.29	263.52	304.86	350.13
Recommended adjustments						
Maintenance cost escalation		-0.59	-1.19	-1.80	-2.44	-3.09
VCEC productivity		1.00	0.80	0.45	0.10	0.10
West Werribee Dual Water Supply Scheme		0.00	0.00	0.00	-0.31	0.00
Labour costs (including defined benefits contributions)		2.76	2.87	1.23	-0.25	-0.33
Water conservation		-1.27	-0.50	-1.50	-1.58	-1.73
Reallocation from prescribed to not prescribed		0.00	-1.38	-1.39	-1.40	-1.42
Electricity		0.00	0.00	-0.57	-1.11	-1.36
Total adjustments		**1.90**	**0.60**	**-3.58**	**-6.99**	**-7.84**
Total recommended operating expenditure		**208.90**	**228.89**	**259.94**	**297.87**	**342.29**

1.6 *Capital Expenditure*

The following table summarises our recommendations for changes to City West Water's capital expenditure. Reasons for the adjustments are set out later in this document.

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

Expenditure item		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
1150mm main – Sayers Road to Dohertys Road	Water Plan	-	0.26	3.20	6.41	3.23	0.00	**12.84**
	Revised forecast	-	0.26	3.14	6.24	3.12	0.00	**12.50**
	Net change	**-**	**0.00**	**-0.06**	**-0.17**	**-0.11**	**0.00**	**-0.34**
Werribee West – 750mm inlet/outlet	Water Plan	-	-	3.31	5.98	2.99	0.00	**12.29**
	Revised forecast	-	-	3.25	5.82	2.89	0.00	**11.96**
	Net change	-	**-**	**-0.06**	**-0.16**	**-0.10**	**0.00**	**-0.32**
Werribee West – low level reservoir	Water Plan	-	0.54	1.57	3.14	1.57	0.00	**6.28**
	Revised forecast	-	0.54	1.54	3.06	1.52	0.00	**6.11**
	Net change	-	**-0.01**	**-0.03**	**-0.08**	**-0.05**	**0.00**	**-0.17**
Werribee West – 600mm inlet/outlet	Water Plan	-	-	1.37	2.39	1.19	0.00	**4.95**
	Revised forecast	-	-	1.34	2.32	1.15	0.00	**4.82**
	Net change	**-**	**-**	**-0.03**	**-0.06**	**-0.04**	**0.00**	**-0.13**
Dunnings Road to Sneydes Road	Water Plan	-	**2.55**	**1.14**	0.00	0.00	0.00	**1.14**
	Revised forecast	-	2.19	0.00	0.00	0.00	0.00	**0.00**
	Net change	**-**	**-0.36**	**-1.14**	**0.00**	**0.00**	**0.00**	**-1.14**
Cost escalation	**Net change**	-	**-2.20**	**-6.74**	**-11.39**	**-10.25**	**-7.14**	**-35.52**
Total Water Plan forecast		**76.04**	**90.37**	**139.80**	**159.55**	**109.03**	**61.49**	**469.87**
Net changes		**0.0**	**-2.57**	**-8.05**	**-11.87**	**-10.56**	**-7.14**	**-37.63**
Total revised forecast			**87.80**	**131.75**	**147.68**	**98.47**	**54.35**	**432.24**
Business adjustments to 2008-09 forecast	**Net change**	-	**-3.94**	**1.86**	**2.30**	**0.00**	**0.00**	**4.16**
Total revised forecast			**83.86**	**133.61**	**149.98**	**98.47**	**54.35**	**436.40**

Note: numbers may not add due to rounding

City West Water provided an update to the ESC outlining some minor deferrals of capital expenditure from 2008/09 to the next regulatory period. The sum total of the deferrals amounted to approximately $5 million however a component of the proposed deferrals is already reflected in the revised forecast for the Dunnings Road to Sneydes Road project.

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 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 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 and 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 Commission 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 project 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 Commission 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 Commission 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 into our report.

2.3 *Structure of the report*

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

- chapter 3 outlines the methodology adopted by us in reviewing City West Water's expenditure forecasts
- chapter 4 discusses City West Water's strategies, cost drivers and service standards
- chapter 5 discusses some issues common to both City West Water's operating and capital expenditure forecasts
- chapter 6 outlines City West Water's operating expenditure forecasts, and presents our analysis and conclusions/recommendations
- chapter 7 outlines City West 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 engagement 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 engagement 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 engagement 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 engagement teams held discussions with the businesses, each over two days, as below:

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 engagement 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 engagement 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)
- had regard to documentation and information prepared by independent third parties, including by the ABS, Reserve Bank of Australia, ABARE, the US Energy Information Administration.

3.1.5 Preparation of draft report

The process and findings of the review undertaken by the engagement 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 to discuss their proposals.

Table 3.2 Further meetings with businesses

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

4.1.1 Overview

We have conducted an analysis on a number of aspects of City West Water's corporate framework, asset management framework and strategic planning activities. Our review covered:

- City West Water's 2008/09 Corporate Plan, Customer Charter, Environmental Sustainability Plan and the Water Plan
- City West Water's Asset Management Plan, asset management policy, asset creation policy
- procedures for determining capital project deliverability, ongoing monitoring and post-implementation reviews and
- City West Water's operations planning process.

Our analysis of each of these areas is presented below.

4.1.2 Corporate framework

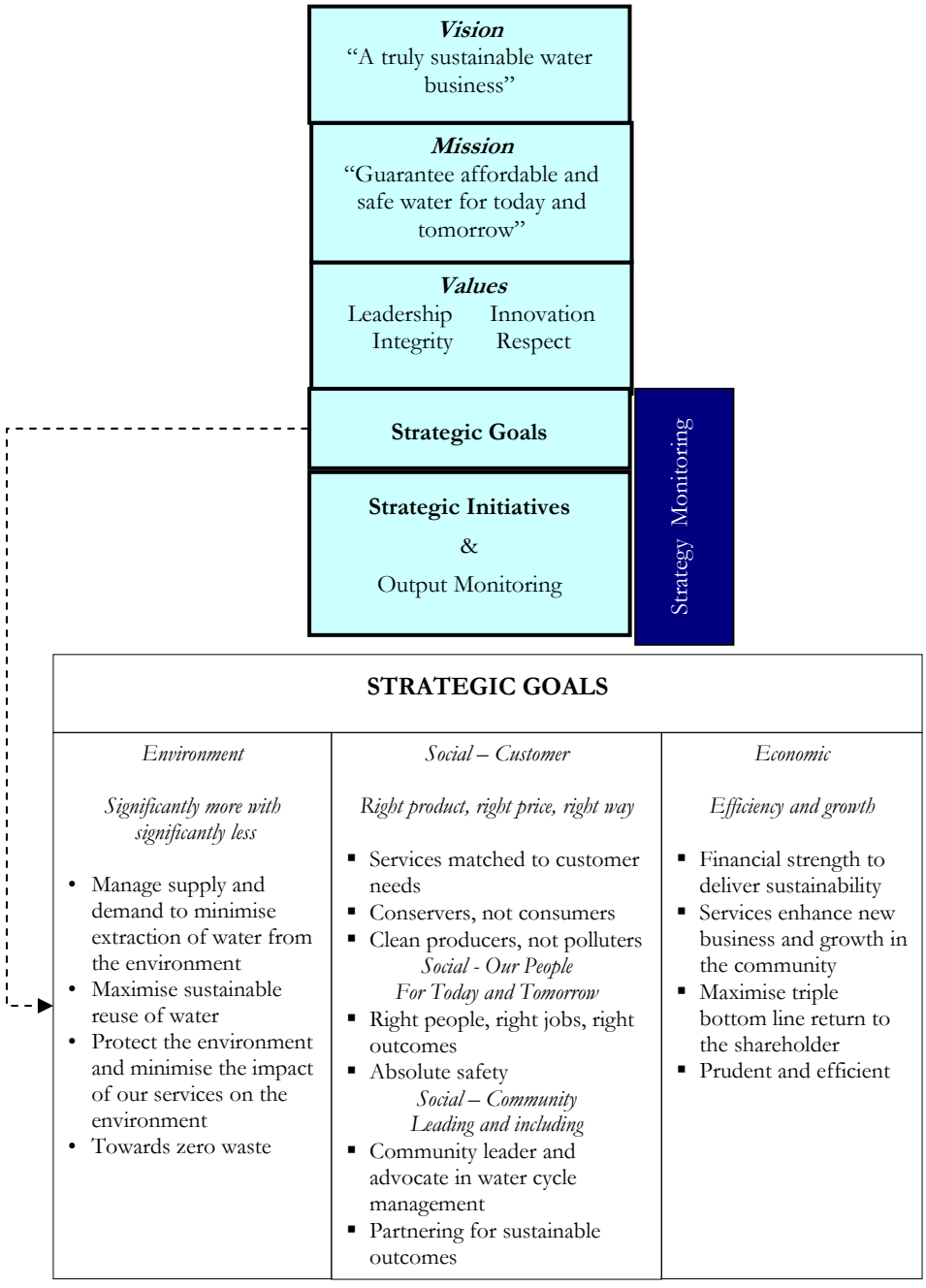
2008/09 Corporate Plan

The Corporate Plan provides a summary of City West Water's strategic direction and documents the key strategic initiatives, priorities, previous 12 months' financial performance, planned financial performance for the 2008/09 year and forecast capital expenditure for the next 10 years. The Corporate Plan is a three-year rolling plan that is prepared annually and endorsed by the City West Water Board. In addition to the Corporate Plan, City West Water also prepares a rolling five-year forecast for capital and operating expenditure on an annual basis. While City West Water no longer produce a separate Statement of Corporate Intent, this is now embedded in the Corporate Plan.

The process for preparing the Corporate Plan begins in November, when City West Water's Vision, Mission and Strategic Goals are reviewed, and the Asset Management Plan (discussed in more detail in Section 4.1.3) is signed off. In December and January the projects and programs to be undertaken in the forthcoming five-year period are developed, in addition to draft five-year capital and operating budgets. In February the draft Corporate Plan for the following year is signed off, with Board approval occurring in March. In April the Corporate Plan is submitted to Government.

City West Water's Vision, Mission and Strategic Goals are outlined below in Figure 4.1. Each project or activity undertaken in City West Water must in some way contribute to the achievement of the Vision, Mission and Strategic Goals.

Figure 4.1: City West Water's Vision, Mission and Strategic Goals



Source: City West Water

Water Plan

The Water Plan is based on the Corporate Plan and Asset Management Plan (discussed below) and identifies the specific actions and required expenditure to meet the targets and objectives set in the Corporate Plan and Asset Management Plan. The Water Plan is based on the objective of maintaining average service levels, that is a "business-as-usual" approach to service standards, with the current Customer Charter setting the baseline for the next regulatory period.

Environmental sustainability plan

In keeping with its corporate Vision to be 'a truly sustainable water business', City West Water has developed an Environmental Sustainability Plan (ESP) to ensure its environmental risks are appropriately managed. While the ESP focuses on City West Water's environmental strategic goals, it balances the environmental considerations of City West Water with social and economic considerations.

City West Water's ESP outlines its plan for environmental management, and details the objectives, programs and targets to enhance City West Water's sustainability by improving environmental performance over the three years from 2008 to 2011. It details the roles and responsibilities for implementing programs, achieving the objectives and targets, as well as reporting requirements. We note that the ESP is also publicly available on City West Water's website.

The ESP outlines each of City West Water's high-level environmental programs for the period from July 2008 to June 2011. The programs are:

- greenhouse gas management
- green office
- reducing lifecycle environmental impacts
- water conservation
- driving environmental improvement in operations
- water recycling
- trade waste management and
- driving a resource efficient future.

Each of the above programs contains a series of strategic goals and objectives relevant to City West Water, relevant background information, specific targets to meet the strategic goals and objectives, and work programs that detail how City West Water plan on achieving the stated targets.

Business drivers

In its Corporate Plan, City West Water has identified five key business drivers that drive the activities undertaken over the next regulatory period and consequently have a financial impact on the business. These are:

- government policy and legislation – the impact of government policy and legislation, including the VCEC inquiry into reform of the Metropolitan Retail Water Sector, the Central Regions Sustainability Water Strategy and *Our Water Our Future,* remains a significant business driver for the business during the next regulatory period
- customers – the introduction of guaranteed service levels in July 2005 and the introduction of drought-related measures that will increase the volume of water available in the system and reduce the volume of water lost from burst water mains will continue to drive the business during the next regulatory period
- regulators – City West Water's obligations to and relationship with regulators such as the ESC, Energy and Water Ombudsman Victoria, the Department of Humans Services and the EPA continue to be a significant business driver
- climate and geology – variable weather and low rainfall continue to impact the level of bursts and leaks, and in turn maintenance requirements and service standards
- demographics – City West Water continues to experience significant urban growth within its licence area, with a sizeable number of greenfield lots forecast to be released in the next regulatory period.

4.1.3 Asset Management Framework

Asset Management Plan

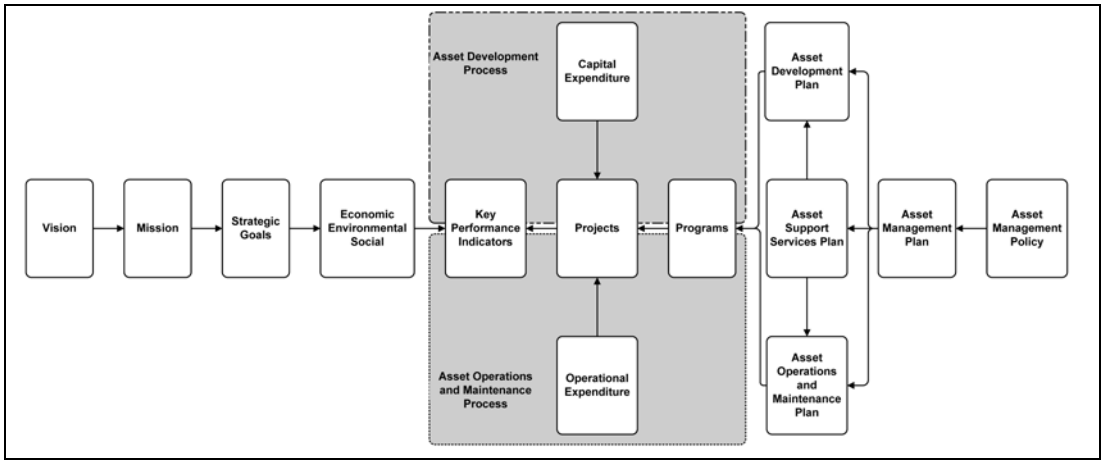
The Asset Management Plan (AMP) is one of the key inputs of City West Water's Water Plan for the next regulatory period, and is designed to contain all the information required to support the asset-related targets and budgets proposed in the Water Plan. The AMP is divided into four separate (although linked) strategic documents, these being:

- asset management overview
- asset development plan
- asset operations and maintenance plan and
- asset support services plan.

As outlined in the AMP, it is a core requirement by City West Water that all asset-related activities are to be linked to either delivering a service to a customer as measured by a key performance indicator, or in satisfying a regulatory requirement.

City West Water's AMP is based on a master business process. This process is outlined in Figure 4.2 below, and links City West Water's corporate Vision and Mission with the AMP through a series of projects and key performance indicators.

Figure 4.2: City West Water's master business process



The above diagram shows that City West Water's Vision and Mission are supported by three strategic goals (economic, environmental and social). These three strategic goals are in turn explained by a number of strategic statements outlined in the Corporate Plan. The achievement of each of the strategic goals, as interpreted by the strategic statements, is measured by a number of key performance indicators.

The key performance indicators are met by undertaking a number of projects, which can be grouped into programs. The programs are in turn grouped into a number of asset plans, with the asset plans governed by City West Water Board policy.

The above process ensures that City West Water's Vision and Mission and Board policy are linked through a number of strategic goals. The achievement of these is measured by a number of key performance indicators, which themselves are met through undertaking a number of projects that are grouped into a number of programs.

Asset Management Policy

Embedded in City West Water's Corporate Plan is the Asset Management Policy, also known as the Asset Investment Philosophy. City West Water's Asset Management Policy sets out the overarching principles, processes and procedures for the management of City West Water's water and wastewater assets.

City West Water's key objective for managing assets, as outlined in the Asset Management Policy, is to ensure that all water and wastewater assets efficiently provide continual service to customers, whilst maintaining environmental sustainability. In addressing this objective, City West Water is committed to asset management that is characterised by investment based on evidence related to asset condition and customer service needs, optimisation of risk, and responsible delivery of lowest life cycle costs.

The focus on evidence reflects City West Water's requirement for obtaining factual and objective information as a prerequisite basis for considering, planning and implementing intervention and investment strategies and actions. City West Water's approach to asset management is based on the risk management methodology and principles of Australian Standard AS/NZA 4360:2005 (Risk Management). In line with this approach, City West Water undertakes optimal management of its assets, which includes:

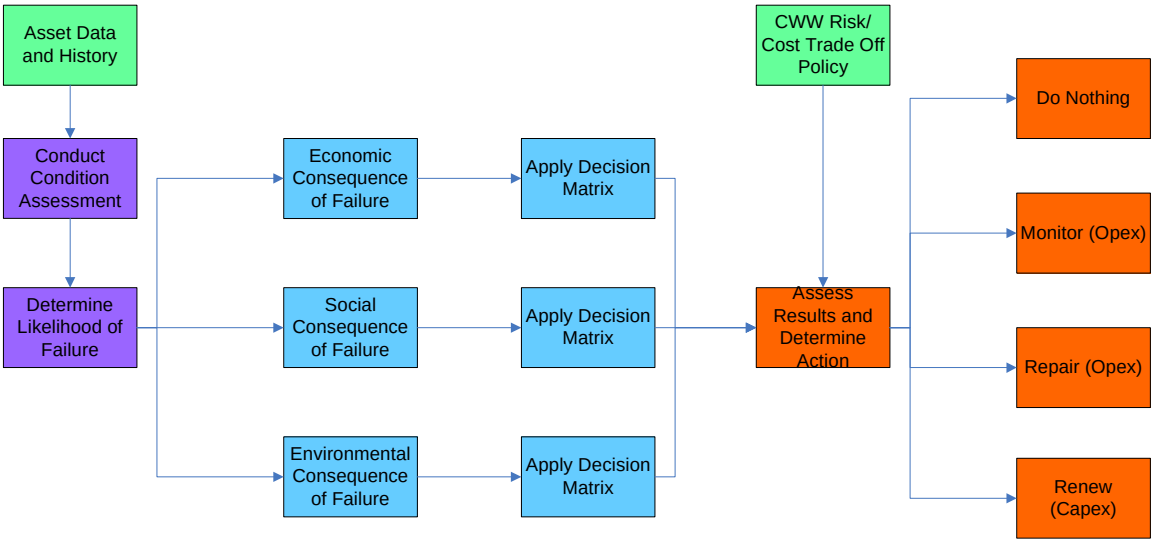
- undertaking risk ranking of network assets in order to assist with prioritisation of interventions
- use and development of investment decision tools that are of robust design, rigorous in their analysis, and consistently applied to identify optimal interventions and
- achieving risk reduction through implementation of optimal interventions, ranging for example, between physical actions such as renewals of assets, to organisational strategies such as planning for responsive contingencies.

City West Water's approach to achieving responsible delivery of lowest life cycle costs for individual assets is to implement optimal interventions at the most appropriate time. The gathering and use of evidence related to historical and likely future performance of assets, as well as environmental, social and economic consequences of changed asset performance is critical to this approach.

City West Water believe that such an approach ensures that investments in assets will only be made to ensure that key performance indicators, reflecting triple bottom line performance, are met and that asset-related risks are kept within acceptable limits.

The following figure provides a schematic overview of City West Water's Asset Management and Planning process.

Figure 4.3: City West Water's Asset Management and Planning process



Source: City West Water

Asset creation policy

Over the next regulatory period, City West Water has budgeted to spend over $30 million on maintenance annually, a sizeable proportion of its annual operational expenditure budget. In order to contain the number of maintenance activities to existing levels, and in the longer term reduce them, City West Water has developed a series of Asset Creation Policies.

City West Water recognises that the quality of design, pipe material, construction practice and fittings all contribute to the long-term performance of assets. If acceptable asset performance is to be achieved then no one element of asset creation can be ignored. As such, City West Water has developed the following asset creation policies to ensure the assets for which City West Water is responsible will meet the needs for today and the future:

- products and materials policy
- design policy
- construction policy
- audit policy
- authorised persons policy.

As noted above, City West Water's goal of putting the above policies into action is to contain the number of maintenance activities to existing levels, and in the longer term to reduce them. Using these policies in conjunction with the asset management policy outlined above, City West Water has set itself the challenge of halving its responsive maintenance (assuming constant KPIs). While City West Water note that there will be no reductions in existing budgets in the short term, its believed that maintenance budgets should slow significantly from their historical growth trends.

Capital works program

As noted above, capital projects are often grouped into capital programs by City West Water as part of the master business process. The development and implementation of capital works nearly always involves more than one City West Water department. As such, City West Water has produced capital works programs and nominated capital works program managers as a means of coordinating its capital works across the business.

City West Water has prepared Investment and Approval Guidelines that outline the role and responsibilities of the program and sub-program managers in relation to both program development and program implementation.

Capital projects are undertaken as means of achieving specified outcomes. As noted above, these outcomes must be linked to either delivering a service to a customer as measured by a key performance indicator, or in satisfying a regulatory requirement.

In developing the specific five, three and one year capital programs, program managers and sub-managers are required to liaise closely with the relevant General Manager. In the implementation of the programs following their approval, the program and sub-program managers are required to work closely with the Capital Coordination Committee. City West Water has seven defined capital works programs: Growth, Backlog, Compliance, Renewals, Water quality, Recycled Water, and Corporate.

Project monitoring and reporting

City West Water's Investment and Approvals Guidelines also outline the expected process for monitoring and reporting on projects.

It is the responsibility of the project managers to carefully monitor their project costs and provide information to facilitate periodical reporting. To assist project managers, City West Water has developed a cost monitoring template.

Project reporting is generally facilitated by the Finance Department. Monthly and quarterly summaries are prepared for the Business Report, which is tabled to Board on a monthly basis. Project managers of major projects may be requested to prepare a separate detailed report to the Board.

Project implementation reviews

As outlined in City West Water's Investment and Approvals Guidelines, it is a requirement that all City West Water projects be subject to a post implementation review (PIR). It is the responsibility of the relevant project managers to prepare the PIR after the completion of a project. The purpose of the PIR is to:

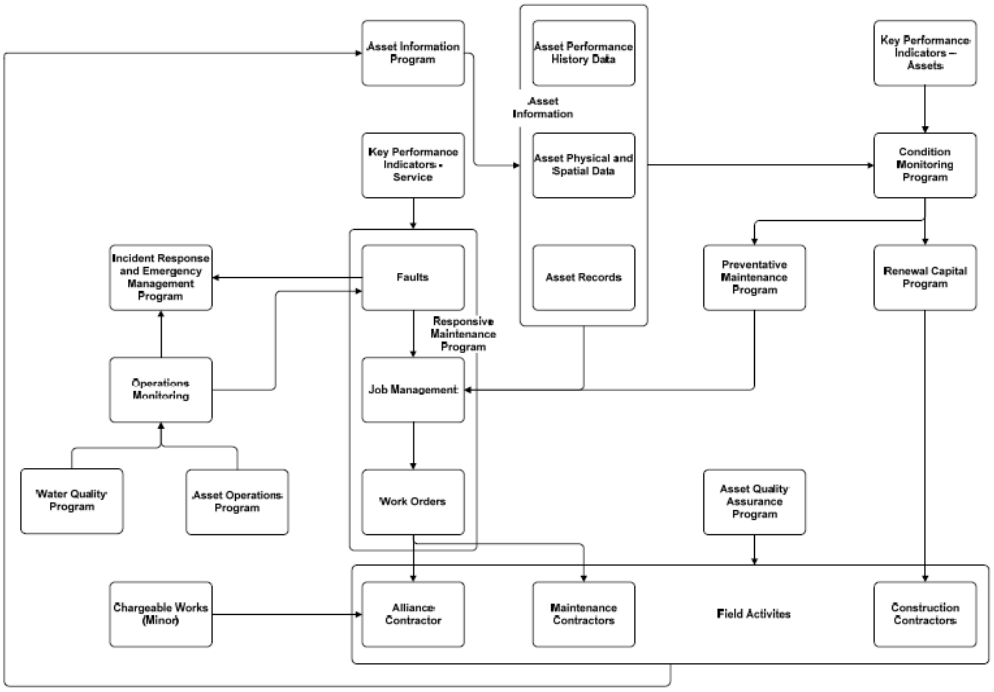
- review whether the project was completed on time and to budget and, if not, to determine the reasons why this was not the case
- assess whether the project benefits identified in the business case were actually achieved and
- capture the lessons learned from the project, for example what did and what didn't work well.

City West Water requires that PIRs for any water, wastewater and recycling project greater than $1.5 million must be submitted to the Executive Management Committee. Additionally, any PIR of a Board approved project should also be submitted to the Board for review and consideration. For projects below the $1.5 million threshold, the PIR is to be reviewed at the General Manager level.

4.1.4 *Operations planning*

City West Water's operations planning process is outlined in Figure 4.4 below.

Figure 4.4: Operations planning process



Source: City West Water

As the above figure outlines, KPIs are the key input into City West Water's operations planning process. City West Water's KPIs not only drive the condition monitoring programs, which in turn drive the preventative maintenance and renewal capital programs, but they also drive the responsive maintenance program. Figure 4.4 also demonstrates how City West Water's asset information program (which includes information such as performance history, physical and spatial data, and asset records), responsive maintenance program and field activities are intrinsically linked.

4.2 *Service standards*

4.2.1 *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 City West Water, ranging from water interruptions to sewer blockages, complaints to EWOV and minimum flow rates. City West Water further proposed (and the ESC approved) nine additional service standards.

City West Water met or exceeded most of their target service standards, on average, over the first regulatory period. The targets that City West Water did not meet (within a 5 per cent threshold) were:

Table 4.1: Service standards not met (2005/06 to 2007/08)

Service standard	Target	Actual	Variance
Unplanned water supply interruptions restored within five hours (per cent)	99	86	13% lower
Average unplanned customer minutes off water supply	41	48	16% higher
Average duration of unplanned water supply interruptions (minutes)	105	176	67% higher
Number of complaints to EWOV per 1,000 customers	0.41	0.55	34% higher
Telephone calls answered within 30 seconds (per cent)	82.4	78.6	5% lower
Account enquiries answered within 30 seconds (per cent)	80.0	74.5	7% lower

City West Water explained that it undertook a change of field practice where water mains are turned off immediately, which has adversely impacted its performance on the first three indicators in Table 4.1, although the current practice has the advantage of saving water. City West Water attributes its failure to meet telephone call answer time targets to an increased number of calls due to restrictions and a new billing system, which also adversely impacted the number of complaints to EWOV.

City West Water performed significantly better[1] on several indicators compared to target in the current regulatory period. These include:

Table 4.2: Service standards 20 per cent or more better than target (2005-06 to 2007/08)

Service standard	Target	Actual	Variance
Average planned customer minutes off water supply	23	8	66% lower
Average frequency of unplanned water supply interruptions	0.39	0.31	21% lower
Average frequency of planned water supply interruptions	0.15	0.06	61% lower
Number of customers experiencing more than 5 unplanned water supply interruptions in a year	250	64	74% lower
Water main breaks per 100km of water main (number)	96	72	26% lower

[1] Which we have identified as beating the target by 20 per cent or more.

4.2.2 *Proposed service standards*

City West Water has proposed service standard targets that mirror its average performance over the three years to 2007/08, with the exception of telephone calls and account enquiries answered within 30 seconds, for which it is proposing a target of 80per cent, which is above the three year average.

However City West Water advised that it was focusing on improving the efficiency of service delivery, which could be expected to result in a relative decrease in the cost of service provision. Whilst it is difficult to establish an exact relationship between cost and service standards, we note that both City West Water's proposed maintenance and customer service forecasts are, for the most part, higher than what has been spent in the current regulatory period.

5 Generic issues

5.1 Overview

This section discusses the engagement 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 over the 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 five year period. Given this increase, in its issues paper the Commission has noted that, in addition to its usual examination of whether proposed expenditures is efficient and prudent, it will also consider: [2]

- 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
- whether some expenditure could be deferred into the following regulatory period

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

- 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 Commission'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 eliminated 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 5.2per cent, with Victoria's unemployment rate well above the average at 5.6per cent
- gross domestic product fell 0.5per cent 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[3] and the RBA[4]. The Government's forecast of key economic parameters is:

Table 5.1: Key economic parameters[5]

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 7per cent by June 2010.

[3] Commonwealth of Australia, *Updated economic and fiscal outlook*, February 2009
[4] Reserve Bank of Australia, *Statement on Monetary Policy*, 6 February 2009
[5] Commonwealth of Australia, *Updated economic and fiscal outlook*, February 2009, p. 7.

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.

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.

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.

City West Water's assumed cost escalation factors for operating and capital expenditure are discussed below.

5.2.2 *Capital expenditure*

The Econtech report

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. Econtech's main forecasts are included below:

Table 5.2: Econtech forecast capital project prices 2008 to 2014

Index	Annual price increase (nominal)
Water distribution	5.7per cent
Reticulation	4.2per cent
Sewerage transfer	3.2per cent
Treatment	2.8per cent
CPI (Australia)	2.6per cent

City West Water forecasts

City West Water has had reference to the Econtech forecasts when determining its capital escalation assumptions. City West Water has advised that, for simplicity, it has applied a single real increase of 2.5 per cent per annum to all capital expenditure (Water Plan, p.32), rather than allocate different escalators to different types of capital expenditure.

Discussion

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

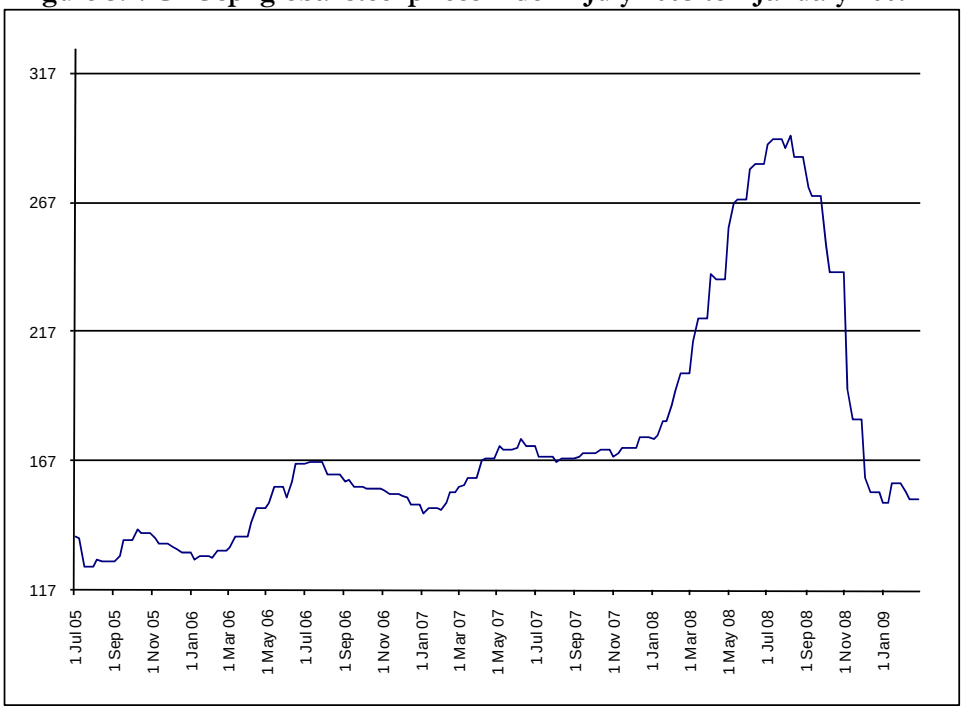
the report was finalised in July 2008, this was a reasonable assumption, as both commodities had indeed experienced sustained increases for some time.

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. The below chart 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 1 July 2005 to 1 January 2009



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 also clear that City West Water's capital escalation factors, based on Econtech's forecasts, are 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 time, over the medium to longer term we believe the CPI provides the best measure of changes in input costs.

Adopting CPI as the escalator in the next regulatory period also has the advantage of simplicity. If something other than CPI was used to inflate future prices, it would be necessary to identify escalators for different services and materials. Some may be forecast to rise relative to CPI, whereas others may fall relative to CPI. On balance, CPI is the best indicator to use, as it represents a bundle of goods and services and is easily accessible.

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 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.

Expenditure adjustment

Using City West Water's price review template provided by the ESC, it was possible to reconstruct what its forecast capital expenditure program would have been had a single capital escalation factor of zero been applied. The capital escalation adjustment has taken account the capital expenditure brought forward for the Dunnings Road to Sneydes Road project (see section 7.5.3). There were Additional adjustments were required for four projects that had a 3.5per cent escalation in costs and these adjustments are reflected in the capital expenditure chapter.

The de-escalation of City West Water's 2.5per cent increase results in a downward adjustment of $35.47 million over the next regulatory period. This adjustment is explained in the below table, with reference to City West Water's original capital expenditure program (as per its Water Plan), our total revised capital expenditure program from Section 7 and our revised capital expenditure program once any escalation above CPI has been removed.

Table 5.3: Recommended capital expenditure adjustment ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
Capital expenditure escalation	Water Plan	90.37	139.80	159.55	109.03	61.49
	Revised forecast (see section 7.6)	91.51	138.66	159.55	109.03	61.49
	Revised forecast excl. escalation	88.11	133.12	148.16	98.77	54.35
	Net change	**-2.26**	**-6.68**	**-11.39**	**-10.25**	**-7.14**

Note: revised forecast excludes adjustment to the four projects where a 3.5per cent escalation was used

5.2.3 *Operating expenditure*

City West Water referred to the Econtech report and also sampled the prices in a number of recent tenders in order to determine operating cost escalation for the next regulatory period. Page 31 of City West Water's Water Plan indicates that it applied a 2.5 per cent real increase per annum to all civil and scheduled maintenance costs.

City West Water provided a detailed list of its operating expenditure forecasts, on a line by line basis. We have identified a number of maintenance lines that would fall under either 'civil' or 'scheduled' maintenance and which are contracted out to third parties. These are:

- scheduled infrastructure maintenance (lab charges)
- AMRS metering contract
- DMS metering contract
- preventative maintenance program – civil
- preventative maintenance program – M&E
- condition monitoring program – civil
- responsive maintenance program – civil.

In our draft report we reduced City West Water's forecast expenditure on these expenditure lines (which totalled $102 million over the next regulatory period) by removing the impact of the 2.5 per cent real escalation each year. City West Water did not respond to our draft report on this matter. Nothing the further deterioration in economic conditions since this time, and anecdotal evidence of reductions in contractor rates, we consider that our removal of this escalation

factor remains appropriate. This results in a recommended reduction to operating expenditure as per Table 5.4.

Table 5.4: Recommended operating expenditure adjustment ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
Operating cost escalation	Water Plan	24.35	24.62	25.15	25.93	26.64
	Revised forecast	23.76	23.44	23.35	23.49	23.55
	Net change	**-0.59**	**-1.19**	**-1.80**	**-2.44**	**-3.09**

5.3 Labour cost increases

5.3.1 Benchmark increases

Initial business proposals

In their Water Plans, each of the businesses 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.[6]

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

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.

Draft report recommendation

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 1 per cent above CPI per annum 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 the table below.

The businesses are now forecasting real wage increases of 1.5 per cent per annum. Which they have noted is consistent with their expectations that their enterprise bargaining agreements (EBA) will be negotiated to allow for a 4 per cent per annum nominal increase in wages over the period.

Table 5.5: 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.[7]

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

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

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.[8]

Labour figures released by the Australian Bureau of Statistics (ABS) on 12 March were worse than generally expected, with national unemployment at 5.2 per cent and Victorian unemployment at 5.6 per cent.[9]

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).[10]

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.

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

[8] Reserve Bank of Australia (2009), *Statement on Monetary Policy*, 6 February 2009
[9] Australian Bureau of Statistics, 6202.0 - Labour Force, Australia, Feb 2009
[10] Bachelard, M. (2009), "How will Victoria's economy fare?", *The Age*, 15 March 2009

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.[11]

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.

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

[11] 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.

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."[12]

VCEC recommended that the annual savings be achieved within six to 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."[13]

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

The following table outlines the savings that each business has included in its Water Plan, less any implementation costs associated with VCEC recommendations.

Table 5.6: Proposed net shared services and bulk procurement savings ($m, 2008/09)

Business	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	1.00	1.50	1.50	1.50	1.50

[12] Victorian Competition and Efficiency Commission (2008), Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector, February 2008, p.xxxi
[13] Victorian Government response to the VCEC inquiry, July 2008 p.7

South East Water	0.00	0.00	0.50	1.50	2.00
Yarra Valley 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 the above table, 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 South East Water and Yarra Valley 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 12 months after the government endorsed the savings. It could therefore be argued that this is the timeframe the government has in mind.

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 their submissions on our draft expenditure report, Yarra Valley Water and South East 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.

Recommendations

We have reviewed the additional information provided by the other retailers and Melbourne Water, 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 and determined that the quantum of savings was between $8 million to $10 million across the industry.

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 reasonable to assume 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 be 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 City West Water's non-residential customers are not analogous to Yarra Valley 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 below.

Table 5.7: 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	per cent of each retailer	Rounded VCEC saving
City West Water	72.41	0.00	72.41	26per cent	1.40
South East Water	110.20	-7.42	102.78	37per cent	2.00
Yarra Valley Water	103.73	-4.78	98.95	36per cent	2.00

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

Table 5.8: Recommended allocation of shared services and bulk procurement savings ($m, 2008/09)

Business	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water	0.00	0.70	1.05	1.40	1.40
South East Water	0.00	1.00	1.50	2.00	2.00
Yarra Valley Water	0.00	1.00	1.50	2.00	2.00
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

City West Water has forecast productivity savings that exceed our recommended allocation. Therefore we have recommended an upward adjustment to City West Water's operating expenditure, as demonstrated in Table 5.9.

Table 5.9: Recommended adjustment to shared services savings ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
VCEC net savings	Water Plan	1.00	1.50	1.50	1.50	1.50
	Revised forecast	0.00	0.70	1.05	1.40	1.40
	Net change	**1.00**	**0.80**	**0.45**	**0.10**	**0.10**

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 1 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 1 per cent. That is, in the first year, the saving would be 1 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 1 per cent of the second year's growth adjusted operating expenditure, and so on.

In its Water Plan, City West Water's calculation of productivity savings is unclear. Page 27 indicates that 2008/09 includes a $1.2 million productivity saving compared to 2007/08, with a further $2.1 million achieved in 2009/10. There are no further contributions to productivity savings (that is, they presumably stay at $3.3 million compared to 2007/08), until 2012/13, when productivity savings apparently reduce by $0.2 million. Page 28 of the Water Plan reports that productivity savings average $2.84 million over the 'forthcoming water plan period', however this would seem to include 2008/09.

City West Water was requested to provide a calculation of its productivity savings, which was received, however did not reconcile to the Water Plan. The schedule provided by City West Water resulted in an average of $2.3 million per annum over the five years to 2012/13.

Irrespective of the reconciliation issues, City West Water's calculation of productivity savings appears conservative. In addition to bulk charges and the environmental contribution (it did not appear to deduct licence fees), when determining its baseline operating expenditure, City West Water has removed:

- labour costs, which according to City West Water had an inbuilt efficiency assumption
- expenditure associated with the Central Region Sustainable Water Strategy (CRSWS), which City West Water considered more akin to a government contribution paid by the businesses
- expenditure related contracts sourced from competitive tendering, which it described as already efficient since it had been market-tested

Notwithstanding these issues, the review of City West Water's remaining operating expenditure forecast has resulted in a number of recommended adjustments that would take City West Water's operating expenditure below the ESC benchmark (see Table 5.11). Based on discussions with the ESC, it is therefore considered unnecessary to make any further productivity adjustment. Since any further productivity adjustment has been more than compensated for by the recommended adjustments, we propose no further change.

Table 5.10: Productivity overview – City West Water ($m)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
City West Water residential customers (000s)	291	298	306	313	321	328
Total operating expenditure 2007/08 ($m)	177.27					
Less Melbourne Water	93.59					

bulk charges						
Less licence fees (ESC, EPA, DHS)	0.70					
Less environmental contribution	10.65					
Total baseline expenditure	**72.33**					
Growth adjusted baseline	72.33	74.19	76.06	77.92	79.79	81.65
1per cent productivity saving		**0.72**	**1.46**	**2.20**	**2.96**	**3.73**
Add VCEC savings		0.00	0.70	1.40	1.40	1.40
Total productivity saving		**0.72**	**2.16**	**3.60**	**4.36**	**5.13**
City West Water proposed productivity saving (p.27 Water Plan)		1.20	3.20	3.20	3.20	3.00
Further productivity adjustment implied		**0.48**	**1.04**	**-0.40**	**-1.16**	**-2.13**
Other recommended adjustments		**1.90**	**1.15**	**-3.93**	**-6.99**	**-7.84**

5.5 Gainshare/painshare and alliance arrangements

5.5.1 Introduction

Each of the businesses, including City West 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: [14]

- 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.

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

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

- 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 *City West Water's alliance arrangements*

City West Water has an alliance arrangement with Programmed Facility Management to undertake maintenance services. City West does not have an alliance arrangement for capital works.

The alliance was entered into in 2003 with a rolling three year term which is subject to annual review and extension. The alliance partner is paid actual costs plus the following margins and painshare/gainshare arrangements:

- a fixed margin which is not at risk. The fixed margin is an annual amount, 1/12th of which is paid monthly
- a KPI payment which is at risk against achievement of KPI's which are aligned with City West Water's corporate KPI's
- a gainshare payment. This amount is at risk against achieving budget
- an efficiency payment. Incentives are also in place to achieve efficiency targets. Incentives provide a 50/50 share between City West Water and Alliance partner of delivered efficiencies.

Although it is not a key objective of this report to review in detail the painshare/gainshare arrangements, we note that the City West Water approach is not symmetrical in that the painshare amounts are capped. We also note that the success of the arrangements, and its ability to ensure savings are passed back to customers is very much dependent on the target cost budgets agreed annually by City West Water and the contractor.

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 City West Water totalling $490.0 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, City West Water's approved operating expenditure was $201.0 million.

Over the same three year period, City West Water has actually incurred $198.8 million, that is, less than was forecast over the regulatory period. In 2007/08, City West Water incurred $6.1 million more than forecast, an increase which City West Water attributes to the drought and the associated cost of conservation programs, water restrictions and higher maintenance costs, which could not have been foreseen at the time of the last price review.

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

City West Water	2005/06	2006/07	2007/08	Total
2005 determination	67.5	67.2	66.3	**201.0**
Actual expenditure	61.6	64.9	72.3	**198.8**
Variance	**-5.9**	**-2.3**	**6.1**	**-2.2**

Source: City West Water regulatory accounts 2005/06 & 2006/07 and price review template 2007/08

In addition to City West Water's controllable expenditure, its actual expenditure in total was less than forecast. Including uncontrollable expenditure such as Melbourne Water's bulk charges, City West Water incurred $530 million in operating expenditure,[15] compared with a $563 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.

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

6.1.2 *Overview of forecast*

City West Water has forecast that its operating expenditure will increase significantly over the regulatory period and almost double in real terms from $177 million in 2007/08 to $350 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: City West Water operating expenditure forecast 2007/08 to 2012/13 ($m, 2008/09)

City West Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water	41.14	43.05	44.23	44.72	45.33	46.08
Wastewater	28.73	31.40	31.79	32.24	33.14	33.47
Recycled water	2.54	3.51	4.10	5.18	6.11	6.10
Controllable expenditure	**72.41**	**77.96**	**80.12**	**82.14**	**84.58**	**85.65**
Major projects				0.92	2.13	2.44
Melbourne Water bulk charges	93.51	117.35	137.15	169.69	207.66	251.30
Licence fees	0.70	0.90	0.53	0.59	0.59	1.12
Environmental contribution	10.65	10.79	10.48	10.19	9.90	9.62
Total	**177.27**	**207.00**	**228.29**	**263.52**	**304.86**	**350.13**

Source: City West Water price review template

Tables 6.3 and 6.4 below summarises City West Water's forecast controllable operating costs from 2007/08 to 2012/13 for water and wastewater. Controllable costs are forecast to rise across the period by 12 per cent for water and 16 per cent for wastewater.

The majority of the increase in expenditure is confined to the operations and maintenance line and the corporate line. As discussed in chapter 5, City West Water's forecast 2.5 per cent increase in maintenance costs was a large factor in the increase in operations and maintenance expenditure, as is City West Water's growing customer base. City West Water attributes the increase in corporate expenditure to the delivery of CRSWS initiatives, higher IT expenses and staff training and development.

The increase in wastewater expenditure is higher than that for water over the next regulatory period, with a larger increase in 2008/09. This is again mostly driven by higher operating and maintenance costs, which is influenced by cost escalation and more customers.

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

City West Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Operations and maintenance	17.68	18.71	19.33	19.65	20.12	20.62
Customer service and billing	8.22	7.97	8.08	8.05	8.16	8.27
GSL payments	0.06	0.07	0.07	0.07	0.07	0.07
Corporate	15.18	16.30	16.75	16.95	16.98	17.12
Total water	**41.14**	**43.05**	**44.23**	**44.72**	**45.33**	**46.08**
Increase over 2007/08		1.91	3.09	3.58	4.19	4.94
Increase over 2007/08 (per cent)		**5per cent**	**8per cent**	**9per cent**	**10per cent**	**12per cent**

Source: City West Water price review template

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

City West Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Operations and maintenance	**11.56**	**13.36**	**13.42**	**13.80**	**14.22**	**14.39**
Treatment	**2.54**	**2.94**	**3.23**	**3.41**	**3.77**	**3.82**
Customer service and billing	**3.92**	**3.98**	**3.98**	**3.98**	**4.04**	**4.10**
GSL payments	**0.06**	**0.07**	**0.07**	**0.07**	**0.07**	**0.07**
Corporate	**10.65**	**11.05**	**11.09**	**10.98**	**11.04**	**11.09**
Total wastewater	**28.73**	**31.40**	**31.79**	**32.24**	**33.14**	**33.47**
Increase over 2007/08		2.67	3.06	3.51	4.41	4.74
Increase over 2007/08 (per cent)		**9per cent**	**11per cent**	**12per cent**	**15per cent**	**16per cent**

Source: City West Water price review template

6.2 Expenditure items

6.2.1 Labour

City West Water proposal

In its Water Plan, City West Water notes that labour costs are expected to increase by 1.1 per cent per annum in real terms.[16] This is in accordance with its assumptions about inflation (2.9 per cent over the period), and expectations regarding increases embedded in its enterprise bargaining agreement (EBA). City West Water has advised that its current EBA expires in June 2009, but noted that a 4 per cent nominal increase in wages was typically agreed.

As shown in Table 6.5, in its Water Plan City West Water proposed a $5.09 million increase in labour operating over 2007/08 levels by 2012/13.

These changes in costs are substantially above the 1.1 per cent indicated in the Water Plan, and reflect the addition of a number of full-time employees (FTEs) and costs for training programs identified by City West Water.

Table 6.5: Ordinary labour operating expenditure (including overtime) ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	19.44					
Increase		1.82	3.54	4.86	4.83	5.09
Total	**19.44**	**21.26**	**22.98**	**24.30**	**24.27**	**24.52**
Increase over 2007/08 (per cent)		**8per cent**	**16per cent**	**22per cent**	**22per cent**	**23per cent**

Note: Labour costs for 2008/09 reflect an increase in FTEs of 31.47. Source: City West Water price review template

Draft report recommendations

In our draft report, we provided a revised forecast of City West Water's labour costs, on the basis of the following adjustments:

- increasing City West Water's actual 2007/08 cost per FTE by 1 per cent per annum to obtain a baseline cost per FTE for each year of the regulatory period
- multiplying the base cost per FTE in each year by City West Water's forecast number of FTEs for that year, taking into account a downward revision for FTEs of 17.6 in 2009/10
- the removal of an additional $0.82 million in expenditure for staff training programs related to its technical officer development program (TODP).

[16] Water Plan, p.60

City West Water revised proposal

In response to the draft report, City West Water:

- proposed 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
- proposed additional costs in relation to defined benefits contributions on the basis of advice provided to by its fund manager
- provided further information around the requirements for additional FTEs over the period.

City West 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.

Cost per full time employee

City West Water has advised that its labour costs include the following:

- ordinary labour
- overtime
- availability allowances
- work compensation
- oncosts.

Total labour costs are determined by subtracting capitalised labour recovery and capitalised labour oncost recovery.

City West Water's total oncost rate based on its actual figures for 2007/08, excluding capitalised labour and oncost recovery, totals 30.2 per cent on top of its base wage rate. 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 City West Water's oncost rate for 2007/08 of 30.2 per cent is reasonable.

City West Water has also advised that it does not budget in advance of actuarial statements for any expense or revenue associated with movements in the value of superannuation fund assets.[17]

In its template submitted to the ESC, City West Water identified total costs per FTE ranging from $88,600 in 2007/08 to $97,700 in 2012/13. The 2007/08 figure

[17] City West Water, item 57 – defined benefits.

is based upon a full cost of labour (direct costs plus oncosts) of $19.4m and 219.5 FTEs, and appears reasonable in comparison with the costs identified by the other businesses, which range from which range from $76,000 per FTE to $104,000 per FTE.

Changes in employee numbers

City West Water is proposing to add an additional 42.07 FTEs to its labour force over the next regulatory period.

Table 6.6: City West Water increase in staff numbers (FTEs)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year	219.46					
Increase in FTEs over 2007/08		31.47	49.07	43.07	42.07	42.07
Total	**219.46**	**250.93**	**268.53**	**262.53**	**261.53**	**261.53**

Source: City West Water template submitted to ESC

The proposed increase over the regulatory period is substantially higher than for other businesses, and represents a 19.2 per cent increase over City West Water's 2007/08 FTE numbers.

City West Water has advised that:

- the increase of 31.47 FTEs in 2008/09 is due primarily to the fact that 2007/08 numbers were deflated due to 16.7 vacancies
- the addition of 15.2 FTEs in 2008/09 in relation to call centre staff does not relate to additional staff numbers, but rather a transfer of temporary staff into permanent positions, which is offset by reductions in agency labour costs from $2.3 million in 2007/08 to $1.7 million in 2008/09 and $0.6 million per annum thereafter
- the significant increase in 2009/10 is largely due to an increase of 15 FTEs for the technical officer development program, most of which had already occurred by February 2009.

In relation to increases in permanent call centre staff, we note the reductions in agency labour costs and also that City West Water is proposing some improvement in its call centre performance for the next regulatory period. Therefore, the additional FTEs appear to be justified.

In relation to its technical officer developer program, City West Water has advised that it expects a 20 per cent rate of attrition in cadets. However, this is not reflected in its forecasts of FTE numbers. Therefore, we have recommended an adjustment to its FTE numbers to remove 2 FTEs per annum from 2008/09.

This brings City West Water's total additional FTEs over 2007/08 numbers to 34.07, which is still the largest increase of any business.

Training programs

City West Water's proposed operating expenditure for labour also includes an additional $0.82 million in expenditure for staff training for the technical officer development programs.

As noted in section 5.3, we consider that any additional costs of training programs should be offset by reductions in staff costs and/or productivity. Therefore we have not included an allowance for this additional expenditure in our revised forecast of labour operating expenditure for City West Water.

Defined benefits contributions

On the basis of advice provided by its fund manager, City West Water has requested that its revenue requirement be increased to allow for additional operating expenditure for defined benefits superannuation contributions. City West Water provided advice from its fund manager confirming the need for additional contributions, and has forecast the following amounts for the next regulatory period.

Table 6.7: City West Water defined benefit superannuation contributions ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Contributions	-	1.46	1.52	1.58	-	-

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

Recommendation

As noted in section 5.3, we consider 1.5 per cent per annum in real terms a reasonable allowance for increases in labour costs over the next regulatory period. Our revised forecast based on this benchmark has been determined by:

- increasing City West Water's actual 2007/08 cost per FTE (as set out above) by 1 per cent per annum to obtain a baseline cost per FTE for each year of the regulatory period

- multiplying the base cost per FTE in each year by City West Water's forecast number of FTEs for that year, taking into account a downward revision for FTEs of 2 FTEs per annum from 2008/09 (i.e. 8 in total)

- providing additional expenditure for defined benefits superannuation contributions, as advised by City West Water.

Table 6.8 sets out City West Water's original Water Plan proposal in relation to operating expenditure for labour, a revised forecast based on our recommendations outlined above, and the net change to City West Water's revenue requirement.

Table 6.8: Overview of recommended changes to labour operating expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Labour costs	Water Plan	21.26	22.98	24.30	24.27	24.52
	Revised forecast	24.02	25.84	25.53	24.02	24.19
	Net change	**2.76**	**2.87**	**1.23**	**-0.25**	**-0.33**

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 can be 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.[18] The subsequent

[18] 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

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.

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 and new contracts are entered into that reflect current energy costs
- 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 tonne 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 or reduction in energy costs that might be brought about by the economic turndown. 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 and that on balance the impact of other factors will be a zero net change in the cost of electricity.

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. City West Water's Statement of Obligations require 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 purchasing 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 (e.g. 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.

We understand from discussions with the EPA that City West Water has entered into a 'sustainability covenant' – a statutory agreement under section 49AA of the EPA Act that commits the EPA and City West Water to work together to assist City West Water to become greenhouse gas neutral. There is no time frame specified for the achievement of this goal.

Water businesses may also have separate agreements regarding energy and greenhouse gas emissions with the EPA in respect of individual capital works projects.

City West Water has set energy and greenhouse gas emission targets across the regulatory period in three separate areas, as shown in the table below.

Table 6.9: City West Water greenhouse gas generation forecasts

	2008/09	2009/10	2010/11	2011/12	2012/13
CO2 generated (tonnes)	9,400	9,100	14,200	18,000	18,000
CO2 green energy/offsets purchased (tonnes	5,900	5,700	10,900	14,700	14,700
CO2 showerhead replacements (tonnes)	9,200	10,300	10,000	10,000	10,000

The increase in greenhouse gas generated and green energy/offsets purchased are a result of the proposed West Werribee and Altona projects, which have been forecast to come on line in 2010/11 and 2011/12 respectively.

City West Water's forecast energy costs

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

City West Water's forecast electricity costs are set out below.

Table 6.10: Forecast energy costs ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
'Black' Energy						
Ongoing operations	0.66	0.98	1.03	1.06	1.09	1.12
Altona recycled water	0.00	0.00	0.00	0.87	1.53	1.57
West Werribee dual pipeline	0.00	0.00	0.00	0.00	0.23	0.47
Green Energy/Offsets						
Ongoing operations	0.00	0.00	0.00	0.18	0.31	0.32
Altona recycled water	0.00	0.00	0.00	0.00	0.05	0.09
West Werribee dual pipeline	0.06	0.09	0.09	0.09	0.09	0.10
Total	**0.72**	**1.07**	**1.12**	**2.19**	**3.30**	**3.68**

As shown in the table, the large increase in electricity costs in the latter years of the regulatory period is primarily due to the energy requirements of the West Werribee and Altona projects. Electricity for these projects is to be sourced partly from green sources. Although we have had some difficulty reconciling City West Water's forecasts, this green energy expenditure appears to reflect a combination of:

- direct green energy purchases equal to 10per cent of total energy purchases
- offset purchases using the AGL "Green Balance Product" whereby electricity is purchased using traditional sources but with emissions offset by greenhouse gas abatement measures.

City West Water indicated that a key condition of works approval of the Altona and Werribee projects from the EPA was the fact that energy was to be obtained from renewable sources. We have spoken to the EPA, who indicated that works approval was not strictly tied to a mandated use of renewable energy. However the EPA strongly supported City West Water's decision to do so, noting the existence of the sustainability covenant.

We note that under City West Water's own figures, its greenhouse gas emissions footprint – i.e. green energy/offsets purchased plus showerhead replacement benefits less direct emissions – is in 'credit'. This would suggest that the carbon

neutrality requirement in the sustainability covenant is more than being met. We also note that the per kWh costs of energy (both from traditional and renewable sources) forecast for the two major new projects is high, and extremely so in the case of West Werribee.

Table 6.11: Average electricity costs per kWh (cents)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
West Werribee					73.9	75.6
Altona				38.0	33.6	34.6

Therefore although City West Water's forecast electricity costs for its existing operations costs appear consistent with the tendered prices and with the other businesses' forecasts, aggregate expenditure on a per unit basis is much higher due to the new projects.

We have recalculated a benchmark electricity cost for City West Water based on the following assumptions:

- 'black' energy purchases at rates proposed by City West Water for its existing sites, with unit prices for the new Altona and West Werribee projects consistent with City West Water's projections for the existing Altona treatment plant
- continuation of 10per cent purchase of green energy
- energy offsets for the difference between City West Water's greenhouse emissions and its offsets (green energy and showerhead replacement)
- offset purchases using the AGL "Green Balance' product nominated by City West Water at a cost of $10.80 per tonne.

We have briefly discussed our revised forecasts with City West Water who have requested further discussion on the figures following the release of this final report. The revised forecast is as follows:

Table 6.12: Calculation of revised energy expenditure ($2008/09)

	2008/09	2009/10	2010/11	2011/12	2012/13
Existing Operations - Black and Green Energy					
Forecast cost (as projected by City West Water)	**1,067,160**	**1,121,250**	**1,152,540**	**1,182,230**	**1,215,520**
Total kWh existing operations	5,862,481	6,084,386	6,267,946	6,469,064	6,592,962
per kWh cost of existing operations	0.182	0.184	0.184	0.183	0.184
West Werribee					
Total kWh				375,000	750,000
Cost per kWh			0.160	0.160	0.166
West Werribee Cost				**60,150**	**124,573**
Altona					
Total kWh			2,737,500	5,475,000	5,475,000
Cost per kWh			0.160	0.160	0.166
Altona cost			**437,092**	**878,191**	**909,383**
Offsets					
No of tonnes to be purchased	0	0	2,780	6,200	6,200
Cost per tonne	10.8	10.8	10.8	10.8	10.8
Offset cost	**0**	**0**	**30,024**	**66,960**	**66,960**
Total cost	**1,067,160**	**1,121,250**	**1,619,657**	**2,187,531**	**2,316,436**

Table 6.13: Overview of recommended changes to electricity expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Electricity	Water Plan	1.07	1.12	2.19	3.30	3.68
	Revised forecast	1.07	1.12	1.62	2.19	2.32
	Net change	0.00	0.00	-0.57	-1.11	-1.36

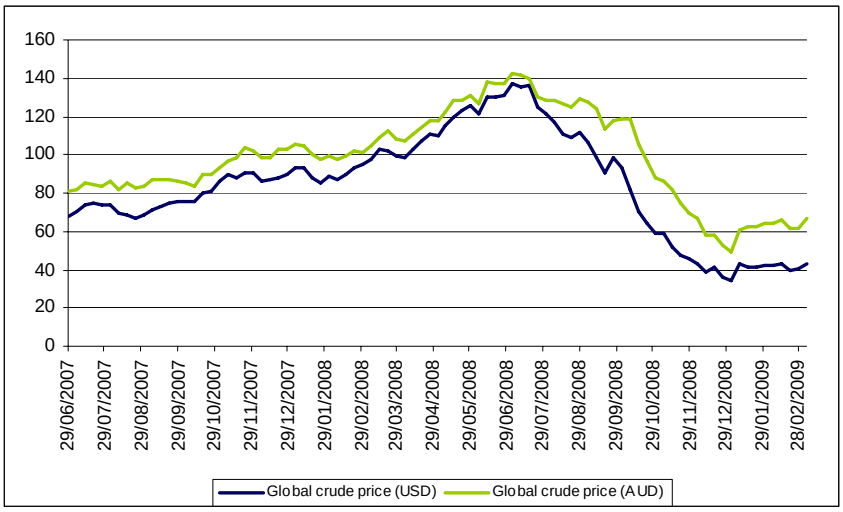
6.2.3 *Oil and fuel costs*

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[19] or approximately $100 AUS in nominal terms (and less in real 2008/09 terms). This is slightly lower than occurred in 2007/08.

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

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.

6.2.4 *Other operations and maintenance costs*

Altona and West Werribee projects

In our draft report we removed operating expenditure associated with the Altona recycled water and the West Werribee Dual Water Supply Scheme projects from the forecasts. However, as discussed in Chapter 7 these projects have now been reinstated.

We note that City West Water has included $0.31 million in their operating expenditure forecasts in 2011/12 in relation to this project. Given that the project is not expected to be commissioned until June 2012, we believe that including the proposed operating expenditure of $0.31 million in 2011/12 is inappropriate. We therefore recommend removing this from City West Water's forecast operating expenditure. The adjustment to City West Water's operating expenditure forecasts is shown in Table 6.14 below.

Table 6.14:Recommended changes to West Werribee Dual Water Supply Scheme operating costs ($m, 2008/09)

		2008/09	2009/10	2010/11	2011/12	2012/13
West Werribee Dual Water Supply Scheme	Water Plan	0.00	0.00	0.00	0.31	0.63
	Revised forecast	0.00	0.00	0.00	0.00	0.63
	Net change	**-**	**-**	**-**	**-0.31**	**-**

6.2.5 *Billing and collection*

City West Water is proposing an increase in operating expenditure for billing and collection services of $0.64 million or 20 per cent in real terms over 2007/08 levels by the end of the next regulatory period.

For the purposes of this chapter and comparison with the other businesses, we have included the following of City West Water's operating expenditure items in the category of billing and collection:

- postage charges
- bill printing
- agency collection expenses
- debt collection (legal expenses and outsourced credit functions).

Table 6.15: City West Water billing and revenue collection operating expenditure ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	3.17					
Increase		0.22	0.38	0.47	0.55	0.64
Total	**3.17**	**3.39**	**3.54**	**3.64**	**3.72**	**3.81**
Increase over 2007/08 (per cent)		**7per cent**	**12per cent**	**15per cent**	**17per cent**	**20per cent**

Source: City West Water item 18 - City West Water opex comparison against ESC's target opex.

Postage and printing

City West Water is proposing an increase in postage and printing costs associated with billing and collection of $0.27 million or 23 per cent above 2007/08 levels by the end of the next regulatory period.

This amounts to an average annual increase of around 3.4 per cent, around 1 per cent per annum higher than City West Water's forecast customer number growth of around 2.5 per cent per annum.

Given the potential for increases in postage and printing costs should more customers move onto more regular payment arrangements as a result of City West Water's price increase, we consider that an allowance for these costs above customer growth levels is reasonable.

Agency collection expenditure

City West Water is proposing an increase in agency collection operating expenditure of $0.38 million or 22 per cent above 2007/08 levels by the end of the regulatory period. Agency collection expenditure is based on the number of payment transactions processed multiplied by average unit cost. City West Water has advised that increases in expenditure are due to:

- assumed customer growth of 3 per cent per annum. This increase was applied from 2007/08 to 2008/09 and for each year of the regulatory period
- increases in contract prices from 2007/08 to 2008/09 and for the first year of the regulatory period.

City West Water advised that changes in average unit costs for agency collection expenses are affected by a number of factors, including past history and assumptions about:

- changes in method of payment, i.e. customers may move from more expensive payment channels to less expensive payment channels, or vice versa
- changes in the number of payment transactions per customer, i.e. customers may move to instalment payments increasing the number of payments made.

Typically, only merchant service fees for credit card payments increase directly in proportion to the value of payments. Other collection charges, such as for direct debit payments from bank accounts and credit cards are usually applied on a per transaction basis, and bear no relationship to the size of the bill.

We consider that City West Water's forecast of increased operating expenditure for agency collection is appropriate.

Debt collection

City West Water is proposing only small increases in debt collection costs, with increases occurring from 2007/08 to 2008/09 and for the first year of the next regulatory period only, resulting in an increase of $0.04 million or 9.6 per cent over 2007/08 levels by the end of the period.

City West Water has identified increases in costs for legal expenses for debt recovery, and outsourced credit functions. These increases appear to match City West Water's expectations about recovery of legal costs, which increase from 2007/08 to 2008/09 and then flatten out for the rest of the period.

We consider that City West Water's proposal represents a reasonable approach to increased operating expenditure for debt collection.

Recommendation

We have not recommended any adjustments to City West Water's proposed operating expenditure for billing and collection services.

6.2.6 Conservation programs

Background

Each of the metropolitan businesses has proposed expenditure 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 industry is shown in Table 6.16. The majority of this expenditure is related to new obligations and would not have been incurred five years ago.

Table 6.16: Total water conservation expenditure by businesses ($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 6.17.

Table 6.17: Water conservation expenditure per customer ($ 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 Commission 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.*[20]

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.*[21]

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

[20] Victorian Competition and Efficiency Commission 2008, Water Ways: Inquiry into Reform of the Metropolitan Retail Water Sector, final report, February.
[21] Victorian Auditor-General, Planning for Water Infrastructure in Victoria, April 2008, p.28.

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.[22] 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.

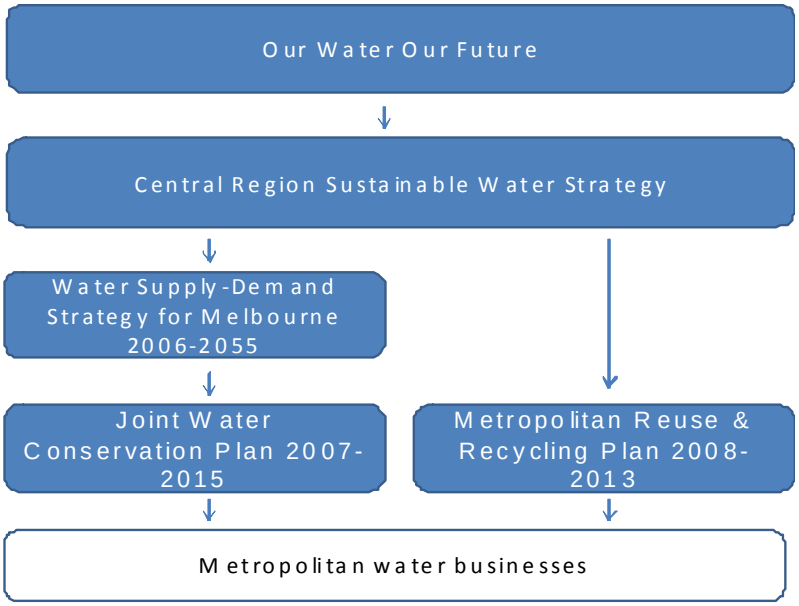
Policy framework for water conservation

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 15per cent 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.

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

Figure 6.2: Policy framework for water conservation in metropolitan Melbourne



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.

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 per cent 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 follows:

Table 6.18: Water savings under the JWCP to meet targets[23]

	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 million. 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 provides a mapping of 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.

City West Water's proposal

In its Water Plan City West Water forecast that its expenditure on conservation programs will increase by 15 per cent from $7.27 million in 2007/08 to $8.32 million in 2012/13. In response to the draft report City West Water revised its forecast for 2009/10 to include an additional $1.62 million for the Target 155 program. City West Water's conservation expenditure is outlined in Table 6.19.

[23] Note this table includes only additional savings and only those savings that have been directly allocated to each of the four. businesses

Table 6.19: City West Water's conservation expenditure ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Direct costs of administering restrictions (e.g. advertising, publications, customer contacts etc)	0.20	0.22	0.22	0.22	0.22	0.22
General behavioural change (e.g. advertising, publications, customer advice etc not directly related to restrictions or covered by other programs)	0.00	0.40	0.29	0.29	0.29	0.29
Showerhead replacement	1.95	2.34	2.49	2.51	2.61	2.44
Washing machine and other appliance replacement/rebates	0.10	0.10	0.10	0.10	0.10	0.00
Industrial and commercial sector water savings programs (i.e. WaterMAPS)	3.24	3.50	3.27	2.96	2.94	2.53
Smart Water Fund	1.15	1.13	1.10	1.06	1.03	1.18
Staff training	0.03	0.03	0.03	0.03	0.03	0.03
Research and development	0.31	0.30	0.30	0.30	0.30	0.33
Costs related to development of next CRSWS	0.00	0.00	0.24	0.11	0.00	0.00
Non-revenue water (leak detection/ prevention)	0.70	0.73	0.75	0.78	0.80	0.56
Total Water Plan proposal	**7.27**	**8.10**	**8.64**	**8.79**	**8.36**	**8.32**
Revised proposal in response to draft report	**7.27**	**8.10**	**10.26**	**8.79**	**8.36**	**8.32**

City West Water's forecast expenditure on most programs is relatively consistent. Aside from the Target 155 program, the largest increase in forecast expenditure is for its showerhead replacement program, which is increasing from $2.44 million in 2007/08 to $2.61 million in 2012/13. We note that City West Water has advised that this includes water audit costs, however our analysis of the unit costs and targets under the showerhead program suggests that this is not a material amount.

The forecast cost of the showerhead program depends on the forecast number of showerheads replaced and the forecast unit cost per showerhead. In terms of the number of showerheads to be replaced, City West Water is forecasting that it will replace approximately 25,000 showerheads in each year of the next regulatory

period (see Table 6.20). This is consistent with City West Water's target under the JWCP and is less than the number of showerheads replaced by City West Water in 2007/08. While we expect that there is some risk to these targets as it becomes increasingly difficult over time to achieve uptake, City West Water's target therefore seems reasonable.

Table 6.20: Number of showerhead replacements

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Number of showerhead replacements	33,800	22,800	25,460	24,700	25,080	25,840

In 2007/08 City West Water undertook 33,800 showerhead replacements[24] at a total cost of $2.44 million, which implies a unit cost per showerhead replacement of $71.80. This compares to Yarra Valley Water's unit cost per showerhead of $30 in 2007/08. City West Water is forecasting the average cost of a showerhead replacement to increase by 39 per cent to $100.08 in 2011/12. City West Water has advised that this reflects the likelihood that it will be more costly for businesses to encourage take up over time, with more retrofit replacements (using a plumber to attend the premises) needed compared to the exchange method. The retrofit method has an estimated cost of $120 per replacement while the exchange method has an estimated cost of $70.

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 City West 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 City West Water's future targets 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.

[24] Email from City West Water, 12 December 2008.

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 City West Water's forecast expenditure be reduced by $6.16 million over the next regulatory period to reflect a reduction in the allowance for the unit cost of a showerhead replacement to the cost of an exchange (i.e. no retrofitting cost) proposed by Yarra Valley Water for each year of the period. This reflects our view that the cost of a customer initiated replacement proposed by Yarra Valley Water represents efficient costs. This reduction includes $1.6 million in 2009/10, $1.5 million in 2010/11, $1.5 million in 2011/12 and $1.6 million in 2012/13.

City West Water is also forecasting a gradual increase in the leak detection/prevention program from $0.70 million in 2008/09 to $0.8 million in 2012/13. In the two years to 2007/08, City West Water achieved a reduction in losses per connection of about 25per cent[25]. Some of this reduction may be attributable to the leak detection/prevention program while some may be attributable to reduced water flows due to water restrictions. On balance the forecast expenditure seems reasonable.

City West Water is also forecasting little or no change in expenditure from 2007/08 levels for both its administration of restrictions and its behavioural change program. This expenditure needs to be reviewed in light of planned supply augmentation and the expected move out of restrictions.

However, given that the long-term headline targets for water conservation set out in the CRSWS are currently being met or exceeded, and that the measures noted above are not specific to particular actions established under the JWCP, it is our

[25] ESC performance data.

view that it is reasonable to expect expenditure on these water conservation measures to decline as restrictions are lifted. In taking this view we note that the Target 155 program is temporary and that lifting of restrictions from 2011/12 is being forecast. We also believe that customer awareness about restrictions and 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. We therefore consider that it is reasonable to phase out 30per cent of City West Water's expenditure on this measure between 2011/12 and 2012/13. This results in the following changes:

- for expenditure on restrictions a reduction of $0.03 million in 2011/12 and $0.07 million in 2012/13
- for expenditure on its behavioural change program a reduction of $0.04 million in 2011/12 and $0.09 million in 2012/13.

In relation to City West Water's forecast expenditure of $0.35 million on the development of the next CRSWS, we accept that the businesses may incur some additional costs, for example in relation to the engagement of consultants. A review of Yarra Valley Water's proposed expenditure shows that it is proposing $0.26 million of expenditure in 2010/11 to develop the CRSWS plus $0.11 in additional expenditure for that year on research activities for water supply demand planning. City West Water's expenditure compares reasonably against this benchmark.

City West Water has also forecast $1.62 million expenditure in 2009/10 on the Target 155 program. As this program was introduced by the Government after submission of the Water Plan in November 2008, the proposed expenditure is in addition to what was originally proposed. 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 City West Water's proposed expenditure per customer of $5.30 for 2009/10 is at the higher end of the range of what has been proposed by the retailers: South East Water is proposing an average of $3.50 per customer in 2008/09 and 2009/10.

We do not believe that there is sufficient justification for City West Water to be spending significantly more than South East Water on this program on a per customer basis. We therefore recommend that City West Water's proposed expenditure be increased by only $1.07 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.).

Recommendations

Table 6.21 sets out City West Water's original proposal in relation to additional expenditure for water conservation, a revised forecast based on our recommendations outlined above.

Table 6.21: 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	8.10	8.64	8.79	8.36	8.32
	Revised forecast[1]	6.83	8.14	7.29	6.78	6.59
	Net change	-1.27	-0.50	-1.50	-1.58	-1.73

Note: 2008/09 expenditure does not include City West Water's expenditure on the Target 155 program. 2009/10 does include Target 11 expenditure.

6.2.7 *Information technology*

City West Water is proposing only small increases in information technology (IT) operating expenditure for the next regulatory period.

Table 6.22: Information technology costs ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Base year expenditure	5.54					
Increase		0.03	-0.02	0.15	0.16	0.16
Total	**5.54**	**5.57**	**5.52**	**5.69**	**5.69**	**5.70**
Increase over 2007/08 (per cent)		**0.3per cent**	**-0.2per cent**	**1.6per cent**	**1.6per cent**	**1.7per cent**

Source: City West Water file 'Item 18 – City West Water Opex against ESC's target Opex'.

The increases proposed are due to increases in software licensing costs associated with an upcoming data warehousing project. These additional licensing costs are offset to some extent by reductions in service level agreement (SLA) costs and time and materials support costs.

We consider that increases in licence costs for data warehousing are likely to be largely unavoidable and have not recommended any adjustments in relation to additional IT licensing costs identified by City West Water.

Recommendation

We have not recommended any adjustments to City West Water's proposed operating expenditure for IT.

6.2.8 *Other expenditure*

In relation to operations and maintenance expenditure, we note that the proposed expenditure increases modestly each year for each of the three water services (water, wastewater and recycled water). City West Water's proposed operations and maintenance expenditure is outlined in Table 6.23 below.

Table 6.23: Operations and maintenance expenditure ($m, 2008/09)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water – operations and maintenance	17.68	18.71	19.33	19.65	20.12	20.62
Increase over 2007/08 (per cent)	-	**5.8**	**9.3**	**11.1**	**13.8**	**16.6**
Wastewater – operations and maintenance	11.56	13.36	13.42	13.80	14.22	14.39
Increase over 2007/08 (per cent)	**-**	**15.5**	**16.1**	**19.4**	**23.0**	**24.5**
Recycled water – operations and maintenance	0.61	1.29	1.85	1.07	2.00	2.05
Increase over 2007/08 (per cent)	**-**	**111**	**203**	**75**	**228**	**236**

Source: City West Water Template

As can be seen, the increase in operations and maintenance expenditure for water services is fairly modest, increasing by 16.6 per cent over the entire regulatory period. This is to be expected given City West Water's expanding network and asset base.

While operations and maintenance expenditure for wastewater appears to increase considerably in 2008/09 from 2007/08 levels, this is exaggerated by the fact that expenditure in 2007/08 was low in terms of historical expenditure. Expenditure in 2004/05 was $12.99 million. We have no concerns with the level of proposed wastewater operations and maintenance expenditure.

The biggest increase in operations and maintenance expenditure occurs in recycled water. However, this is expected due to the level of recycled water related capital expenditure proposed by City West Water in its 2009 Water Plan. We do not consider the level of expenditure proposed to be an issue.

Recommendation:

We have not recommended any adjustments to City West Water's proposed operating expenditure for operations and maintenance.

6.2.9 *Efficiency arrangements*

As noted in Chapter 5, amongst other things City West Water's alliance contractor is eligible to receive an efficiency payment, if efficiency savings are achieved. Efficiency savings – cost reductions below budget - are shared 50/50 with City West Water.

City West Water has advised that an estimate of efficiency sharing payments has been included in the forward estimates of expenditure for 2008/09 (of $175,000) and 2009/10 ($275,000 – assuming half of targeted savings are achieved). This is based on a specific three year efficiency program which has been agreed with the alliance partner. Beyond this time no efficiency savings have been included in the forecast and payments will be paid from delivered savings.

6.2.10 *Not prescribed*

City West 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 below.

Table 6.24: 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.

Our analysis of City West Water's profit on not prescribed services (which we note are generally consistent with the profits forecast in the current regulatory period), indicates that either:

- City West 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. However, we note that information provided by City West Water on this expenditure has been internally inconsistent, with supporting information not reconciling to information in the Water Plan template.

Noting the large price rises for water and wastewater services proposed by City West 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 $6.03 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 6.25 sets out a revised forecast for City West Water's prescribed expenditure based on the recommendations outlined above.

Table 6.25: Overview of recommended changes to prescribed expenditure ($m, 2008/09)

Expenditure item		2008/09	2009/10	2010/11	2011/12	2012/13
Reallocation from prescribed to not prescribed	Water Plan	0.00	1.38	1.39	1.40	1.42
	Revised forecast	0.00	0.00	0.00	0.00	0.00
	Net change	0.00	-1.38	-1.39	-1.40	-1.42

6.3 *Conclusions and recommendations*

For the reasons set out above, we recommend that the following changes be made to City West Water's operating expenditure forecasts:

Table 6.26: Overview of recommended changes to operating expenditure ($m, 2008/09)

City West Water	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Total Water Plan operating expenditure	177.27	207	228.29	263.52	304.86	350.13
Recommended adjustments						
Maintenance cost escalation		-0.59	-1.19	-1.80	-2.44	-3.09
VCEC productivity		1.00	0.80	0.45	0.10	0.10
West Werribee Dual Water Supply Scheme		0.00	0.00	0.00	-0.31	0.00
Labour costs (including defined benefits contributions)		2.76	2.87	1.23	-0.25	-0.33
Water conservation		-1.27	-0.50	-1.50	-1.58	-1.73
Reallocation from prescribed to not prescribed		0.00	-1.38	-1.39	-1.40	-1.42
Electricity		0.00	0.00	-0.57	-1.11	-1.36
Total adjustments		**1.90**	**0.60**	**-3.58**	**-6.99**	**-7.84**
Total recommended operating expenditure		**208.90**	**228.89**	**259.94**	**297.87**	**342.29**

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 City West Water totalling $120.0 million (in 2004 dollars) for the three years to 2007/08. Converting the currency to 2009 dollars, City West Water's approved capital expenditure was $137.7 million.

Over the same three year period, City West Water has actually incurred $215.8 million, overspending by a total of $78.0 million.

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

Business	2005/06	2006/07	2007/08	Total
2005 determination	46.6	48.2	42.9	**137.7**
Actual expenditure	70.8	68.9	76.0	**215.8**
Variance	**24.2**	**20.7**	**33.2**	**78.0**

City West Water attributes the variance in capital expenditure mainly to:

- cost over-runs for the Altona Treatment Plat. As part of a design review, a number of changes were recommended to ensure compliance with EPA licence conditions
- the adoption of a new risk assessment model for determining renewals expenditure. City West water noted that this was expected to result in a lower level of ongoing renewals expenditure going forward
- additional expenditure due to more rapid growth than forecast in Point Cook.

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
- 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*

City West Water has proposed a capital expenditure program of $469.9 million over the next regulatory period. This is a significant increase compared to historic levels. The following table (Table 7.2) provides a breakdown of City West Water's estimated capital expenditure over the next regulatory period by service. As can be seen, City West Water's total estimated capital expenditure is expected to increase significantly from 2008/09 to 2010/11 before falling in 2011/12 and 2012/13. In real terms, capital expenditure in 2012/13 is predicted to be lower than in 2007/08.

Table 7.2 Proposed capital expenditure ($m, 2008/09)

Business	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
Water	41.93	45.79	51.44	57.07	51.13	41.13
Wastewater	30.20	41.57	39.83	32.09	19.32	19.14
Recycled Water	3.91	3.01	48.53	70.39	38.58	1.19
Total Expenditure[26]	**76.04**	**90.37**	**139.80**	**159.55**	**109.03**	**61.49**

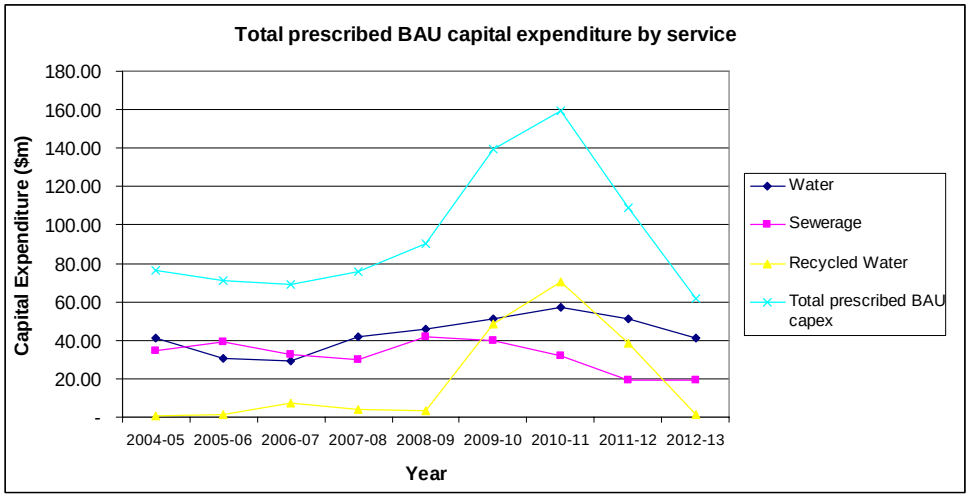
Source: City West Water Template submitted to ESC

The increase in capital expenditure over historical levels is largely driven by increases in recycled water services. The proposed capital expenditure on water is more consistent with City West Water's historical spend levels, while expenditure on wastewater services is slightly lower than historical levels. This is illustrated in the figure below, which graphs City West Water's actual and proposed prescribed BAU capital expenditure over the period from 2004/05 to 2012/13.

The increase in capital expenditure over historical levels is predominantly the cause of two major projects, namely the West Werribee Dual Water Supply Scheme and the Altona Recycled Water Project. Together, these proposed projects account for $130.4 million over the next regulatory period, equivalent to 31 per cent of City West Water's total capital expenditure program. These projects are discussed in more detail in Section 7.4.

[26] This figure includes government and customer contributions.

Figure 7.1: Total prescribed BAU capital expenditure by service ($2009m)



Source: City West Water Template BAUCapex_AC_FO

The following sections discuss each of the three areas of capital expenditure in greater detail.

7.1.3 Water

Water related capital expenditure by City West Water is expected to remain relatively stable during the next pricing period, with a minor peak in expenditure anticipated between 2009/10 and 2011/12, before falling back to 2007/08 levels in 2012/13. The most significant water capital expenditure items include:

- City West Water's mains renewal program for reticulation and distribution – $39.1 million and $32.7 from 2008/09 to 2012/13 respectively
- City West Water's mains renewal program designed to ensure KPI attainment – approximately $20.2 million from 2008/09 to 2012/13
- the 1150 mm main from Sayers Road to Dohertys Road project – approximately $13.1 million from 2008/09 to 2012/13
- the West Werribee 750 mm inlet/outlet main – approximately $12.3 million from 2008/09 to 2012/13
- City West Water's new meter program – approximately $10.2 million from 2008/09 to 2012/13

The predominant cost driver for City West Water's water-related capital expenditure in the next pricing period is renewals.

7.1.4 *Wastewater*

Wastewater related capital expenditure by City West Water is expected to fall over the next pricing period, from a high of $41.57 million 2008/09 to $19.14 million in 2012/13. The most significant Wastewater capital expenditure items include:

- the Derrimut Interceptor Sewer – approximately $31.9 million from 2008/09 to 2010/11
- developer reimbursements for sewer works – approximately $24.5 million from 2008/09 to 2012-12
- City West Water's sewers renewal program (environmental risk) for reticulation and transfers – approximately $7.6 million from 2008/09 to 2012/13
- City West Water's sewers renewal program (economic risk) for reticulation and transfers – approximately $5.5 million from 2008/09 to 2012/13.

From 2008/09 to 2010/11, the predominant cost driver for capital expenditure in City West Water's Wastewater business is growth. However, from 2011/12 renewals begin to exceed growth as the dominant cost driver.

7.1.5 *Recycled Water*

As Table 7.2 shows, recycled water related capital expenditure is expected to vary significantly during the next pricing period. Expenditure is anticipated to increase in 2009/10 to approximately $48.5 million, and again in 2010/11 to just over $70 million. This significant increase over City West Water's historical levels of expenditure is almost exclusively related to the West Werribee Dual Water Supply Scheme and the Altona Recycled Water Project, estimated at $72.3 million and $59.2 million respectively.

City West Water has indicated that the dominant cost driver over the coming pricing period for Recycled Water capital expenditure is compliance, which is the driver for both the West Werribee Dual Water Supply Scheme and the Altona Recycled Water Project.

7.2 *Ability to deliver capital program*

City West Water's proposed capital program for the next regulatory period is more than double the capital program delivered during the 2005 regulatory period. As outlined in City West Water's 2009 Water Plan, the nominated top five capital projects account for approximately $176 million (which is equivalent to 42 per cent) of its proposed capital program. These projects are the West Werribee Dual Water Supply Scheme, Altona Recycled Water Project, Derrimut Interceptor Sewer and 1150mm main from Sayers Road to Dohertys Road.

Delivery of this expanded capital program is likely to pose a number of challenges to City West Water. There are two reasons for this.

Firstly, uncertainties still remain regarding a number of City West Water's major projects. For example, the West Werribee project has been subject to a number of major delays already, and is yet to be approved by the City West Water Board or DTF. In addition, the large increase in proposed spending will challenge City West Water's capital delivery systems and processes.

Secondly, there is a large capital works program in the water industry more generally. 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 over the same period. 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 City West Water's program, however this pressure is likely to be significantly less than might have been forecast 12 months ago due to:

- a rapidly slowing economy with significantly 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 substantially less 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.

While we recognise that City West Water delivered a capital program of $215.8 million for the three years to 2007/08, we note that City West Water were unable to fully deliver a number of significant capital projects, such as the West Werribee Dual Water Supply Scheme, the Altona Treatment Plant (golf courses – now part of the Altona Recycled Water project), and the Werribee Technology Precinct project as originally proposed.

7.3 Capital escalation

As noted in Chapter 5, City West Water escalated its capital expenditure costs by 2.5 per cent real per annum. Due to the reasons outlined in Chapter 5, we have

scaled back City West Water's escalation to ensure its capital forecast increases by no more than CPI.

7.4 City West Water top 10 capital projects

The following Section reviews the top ten capital projects contained in City West Water's proposed capital program.

7.4.1 *West Werribee Dual Water Supply Scheme*

We noted in our Draft Report that we had a number of concerns with the deliverability of the West Werribee Dual Water Supply Scheme. More precisely, we identified that the project was yet to go through the Gateway Review Process, was yet to be approved by the City West Water Board and had not yet received DTF approval. As such, based on the information available at the time, it was our view that there was a risk that the project may be required to be amended during these approval stages, resulting in a significant delay to the commencement of the project.

We also noted that the transfer mains and associated pipelines, a significant aspect of the project, had yet to be completed or costed. Additionally, the project is yet to go out to public tender, meaning that there is a significant risk that the final cost of the project could vary from the estimated project cost provided in the Water Plan.

In addition to our above concerns, we also noted in the Draft Report that we had received insufficient information to provide the necessary level of confidence in the rigour and robustness of the estimated capital cost of the project. As such, for the purposes of the Draft Report we recommended removing the project from City West Water's proposed capital program for pricing purposes.

In response to the Draft Report, City West Water provided additional information in relation to the deliverability of the project, including a detailed analysis of the project, a detailed work program, and strategies to complete the various approval milestones. Our review of the West Werribee Dual Water Supply Scheme, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The West Werribee Dual Water Supply Scheme aims to supply fit-for-purpose Class A recycled water from Melbourne Water's Western Treatment Plant (WTP), via a salt reduction plant and pipeline, to approximately 19,200 residential households and open spaces in the West Werribee growth area.

This project has been developed by City West Water as part of its overall commitment to sustainable resource management, which is demonstrated by its corporate Vision of being "a truly sustainable water business". The project is also consistent with the strategic objectives identified in City West Water's Corporate Plan and the whole-of-government objectives outlined in the Central Region Sustainable Water Strategy (CRSWS).

The driver for this project is compliance with the Government's target for 20 per cent of wastewater to be recycled by 2010.

The project will provide Class A recycled water for residential toilet flushing and garden watering as well as irrigating open spaces. The project will be delivered to two development areas:

- Stage 1 – will service an estimated 9,250 lots and 194 hectares of open space in developments that are currently under construction. All lots are expected to be fully developed by 2032
- Stage 2 – represents the expansion of the recycled water supply network to areas of future residential development, estimated to comprise an additional 9,950 lots. Residents in the second development area are expected from 2011 with full development and occupation by 2035.

The initial project investment (i.e. the investment outlined in the Water Plan and this Review) comprises the construction of a 6ML/day salt reduction plant, which when "shandied" with Class A recycled water will provide up to 10ML/day of fit-for-purpose recycled water to meet demand until 2019. The initial investment also includes the construction of a pump station, transfer pipelines and storage to provide recycled water to residential developments in Manor Lakes, Bluestone Green and Riverwalk and for open space irrigation.

As the second development area expands, subsequent investment will involve modular augmentation of the salt reduction plant (forecast to be in 2019) to provide an additional 8.2ML/day capacity, generating a "shandied" additional capacity 13.7ML/day of fit-for-purpose recycled water and the extension of the network to include future residential development with the existing urban growth boundary.

We believe that City West Water's proposed staged approach to delivering Class A recycled water to the West Werribee growth area is a prudent risk mitigation strategy. Staging the project enables City West Water to evaluate the technology and optimise operations at the salt reduction plant, and collect additional recycled water usage data to inform the specifications of the expanded scheme. The

proposed staged approach also allows for the deferral of some capital expenditure, thereby optimising whole-of-life project costs.

We also note that City West Water has indicated that an expansion of the project due to the new urban growth boundaries will be investigated when further details of the new boundaries have been finalised. Initial preliminary investigations by City West Water have indicated that, due to the distance from the WTP and the increasing elevation of terrain, areas within the expected new urban growth boundary may be more effectively serviced by alternative sources.

Background

Due to the high salt concentration in the recycled water sourced from the WTP, the recycled water needs to be treated to improve its domestic use. This was originally intended to be undertaken by Melbourne Water through the construction of a salt reduction plant, with the treated water then supplied to City West Water. As such, Melbourne Water undertook an investigation into the feasibility of constructing a salt reduction plant.

The result of this investigation was an expected cost for low-salt recycled water that would make the West Werribee Dual Water Supply Scheme financial unviable for City West Water. This was in large part due to Melbourne Water's proposal to construct a single stage treatment plant with a 78 ML per day capacity. In 2006, City West Water was advised that Melbourne Water would not proceed with the construction of a salt reduction plant.

However, subsequent analysis by City West Water in 2007 to identify the preferred alternative source of recycled water concluded that the construction of a salt reduction plant at the WTP remains the best option for supply of recycled water to the West Werribee development estates.

As such, City West Water engaged an internationally renowned membrane treatment expert (Assoc Prof Greg Leslie, UNSW) to carry out a technical review of the process proposed by Melbourne Water and make recommendations on the treatment process to be adopted by City West Water. The review concluded that the treatment process proposed by Melbourne Water involved an advanced treatment process configuration that would produce a higher quality of water than that required by City West Water's customers.

In light of the review, City West Water proposes a staged approach to developing the treatment plant, with an initial capacity of 6ML per day. City West Water believes that this approach allows the construction of treatment units over time,

corresponding to growth in recycled water demand. City West Water also proposes to use a modified treatment process configuration to provide fit-for-purpose water quality. The smaller, purpose-built salt reduction plant has a less intensive pre-treatment process that will significantly reduce the capital and operating costs compared to the treatment plant originally proposed by Melbourne Water, and ensures that West Werribee Dual Water Supply Scheme remains financially viable.

City West Water has also sought to further reduce the cost of treatment through the provision of 100 per cent potable back-up to customers of the dual water supply scheme. Such a provision enables City West Water to avoid the cost of providing 100 per cent reliability in the recycled water treatment process, and manages supply risk at less cost than the provision of additional capacity to accommodate extreme events (such as storm surge).

Project Expenditure:

Capital expenditure

The total capital cost for the construction of the dual water supply scheme, including the design and construction of a salt reduction plant, is estimated at $72.31 million. Table 7.3 below provides a detailed breakdown of the total estimated capital cost of the project.

Table 7.3: Cost Estimate for West Werribee Dual Water Supply Scheme

Project Asset/Item	Water Plan Cost Estimate ($2009 million)
Salt Reduction Plant (SRP)	
Site Establishment	0.73
Treatment Plant and related infrastructure	21.86
Reverse Osmosis Concentrate Management	1.01
Pilot Plant Trial	0.19
Power	0.25
Contractors margin	6.01
Design	1.44
SRP Contingency	2.40
Sub-total	**33.89**
RW Pump Station – Western Treatment Plant	
Pump Stations and Telecommunications	3.99
Pump Station Contingency	0.80
Sub-total	**4.79**

RW Transfer Mains	
19.1 km of mains	21.80
4.6 km of laterals	1.17
Pipelines Contingency	5.74
Sub-total	**28.71**
RW Storage	
Tanks and Telecommunications	4.10
Storage Contingency	0.82
Sub-total	**4.92**
Total Cost Estimate	**72.31**

Source: City West Water

As outlined in Table 7.3 above, the salt reduction plant is the dominant expenditure item for the project, contributing approximately 47 per cent of the project's total estimated capital cost. The other significant expenditure item is the transfer mains and associated pipelines which represent over 35 per cent of the total project cost.

As outlined in the 2004 Business Case, the project, as it was originally scoped resulted in an estimated capital cost of $21.5 million. The main causes for the significant increase in expenditure to the latest estimate of $72.31 million were:

- the original scope of the West Werribee Dual Water Supply scheme assumed that Melbourne Water, in its role as wholesaler, would be responsible for the treatment and delivery of the recycled water to the designated supply point at the WTP. As such, the original scope did not call for City West Water to design and construct a salt reduction plant and

- the selection of a new location for the Ballan Road tank site, which avoids land acquisition difficulties and better integrates with the proposed Melbourne-Geelong pipeline. The new site required an additional 5kms of transfer mains and additionally pumping capacity.

It should be noted that the preliminary cost estimate of $72.3 million in the Water Plan is based on the functional design of the project elements undertaken by external design consultants. Subsequently, City West Water engaged an independent cost estimator to review the engineering estimates, whereby a revised estimate of $113 million was developed, including quantification of project cost risks and opportunities. A further consultant was engaged to confirm this cost estimate and validate the differences between the two earlier cost estimates, resulting in yet another cost estimate of $119 million.

Given the wide variance between project cost estimates, City West Water is undertaking an internal review of the estimates before adopting a single cost estimate in the business case to be submitted to DTF. This exercise is expected to be completed by late March 2009, with the internal review to be provided to ESC upon completion.

While there remains a degree of uncertainty with the estimated total project cost, City West Water remains confident that this project will proceed along specified timelines (please refer to the 'Project Delivery' section below). As such, City West Water believes that this uncertainty is better addressed by including the lower band estimate in the Water Plan for pricing purposes (i.e. the $72.3 million estimate). Should the final project cost exceed the estimated cost of $72.3 million, City West Water is prepared to face the financing costs of the difference over the next regulatory period with a commitment to have the full value of works included in the 'Regulatory Asset Value' for the pricing period beginning in 2013.

We are satisfied with this approach given that any financing costs (should they be required) will likely occur late in the next regulatory period and any financial impact on City West Water will be relatively minor. We also note that City West Water has consulted with ESC in relation to this approach. As such, we are comfortable with the proposed level of capital expenditure for the West Werribee Dual Water Supply Scheme, as outlined in City West Water's Water Plan.

Operating expenditure

City West Water engaged external design consultants to estimate the operating costs for the supply of fit-for-purpose Class A recycled water from the (WTP), via a salt reduction plant and pipeline, to 9,250 residential lots and open space. The estimates include:

- fixed costs of $1.1 million per year, including operations staff, routine maintenance, contingency and occupational health and safety
- variable costs of:
    - $0.77 per kL for power, consumables and solid waste disposal
    - $0.07 per kL for the disposal of the reverse osmosis concentrate (liquid waste) by Melbourne Water, and bulk supply charge of Class A recycled water
    - A conservative estimate of $350 per ML of Class A feedwater delivered to City West Water's salt reduction plant

This project will be tendered as a design, construct, operate and maintain contract.

However, we note that in the Water Plan, City West Water has proposed operating expenditure of $0.31 million and $0.63 million in 2011/12 and 2012/13 respectively. It is unclear what this difference with the above estimates is due to. Given that the project is not expected to be commissioned until June 2012, we believe that including the proposed operating expenditure of $0.31 million in 2011/12 is inappropriate. As such, we recommend removing this from City West Water's forecast operating expenditure. This is also discussed in Section 6.2.4.

Project Delivery:

The project has experienced a number of delays throughout its history. The project was originally intended to commence detailed design and construction in 2006, complete construction by September 2008 and commence delivery of recycled water to residential customers by December 2008. However, as noted above the project scope has changed significantly since the original 2004 business case, with the primary change relating to the issue of the salt reduction plant.

Since the circulation of the Draft Report City West Water has provided additional information in relation to the deliverability of the project. Table 7.4 below outlines the key project milestones for the West Werribee Dual Water Supply Scheme.

Table 7.4: Key project milestones

Milestone	Date
Business case approval by Board	April 2009
Business case approval by DTF	August 2009
EPA and other approvals	April 2010
Pipeline tender released	April 2010
Salt Reduction Plant tender released	April 2010
Pipeline commissioning	June 2012
Salt Reduction Plant commissioning	June 2012

Source: City West Water

With regard to progress to date, we note that the project is in an advanced stage of implementation. Detailed design of the transfer mains and associated pipelines (representing over 35 per cent of total project cost) has now been completed. Following preliminary consultation with external stakeholders, formal acceptance of the design by stakeholders is now being sought. Functional design for the remaining assets has been completed, including the salt reduction plant, storage tanks and pump stations.

The Gateway Review Business Case was completed in January 2009. Following this, submission of the project business case to the City West Water Board, and subsequently to DTF, is planned for April 2009. DTF approval is expected to take approximately four months and be achieved by August 2009. Given the comprehensive nature of the feedback received during the Gateway Review process, and the extensive time allowed for review of the draft business case by external and internal stakeholders, City West Water has stated it is confident that no further work will be required for the business case and the milestone will be met.

However, with regard to criticality, it is City West Water Board approval that is most significant in ensuring the successful delivery of this project by the June 2012 date. A failure to obtain Board approval in April 2009 would result in either (a) the acceleration of other project activities in order to meet the expected completion date, or (b) a delayed completion date for the project. This is due to Board approval being required before preparations of the technical specifications and the contract tender process can begin. City West Water remains confident that Board approval will be obtained in April 2009, and that it will go to public tender in early 2010. It should be noted that the City West Water Board has already given in-principle-approval for the project.

City West Water has undergone extensive stakeholder engagement with key stakeholders. Key stakeholders include DTF, DSE, Wyndham City Council, the Victorian Environmental Protection Agency (EPA), Melbourne Water and property developers. City West Water has received the full support of all key stakeholders to proceed with the formal approval process for this project, and to date no significant concerns have been identified by stakeholders that would place the deliverability of the project at risk. It should also be noted that DSE, via the Victorian Water Trust, has already contributed $1.55 million to this project.

We also note that a Memorandum of Understanding (MoU) has recently been executed between Melbourne Water and City West Water in relation to this project. The MoU addresses key issues such as recycled water availability, provision of land for installing the salt reduction plant and management of waste. As a result, City West Water will have full control over the construction and operation of the salt reduction plant.

Given our analysis above, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the project by June 2012.

Findings:

We believe that City West Water's proposed staged approach to delivering Class A recycled water to the West Werribee growth area is a prudent risk mitigation strategy. Staging the project enables City West Water to evaluate the technology and optimise operations at the salt reduction plant, and collect additional recycled water usage data to inform the specifications of the expanded scheme. The proposed staged approach also allows for the deferral of some capital expenditure, thereby optimising whole-of-life project costs.

We are satisfied with City West Water's approach to managing the uncertainty remaining with the capital estimates of the project by including the lower band estimate in the Water Plan for pricing purposes. Should the final project cost exceed the estimated cost of $72.3 million, City West Water is prepared to face the financing costs of the difference over the next regulatory period with a commitment to have the full value of works included in the 'Regulatory Asset Value' for the pricing period beginning in 2013. We also note that City West Water has consulted with ESC in relation to this approach. As such, we are comfortable with the proposed level of capital expenditure for the West Werribee Dual Water Supply Scheme, as outlined in City West Water's Water Plan.

However, given that the project is not expected to be commissioned until June 2012, we believe that including the proposed operating expenditure of $0.31 million in 2011-12 is inappropriate. As such, we recommend removing this from City West Water's forecast operating expenditure. This is also discussed in Section 6.2.4.

After reviewing a detailed analysis of the project, including the project objectives and scope, the service need, strategies for the deliverability of the project, the proposed project expenditure, stakeholder communications plan and work completed to date, we are comfortable with the proposed level of project expenditure and the proposed deliverability of the project. We also note that the project is designed to help meet the Government's target for recycling 20 per cent Melbourne's wastewater.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the West Werribee Dual Water Supply Scheme. This is shown in Table 7.5 below.

Table 7.5: Recommended capital expenditure profile for West Werribee Dual Water Supply Scheme

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	0.3	10.6	27.1	34.3	-	**72.0**
Revised forecast	0.3	10.6	27.1	34.3	-	**72.0**
Net change	-	-	-	-	-	**-**

7.4.2 *Altona recycled water project*

We noted in our Draft Report that we had a number of concerns with the deliverability of the Altona Recycled Water Project. This was primarily related to the risk that further DTF approval may be required if the tendering process results in a total project cost that exceeds the existing DTF approved project values, and the overall complexity of the project combined with City West Water's capital expenditure profile (which is significantly front-ended at the beginning of the next regulatory period).

As such, for the purposes of the Draft Report, we recommended that the capital expenditure for the Altona Recycled Water Project be deferred by a year from City West Water's forecasts.

In response to the Draft Report, City West Water provided additional information in relation to the deliverability of the project. Our review of the Altona Recycled Water Project is detailed below and is based upon an examination of project business cases, submissions to the Board, project budget reviews, project progress reports, demand forecasts and correspondence from DTF. Our review incorporates the most recent information provided by City West Water.

Project Overview:

The Altona Recycled Water Project involves the former Altona Golf Courses Scheme and the Altona Industrial Scheme. Both schemes involve the delivery of Class A recycled water from the newly upgraded Altona Treatment Plant (ATP), via salt reduction plants, to nearby commercial customers. The project will deliver a combined 9ML/day of treated fit-for-purpose Class A recycled water, and up to 2,600 ML per year, to the Qenos' Olefins plant located in Altona, the Kooringal and Sanctuary Lakes Golf Courses, and open spaces managed by Hobsons Bay City Council.

It was originally intended that the two projects that make up the Altona Recycled Water Project be delivered separately, but in succession. However, due to a

number of project delays it became apparent to City West Water that the two schemes would not only follow in quick succession, but would experience substantial overlap. As such, it was reasonably argued by City West Water that it would not be prudent to build the two micro-filtration reverse osmosis (MFRO) plants as entirely separate constructions, as doing so would only increase the construction and operating risks. While a company had already been recommended to provide one MFRO plant to supply the golf courses, City West Water decided to retender both plants as one package to take advantage of economies of scale and attract a better market response during the tender process.

Of the 2,600 ML per year of Class A recycled water, approximately 2,095 ML is committed to the Qenos Olefins plant to substitute the potable water currently being used for cooling and boilers. The remaining Class A recycled water will be used for the Kooringal and Sanctuary Lakes Golf Courses, and open spaces managed by Hobsons Bay City Council.

All treatment plants, tanks and pump stations required for the combined project are to be located at the ATP site. The project was released to tender in December 2008 and is forecast by City West Water to be commissioned by December 2010. When commissioned, the Altona Recycled Water Project will be Victoria's second largest recycled water project for industry and the fifth largest in Australia.

We note that the project is consistent with the strategic objectives identified in City West Water's Corporate Plan and the whole-of-government objectives outlined in the CRSWS, by reducing demand of potable water, contributing to the interim target for the supply of recycled water to the non-residential sector (specifically Action 4.34 of the CRSWS), and reducing the amount of treated effluent being discharged into Port Phillip Bay. The project will also contribute to City West Water meeting its obligations under its licence with the EPA.

Project Expenditure:

Capital expenditure

The following table provides a detailed breakdown of the estimated capital expenditure of the Altona Recycled Water Project.

Table 7.6: Cost Estimate for Altona Recycled Water Project

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
PPB Study	0.20
Approvals	1.20
MFRO Plant Specification/Contract	1.00
MFRO Plant Design and Construct	31.01
Ancillary Works	6.60
Pump Stations	2.34
Pipelines	7.74
Consultants	0.30
City West Water Labour	0.50
Contingencies	8.24
Total Cost Estimate	**59.13**

Source: City West Water

As Table 7.6 shows, the MFRO plant is by far the largest component of the project, accounting for over 50 per cent of the estimated total project costs. As each of the individual schemes require a different recycled water quality, the MFRO plant will be built as three, 3 ML/day plants, with one plant supplying the golf courses, and the other two supplying industry. According to documentation provided by City West Water, the capital cost of the MFRO plant to supply the gold courses is approximately $10 million, and the capital cost of the two 3 ML/day plants to supply industry is estimated at $21 million.

We note that the level of contingency provided in the above project estimates by City West Water represents less than 15 per cent of the total project cost. We believe this to be a reasonable contingency level given that all scoping and detailed technical specifications for the Altona Recycled Water Project have been finalised (see Project Delivery below).

After reviewing detailed project business cases and project budget estimations, we are satisfied with the capital expenditure proposed for the Altona Recycled Water Project in the Water Plan. We note that any change to the current capital cost estimate contained in the Water Plan would be dependent upon the results of a competitive tender process, with submissions from project bidders due late March 2009. However, as discussed below, City West Water is confident that the tender price for this project will not exceed current approved project costs.

Operating expenditure

The operating costs of the Altona Recycled Water Project have been estimated by City West Water. These estimates are outlined in the following table.

Table 7.7: Operating expenditure estimates ($m, 2008/09)

	2010/11	2011/12	2012/13
Chemical related expenses	0.25	0.44	0.45
Material related expenses	0.14	0.25	0.26
Labour	0.36	0.64	0.66
Total	**0.75**	**1.33**	**1.37**

Source: City West Water

This project will be tendered as a design, construct, operate and maintain contract. As such, City West Water has noted that the above estimates are subject to change pending the outcomes of the competitive tendering process.

We note that the forecast operating expenses for the Altona Recycled Water Project correlate with the expected commissioning date.

Project Delivery:

We note that City West Water has finalised all scoping and detailed technical specifications for the Altona Recycled Water Project and the tender for the combined project was released in December 2008, with responses to tender due in March 2009. We note that City West Water has already established a tender review committee to appoint the successful contractor by May 2009. Tenders for the ancillary works, pipelines and associated works have been issued, and are also due to close in late March 2009. Table 7.8 below outlines the key project milestones for the Altona Recycled Water Project.

Table 7.8: Key project milestones

Milestone	Date
MFRO plant tender close	March 2009
Ancillary works, pipelines and associated works tender close	March 2009
DTF/DSE approval (if required)	May 2009
MFRO plant tender awarded	May 2009
Completion of MFRO design	February 2010
Completion of MFRO construction	August 2010
Commissioning of MFRO plants	September 2010
Commissioning of ancillary works, pipelines and associated works	September 2010
Commencement of operations and delivery of Class A recycled water	December 2010

Source: City West Water

City West Water has stated that the tender for the combined package of works has generated a significant response from industry, and was satisfied with the response from industry at the information session and site visit held in February 2009, which was attended by over 60 prospective bidders.

The industry's high level of interest in this project has provided City West Water with confidence that the tender price for this project will not exceed current approved project costs. As a result, City West Water does not expect any delays resulting from additional expenditure approval requirements.

While City West Water does not anticipate it, should the tendered price of the project exceed the existing DTF approved values, City West Water would need to make a go/no-go decision on the project in consultation with Government, which would include seeking DTF approval for the revised capital expenditure estimate. However, we note that City West Water has consulted with DTF and that DTF is satisfied with this approach to the tendering process.

CWW expects construction of the recycled water plant and other assets to commence in June 2009, with supply of recycled water to commence in December 2010 as per the project program.

Given our analysis above, we believe that, barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Altona Recycled Water Project by December 2010.

As noted above, this project (or more precisely the two former individual projects) has experienced significant delays. In relation to the Altona Golf Course Scheme, detailed design and construction was intended to commence in early 2006, with construction completed by October 2006 and the commencement of delivery of recycled water by late 2006.

In regard to the Altona Industrial Project, completion of functional and detailed design was originally due in October 2007, confirmation of cost and approval to proceed by City West Water Board expected November 2007, completion of construction expected November 2008, commissioning completed by January 2009, and the delivery of recycled water to Qenos Olefins to commence in February 2009.

Findings:

We note that the scope of the Altona Recycled Water Project does not include the supply of recycled water to any residential developers. Consequently the recent amendment to the Melbourne metropolitan urban growth boundaries should not impact on this project.

We note the risk that further DTF approval may be required if the tendering process results in a total estimated capital cost that exceeds the existing DTF approved project values. However, given the industry's high level of interest in this project and the current economic downturn, City West Water is confident that the tender price for this project will not exceed current approved project costs. As a result, City West Water does not expect any delays resulting from this issue.

While we note that City West Water has a significantly front-ended capital expenditure profile (due predominantly to the West Werribee Dual Water Supply Scheme and the Altona Recycled Water Project), this should not impede City West Water's ability to deliver this project, especially as both projects are to be delivered through a design, construct, operate and maintain contract.

After reviewing a detailed analysis of the project, including detailed project business cases, project objectives and scope, service need, strategies for the deliverability of the project, proposed project expenditure, stakeholder consultation and work completed to date, we are comfortable with the proposed level of project expenditure and the proposed deliverability of the project. We also note that the project is designed to contribute to the interim target for the supply of recycled water to the non-residential sector, as outlined in the CRSWS.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the Altona Recycled Water Project. This is shown in Table 7.9 below.

Table 7.9: Recommended expenditure profile for Altona Recycled Water Project

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	0.8	25.5	32.9	-	-	**58.4**
Revised forecast	0.8	25.5	32.9	-	-	**58.4**
Net change	**-**	**-**	**-**	**-**	-	**-**

7.4.3 *Water mains renewals – social risk – reticulation*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the water mains renewals (social risk – reticulation) program. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure, the lengths of renewals proposed to be undertaken, and relevant contract unit rates of the program. Our review of the water mains renewals (social risk – reticulation) program, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The water mains renewals (social risk – reticulation) program is an ongoing renewals program aimed at addressing water reticulation mains assets that represent a social risk.

Water mains renewals are driven by City West Water's Asset Criticality Risk Model (ACRM). The ACRM involves the assessment of each asset's condition (on a rating of 1-5 based on likelihood of failure) and consequence of failure (in ascending order from insignificant, minor, moderate, major and catastrophic).

The likelihood of failure is determined via an algorithm using parameters such as pipe size, material, construction year, water main burst/leak performance and field

pipe scanning. These variables assign an indicative asset condition assessment to every water main.

The consequence of failure determines the impact of a water main failure from a social perspective. The water mains with a high consequence of failure usually coincide with locations such as major roads, commercial or critical customers. The Melbourne CBD contains a large proportion of water mains with a high social consequence of failure.

City West Water has three categories of consequence of failure: economic, social and environmental. This model, and City West Water's general renewals program, is discussed in greater detail in Section 7.6.

Project Expenditure:

The total capital expenditure for water mains renewals (social risk – reticulation) proposed by City West Water is $31 million over the period from 2009/10 to 2012/13. The expenditure proposed by City West Water, the lengths of renewals and the resulting unit rate are outlined in the following table.

Table 7.10: Water mains renewals (social risk – reticulation)

	2008/09	2009/10	2010/11	2011/12	2012/13
Proposed expenditure ($m, 2008/09)	8.1	8.4	8.1	8.4	6.2
Proposed lengths (km)	7.1	7.3	7.1	7.3	5.4
Unit rate ($ per metre)	1,140	1,147	1,139	1,147	1,146

As can be seen from Table 7.10 above, the calculated unit rate of renewals (on a dollar per metre basis) remains consistent for the entirety of the next regulatory period. As noted above, the proposed lengths of renewals are derived from City West Water's ACRM (which we have reviewed in detail in Section 7.6.1), which incorporates the physical attributes of the asset, its performance history and current condition, and is updated every six months. As such, we are comfortable with the length of renewals proposed by City West Water.

City West Water's water mains renewals (social risk – reticulation) program relates to water reticulation assets that involve a social consequence of failure, including immediate threat to public health and safety, location and number of customers

affected. This renewal program relates to assets predominantly in the CBD and other densely populated areas of Melbourne. As such, the unit rates for the water mains renewals (social risk – reticulation) program are significantly greater than other reticulation renewal programs.

The above unit rate incorporates the contract unit rates approved by City West Water and a contingency of approximately 20 per cent. The contingency allows for unforseen events such as interruptions, issues with road depth, pipe access and traffic management. Given the nature of water main renewals, we believe the contingency attached to the unit rate is appropriate.

After conducting a detailed review of the water mains renewals (social risk – reticulation) program, including a review of the ACRM, historical expenditure, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (social risk – reticulation) program.

Project Delivery

We recognise that City West Water's adoption of the ACRM is relatively recent and that this project is ongoing. As noted in Section 7.6.1, we believe that the ACRM adopted by City West Water is a vital risk management tool, and we are satisfied with the rigour and robustness of the model in driving risk-based renewals. As such we believe that City West Water is well placed to deliver its ongoing water mains renewals (social risk – reticulation) program.

Findings:

Based on a detailed review of the water mains renewals (social risk – reticulation) program, including a review of the ACRM, historical expenditure, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (social risk – reticulation) program.

We believe that the ACRM adopted by City West Water is a vital risk management tool, and we are satisfied with the rigour and robustness of the model in driving risk-based renewals. As such we believe that City West Water is well placed to deliver its ongoing water mains renewals.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the water mains renewals (social risk – reticulation) program. This is shown in the Table 7.11 below.

Table 7.11: Recommended expenditure profile for water mains renewals (social risk – reticulation)

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	8.1	8.4	8.1	8.4	6.2	**31.0**
Revised forecast	8.1	8.4	8.1	8.4	6.2	**31.0**
Net change	-	-	-	-	-	**-**

7.4.4 *Water mains renewals – social risk – distribution*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the water mains renewals (social risk – distribution) program. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure, the lengths of renewals proposed to be undertaken, and relevant contract unit rates of the program. Our review of the water mains renewals (social risk – distribution) program, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The water mains renewals (social risk – distribution) program is an ongoing renewals program aimed at addressing water distribution mains assets that represent a social risk.

Water mains renewals are driven by City West Water's Asset Criticality Risk Model (ACRM). The ACRM involves the assessment of each asset's condition (on a rating of 1-5 based on likelihood of failure) and consequence of failure (in ascending order from insignificant, minor, moderate, major and catastrophic).

The likelihood of failure is determined via an algorithm using parameters such as pipe size, material, construction year, water main burst/leak performance and field pipe scanning. These variables assign an indicative condition to every water main.

The consequence of failure determines the impact of a water main failure from a social perspective. The water mains with a high consequence of failure usually coincide with locations such as major roads, commercial or critical customers. The Melbourne CBD contains a large proportion of water mains with a high social consequence of failure.

City West Water has three categories of consequence of failure: economic, social and environmental. This model, and City West Water's general renewals program, is discussed in greater detail in Section 7.5.

Project Expenditure:

The total capital expenditure for water mains renewals (social risk – distribution) proposed by City West Water is $26.8 million over the period from 2009/10 to 2012/13. The expenditure proposed by City West Water, the lengths of renewals and the resulting unit rate are outlined in Table 7.12 below.

Table 7.12: Water mains renewals (social risk – distribution)

	2008/09	2009/10	2010/11	2011/12	2012/13
Proposed expenditure ($m, 2008/09)	5.9	7.3	5.8	6.7	7.1
Proposed lengths (km)	3.8	4.7	3.7	4.3	4.5
Unit rate ($ per metre)	1,562	1,544	1,562	1,558	1,568

As can be seen from Table 7.12 above, the calculated unit rate of renewals (on a dollar per metre basis) remains consistent for the entirety of the next regulatory period. As noted above, the proposed lengths of renewals are derived from City West Water's ACRM (we have reviewed this in detail in Section 7.6.1), which incorporates the physical attributes of the asset, its performance history and current condition and is updated every six months. As such, we are comfortable with the length of renewals proposed by City West Water.

City West Water's water mains renewals (social risk – distribution) program relates to water distribution assets that involve a social consequence of failure, including immediate threat to public health and safety, location and number of customers affected. As such, this renewal program relates to assets predominantly in the CBD and other densely populated areas of Melbourne. As such, the unit rates for the

water mains renewals (social risk – distribution) program are significantly greater than other distribution renewal programs.

Unlike reticulation mains renewals which are covered by City West Water's schedule of contract rates, water distribution mains renewals works are released to public tender under design and construct contracts as individual projects or a package of works. This is due to the significant variety of works required and the relatively small volume of work. City West Water believes that this approach ensures the most competitive unit rate is achieved for each distribution mains renewal project.

We have reviewed a detailed sample of unit rates from recent distribution main renewals conducted by City West Water. We can confirm that there is a significant variety in rates depending on the location, size of pipe required, ground condition, traffic requirements and interruptions.

Given the above issues relating to unit rates, City West Water took into a number of issues when determining the budget for this program, including previous works, knowledge of the asset to be renewed and current site conditions. It must also be noted that the proposed works and budgets are indicative only as these assessments are updated regularly.

We also note that the above unit rate for the water mains renewals (social risk – distribution) program includes a contingency of approximately 20 per cent. The contingency allows for unforseen events such as interruptions, issues with road depth, pipe access and traffic management. Given the nature of water main renewals, we believe the contingency attached to the unit rate is appropriate.

After conducting a detailed review of the water mains renewals (social risk – distribution) program, including a review of the ACRM, historical expenditure and similar works, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (social risk – distribution) program.

Project Delivery

We recognise that City West Water's adoption of the ACRM is relatively recent and that this project is ongoing. As noted in Section 7.6.1, we believe that the ACRM adopted by City West Water is a vital risk management tool, and we are satisfied with the rigour and robustness of the model in driving risk-based

renewals. As such we believe that City West Water is well placed to deliver its ongoing water mains renewals (social risk – distribution) program.

Findings:

Based on a review of the ACRM, historical and proposed expenditure, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (social risk – distribution) program.

We believe that the ACRM adopted by City West Water is a vital risk management tool, and we are satisfied with the rigour and robustness of the model in driving risk-based renewals. As such we believe that City West Water is well placed to deliver its ongoing water mains renewals.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the water mains renewals (social risk – distribution) program. This is shown in Table 7.13 below.

Table 7.13: Recommended expenditure profile for water mains renewals (social risk – distribution)

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	5.9	7.3	5.8	6.7	7.1	**26.8**
Revised forecast	5.9	7.3	5.8	6.7	7.1	**26.8**
Net change	-	-	-	-	-	**-**

7.4.5 Derrimut Interceptor Sewer

We noted in our Draft Report that we had not received sufficient information to assess the deliverability of the Derrimut Interceptor Sewer, and as such requested further information. However, given the clear need for the project and the fact that it has already commenced, for the purposes of the Draft Report we made no adjustments to City West Water's proposed capital expenditure.

In response to the Draft Report, City West Water provided additional information in relation to the deliverability of the project. Our review of the Derrimut Interceptor Sewer, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The Derrimut Interceptor Sewer is designed to increase the hydraulic capacity of the existing Kororoit Creek sewer network downstream of Caroline Springs. The current system is inadequate, and the proposed project will involve the Upper Kororoit Creek catchment being diverted via the Derrimut Interceptor Sewer to the Western Trunk Sewer, as well as servicing all land within the local Derrimut sewerage catchment. Without the diversion of flows to the Derrimut Interceptor Sewer, the Upper Kororoit Creek system will become non-compliant with respect to wet weather spills.

Provision of the flow diversion to the Derrimut Interceptor Sewer, in conjunction with previously approved augmentation works for the Lower Kororoit Creek main sewer, will make the Kororoit Creek sewer network 1 in 5 compliant for forecast ultimate flows in the Kororoit Creek catchment.

Project Expenditure:

The Derrimut Interceptor Sewer is estimated at $31.9 million, and is expected to be complete by 2010/11. Of the $31.9 million, $20.5 million if forecast to be spent in the next regulatory period.

Table 7.14: Cost Estimate for Derrimut Interceptor Sewer

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
Drop shaft civil works	1.95
Gravity Sewer Stage 1 and associated works	6.95
Gravity Sewer Stage 2 and associated works	4.70
Gravity Sewer Stage 3 and associated works	5.92
Gravity Sewer – Deer Park Bypass and associated works	0.41
Rising Main and associated works	3.34
Pump station, diversion chamber and associated works	2.27
Contingency (25 per cent)	6.39
Total Cost Estimate	**31.93**

Source: City West Water

The Derrimut Interceptor was originally estimated at $16.5 million, which was approved by DTF in December 2007, having been submitted in September 2006. However, following the detailed design, the tendering of the pipes and the

tendering of the first construction stage, the project's estimated cost was revised upwards significantly to $31.9 million.

This increase was predominantly due to detailed design revealing the need for a new connection to the Western Trunk Sewer ($1.8 million), the need for an upgrade to the power supply and an increase in the requirements of the pump station ($0.8 million), rises in the cost of the pipeline construction ($1.2 million), and the addition of a contingency amount of 25 per cent ($6.1 million). City West Water noted that the remaining variance was due to a number of smaller adjustments.

In regard to the contingency of 25 per cent, this was recommended over the traditional contingency of 15 per cent of the base cost because the interceptor sewer passes through a number of environmentally and heritage sensitive areas and the current design alignment of the sewer is subject to change by developers. As a result of these issues, there remains the potential for delays or minor realignments during construction to allow for localised issues that may arise. As such, we are comfortable with the proposed level of contingency in this instance.

This project includes approximately $11.4 million of forecast capital expenditure in the current financial year (2008/09). City West Water has indicated that construction has begun on this project. To date, there has been no indication from City West Water that the forecast expenditure in 2008/09 will not be spent.

After reviewing a detailed project business case and project budget estimations, we are satisfied with the capital expenditure proposed by City West Water for Derrimut Interceptor Sewer in the Water Plan.

Project Delivery:

As noted above, construction on the Derrimut Interceptor Sewer has already begun, with the project expected to be commissioned by June 2011. Also, we note that City West Water has already completed the detailed design of the required pipelines, while the detailed design of the pumping station and rising main is ongoing. Table 7.15 below outlines the key project milestones for the Derrimut Interceptor Sewer project.

Table 7.15: Remaining key project milestones

Milestone	Date
Construction of Stage 1	June 2009
Rising main tender released	June 2009
Pumping station tender released	June 2009
Construction of outlet structure	July 2009
Rising main tender awarded	September 2009
Pumping station tender awarded	September 2009
Construction of Stage 2	January 2010
Construction of Stage 3	February 2010
Commissioning of rising main	April 2011
Commissioning of pumping station	June 2011
Project completion	June 2011

Source: City West Water

Construction stages 1-3 have been awarded and construction for all three stages is underway. The tenders for the rising main and pumping station will be released in June 2009, with the tenders to be awarded in September 2009.

As noted above, the interceptor sewer passes through a number of environmentally and heritage sensitive areas and there remains the potential for delays or minor realignments during construction. However, City West Water has a thorough understanding of the potential risks and remains confident of meeting the above milestones.

After reviewing detailed information relating to the deliverability of the project, including a detailed business case and project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Derrimut Interceptor Sewer by June 2011.

Findings:

After reviewing a detailed project business case and project budget estimations, we are satisfied with the capital expenditure proposed by City West Water for Derrimut Interceptor Sewer in the Water Plan.

After reviewing detailed information relating to the deliverability of the project, including a detailed business case and project program, we believe that, barring any

unforeseen events, City West Water is well placed to meet the above milestones and deliver the Derrimut Interceptor Sewer by June 2011.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the Derrimut Interceptor Sewer. This is shown in Table 7.16 below.

Table 7.16: Recommended expenditure profile for Derrimut Interceptor Sewer

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	11.4	12.5	8.0	-	-	**20.5**
Revised forecast	11.4	12.5	8.0	-	-	**20.5**
Net change	-	-	-	-	-	**-**

7.4.6 *Renew water mains – KPI attainment – reticulation*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the mains renewals (KPI attainment – reticulation) program. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure, the lengths of renewals proposed to be undertaken, and relevant contract unit rates of the program. Our review of the mains renewals (KPI attainment – reticulation) program, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The water mains renewals (KPI attainment – reticulation) program is an ongoing renewals program aimed at addressing water reticulation mains assets that impact on City West Water's KPI. This project is in place to directly manage two KPI's – customers receiving greater than five unplanned interruptions in a year and customers receiving five unplanned interruptions in a year.

A daily report complied by City West Water monitors customers who have received multiple interruptions to their water supply in the past 12 months. From this report investigations are carried out on shut off blocks that have received a

certain number of interruptions. Upon investigation of the shut off block, if it is determined that a water main or water mains within the shut off block have a high likelihood of failure and high consequences of failure (in terms of KPIs) then the asset(s) are recommended for renewal.

The program is identified in this manner because of the need to respond immediately to interruptions (i.e. as they occur). As such, the works for this program are not identified significantly in advance of the works occurring. The renewal needs to be carried out quickly once it is determined that the KPI limit is likely to be exceeded.

Project Expenditure:

The total capital expenditure for water mains renewals (KPI attainment – reticulation) proposed by City West Water is $16.5 million over the period from 2009/10 to 2012/13. The expenditure proposed by City West Water, the lengths of renewals and the resulting unit rate are outlined in Table 7.17 below.

Table 7.17: Water mains renewals (KPI attainment – reticulation)

	2008/09	2009/10	2010/11	2011/12	2012/13
Proposed expenditure ($m, 2008/09)	3.8	3.9	4.0	4.2	4.3
Proposed lengths (km)	12.2	12.5	12.9	13.4	13.9
Unit rate ($ per metre)	313	312	314	312	312

Given the need for renewals in this program to be carried out as quickly as possible, these renewals are carried out on a schedule of rates contract ensuring that the relevant contractor can respond quickly and prevent subsequent interruptions to the customer and therefore a breach of the KPI. The budget for this program is driven by the KPI target(s) and historical information on water main performance and activity levels.

The above unit rate incorporates the contract unit rates agreed to by City West Water and a contingency of approximately 20 per cent. The contingency allows for unforseen events such as interruptions, issues with road depth, pipe access and traffic management. Given the nature of these high priority water main renewals, we believe the contingency attached to the unit rate is appropriate.

While this program deals with essentially the same class of asset as the water mains renewals (social risk – reticulation) program (i.e. water reticulation mains renewals), we note that there is a significant discrepancy between the unit rates of each program. This discrepancy between rates is due predominantly to the location of works. Works under the water mains renewals (KPI attainment – reticulation) program are driven by repeat interruptions which overwhelmingly occur in outer suburbs, whereas work undertaken in the water mains renewals (social risk – reticulation) program occur predominantly in the CBD and other densely populated areas of Melbourne (as discussed in Section 7.3.3).

After conducting a detailed review of historical expenditure, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (KPI attainment – reticulation) program.

Project Delivery

This project is ongoing. We believe that City West Water is well placed to deliver its ongoing water mains renewals (KPI attainment – reticulation) program.

Findings:

Based on a review of the schedule of contract rates, historical and proposed expenditure, the lengths of proposed renewals over the next regulatory period and the subsequent unit rates, we are comfortable with the level of capital funding proposed by City West Water in the Water Plan for the water mains renewals (KPI attainment – reticulation) program.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the water mains renewals (KPI attainment – reticulation) program. This is shown in Table 7.18 below.

Table 7.18: Recommended expenditure profile for water mains renewals (KPI attainment – reticulation)

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	3.8	3.9	4.0	4.2	4.3	**16.5**
Revised forecast	3.8	3.9	4.0	4.2	4.3	**16.5**
Net change	-	-	-	-	-	**-**

7.4.7 *1150mm main – Sayers Road to Dohertys Road*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the Sayers Road to Dohertys Road project. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure and deliverability of the project. Our review of the Sayers Road to Dohertys Road project, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The proposed 1150mm diameter water main from Sayers Road to Dohertys Road is designed to augment supplies to the rapidly growing Point Cook area (Ardeer Development Area).

Future growth forecasts for the development area comprise approximately 15,000 residential lots and 1,400 hectares of industrial land. Based on DSE's Urban Development Program and City West Water's own historical data, City West Water predicts that development growth rates in the Ardeer Development Area will average approximately 1,100 lots per year in the short term. The majority of this residential growth is forecast to occur in the Point Cook and Truganina areas. Consequently, residential development particularly in the Point Cook area will require major augmentation to the existing water supply system.

The proposed 1150mm diameter main will provide the necessary system capacity to cater for the significant growth that is forecast in the Point Cook area.

Project Expenditure:

The total estimated capital cost of this project as per City West Water's Water Plan is $13.1 million ($2008/09). The following table provides a breakdown of the estimated capital expenditure of the Sayers Road to Dohertys Road project.

Table 7.19: Cost estimate for Sayers Road to Dohertys Road

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
Pipeline	10.17
Detailed design	0.16
Heritage related costs	0.03
Flora and fauna related costs	0.02
Geotechnical	0.07
Contingency (20 per cent)	2.61
Total Cost Estimate	**13.07**

Source: City West Water

As Table 7.19 shows, the pipeline is the dominant expenditure item, accounting for over 75 per cent of the total project cost. The other significant expenditure item is the 20 per cent project contingency.

Given that the detailed design and site investigation is still underway (see Project Delivery below), we believe that a project contingency of 20 per cent is appropriate.

However, we noted in the Draft Report that the total project cost as per the Water Plan ($13.1 million) differed significantly from that in City West Water's Asset Development Plan ($11.3 million). This increase exceeds that which would be expected from normal cost escalation. In its response to the Draft Report, City West Water stated that a real 3.5 per cent capital escalation factor has been applied up to the commissioning date for the Sayers Road to Dohertys Road project. Given that this is inconsistent with City West Water's own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the 1150mm water main from Sayers Road to Dohertys Road project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

Project Delivery:

The 1150mm diameter water main from Sayers Road to Dohertys Road is expected to be completed by June 2012.

We note that the detailed design and investigations of the site are currently underway, and are expected to be completed by June 2009. The tender for the construction of the 1150mm water main is then expected to be released in July 2009, with formal responses-to-tender due September 2009. Once cost estimates have been received from bidders, City West Water will seek formal approval from the Board in October 2009, with the tender to be awarded in the same month. The project is expected to be fully commissioned by June 2012.

Given City West Water's experience in delivering similar projects, and its understanding of the potential risks, City West Water is confident that the project will meet the above milestones and be delivered by June 2012.

After reviewing detailed information relating to the deliverability of the project, including a detailed business case, development area strategy, and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the 1150mm water main from Sayers Road to Dohertys Road by June 2012.

Findings:

Given that City West Water's application of a real 3.5 per cent capital escalation factor is inconsistent with their own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the 1150mm water main from Sayers Road to Dohertys Road project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

After reviewing detailed information relating to the deliverability of the project, including a detailed business case, development area strategy, and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the 1150mm water main from Sayers Road to Dohertys Road by June 2012.

The impact of our recommended adjustment is shown in Table 7.20 below.

Table 7.20: Recommended expenditure profile for 1150mm main from Sayers Road

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	0.3	3.2	6.4	3.2	-	**12.8**
Revised forecast	0.3	3.1	6.2	3.1	-	**12.5**
Net change	**-**	**-0.1**	**-0.2**	**-0.1**	**-**	**-0.3**

Note: numbers may not add due to rounding

7.4.8 *Werribee West – 750mm inlet/outlet main*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the Werribee West 750mm inlet/outlet main project. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure and deliverability of the project. Our review of the Werribee West 750mm inlet/outlet main project, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The Werribee West 750mm inlet/outlet main, the 600mm inlet/outlet main and low level reservoir constitute Stage 1 of the potable water supply works that are proposed for the Werribee West Zone. Stage 1 is expected to be completed by June 2012.

The Werribee West Zone includes the major residential development estates of Manor Lakes and Bluestone Green, and a number of other areas within the 2030 urban growth boundary. Approximately 2,000 residential lots have already been developed in Manor Lakes and Bluestone Green, with the area being currently supplied by a temporary elevated tank. The temporary elevated tank was constructed in 2006 to supply the area until permanent works are constructed. Based on current development forecasts for Manor Lakes and Bluestone green, supply from the temporary elevated tank will need to be augmented by approximately 2012/13.

Stage 1 of the Werribee West Zone will provide the necessary system capacity to cater for the significant growth that is forecast in the area. Stage 1 works involve a

20 megalitre potable water storage tank at Ballan Road, a 750mm water pipeline to the proposed tank site along Ballan Road from the existing 600mm main located adjacent to the temporary elevated tank, a 600mm water pipeline along Ballan Road and the upgrade of existing pumps at the Flinders Crescent pump station.

The proposed Stage 1 works are the beginning of a significant amount of infrastructure that is forecast to be constructed within the West Werribee Zone. Construction is to be staged to deliver the overall project at optimal sizing and least cost. The advantage of staging the works is that the ultimate capacity of the system can be determined at a time in the future when the development scenarios in the general area are more defined and the likely demands (potable versus recycled) are better understood. We are satisfied with City West Water's proposed approach to stage the works over time.

Project Expenditure:

The total estimated capital cost for the Werribee West 750mm inlet/outlet main as per City West Water's Water Plan is $12.3 million ($2008/09). Table 7.21 provides a breakdown of the estimated capital expenditure.

Table 7.21: Cost estimate for the Werribee West 750mm inlet/outlet main

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
Pipeline	9.59
Detailed design	0.17
Heritage related costs	-
Flora and fauna related costs	-
Geotechnical	0.07
Contingency (20 per cent)	2.46
Total Cost Estimate	**12.29**

Source: City West Water

As Table 7.21 shows, the pipeline is the dominant expenditure item, accounting for over 75 per cent of the total project cost. The other significant expenditure item is the 20 per cent project contingency. Given that the detailed design and site investigation is still underway (see Project Delivery below), we believe that a project contingency of 20 per cent is appropriate.

However, we noted in the Draft Report that the total project cost as per the Water Plan ($12.3 million) differed significantly from that in City West Water's Asset Development Plan ($10.6 million). This increase exceeds that which would be

expected from normal cost escalation. In its response to the Draft Report, City West Water stated that a real 3.5 per cent capital escalation factor has been applied up to the commissioning date for the Werribee West 750mm inlet/outlet main project. Given that this is inconsistent with City West Water's own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West 750mm inlet/outlet main project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

Project Delivery:

The Werribee West 750mm inlet/outlet main is expected to be completed by June 2012.

We note that the detailed design and investigations of the site are currently underway, and are expected to be completed by December 2009. The tender for the construction of the Werribee West 750mm inlet/outlet main is then expected to be released in January 2010, with formal responses-to-tender due March 2010. Once cost estimates have been received from bidders, City West Water will seek formal approval from the Board in April 2010, with the tender to be awarded in the same month. The project is expected to be fully commissioned by June 2012.

Given City West Water's experience in delivering similar water main and potable water supply augmentation works, and its understanding of the potential risks, City West Water is confident that the project will meet the above milestones and be delivered by June 2012.

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West 750mm inlet/outlet main by June 2012.

Findings:

Given that City West Water's application of a real 3.5 per cent capital escalation factor is inconsistent with their own stated methodology of applying a real capital

escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West 750mm inlet/outlet main project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West 750mm inlet/outlet main by June 2012.

The impact of our recommended adjustment is shown in Table 7.22 below.

Table 7.22: Recommended expenditure profile for Werribee West 750mm inlet/outlet main

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	-	3.3	6.0	3.0	-	**12.3**
Revised forecast	-	3.3	5.8	2.9	-	**12.0**
Net change	-	**-0.1**	**-0.2**	**-0.1**	**-**	**-0.3**

Note: numbers may not add due to rounding

7.4.9 New Meter program

Project Overview:

City West Water has an ongoing new meter program to service the new residential potable water connections in growth areas, inner areas and apartments. According to the City West Water Asset Development Plan and the Water Plan, City West Water has forecast 7,500 new residential connections per year over the coming pricing period (2009/10 to 2012/13). Each connection will require a new meter, resulting in a forecast requirement of 7,500 new meters per annum.

Project Expenditure:

City West Water has forecast a total capital expenditure of $8.3 million over the period from 2009/10 to 2012/13. Table 7.23 below outlines City West Water's annual proposed capital expenditure on new meters over the period.

Table 7.23: Cost Estimates for City West Water's new meters program ($m, 2008/09)

	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	2.1	2.1	2.1	2.1	**8.3**

Source: City West Water

The $2.1 million proposed for each year is based on City West Water's historical expenditure. In 2007/08 City West Water's actual capital expenditure on new residential meters was $1.9 million, while forecast expenditure for 2008/09 is $2.3 million (not $1.9 million as outlined in the current Water Plan). The average of these two years is $2.1 million per annum.

City West Water has provided the individual component costs of supplying and installing a new standard 20 mm potable water meter in a new residential development, and we have reviewed these costs in detail. As noted above, City West Water has forecast the need to install 7,500 new meters per annum over the coming pricing period. After conducting a detailed review of City West Water's proposed expenditure and the amount of new meters forecast, we are satisfied with the capital expenditure proposed by City West Water for the new meter program.

However, we note that there is a potential opportunity for cost savings to be realised by the water businesses from shared services and co-ordinated procurement arrangements for the supply of new meters.

Project Delivery:

Based on forecasts for new residential potable water connections for growth areas, inner areas and apartments, City West Water has proposed to install 7,500 new meters each year over the coming pricing period. We see no evidence to suggest that City West Water will not be able to meet this target. This project is ongoing.

Findings:

Based on a review of City West Water's historical and proposed expenditure, and the unit rates provided by City West Water, we are comfortable with the level of capital funding proposed by City West Water for the new meter program in the Water Plan. As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the new meter program. This is shown in Table 7.24 below.

Table 7.24: Recommended expenditure profile for new meter program ($m, 2008/09)

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	-	2.1	2.1	2.1	2.1	**8.3**
Revised forecast	-	2.1	2.1	2.1	2.1	**8.3**
Net change	-	-	-	-	-	**-**

Note: numbers may not add due to rounding

However, we believe that the supply of new meters presents a potential opportunity for shared services savings on the basis of the combined purchasing power of the three water business.

7.4.10 *Werribee West – Low Level Reservoir*

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the Werribee West low level reservoir project. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure and deliverability of the project. Our review of the Werribee West low level reservoir project, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The Werribee West 750mm inlet/outlet main, the 600mm inlet/outlet main and low level reservoir constitute Stage 1 of the potable water supply works that are proposed for the Werribee West Zone. Stage 1 is expected to be completed by June 2012. The Werribee low level reservoir is part of Stage 1 works for the Werribee West Supply Zone as discussed in Section 7.4.8.

Project Expenditure:

The total estimated capital cost for the Werribee West low level reservoir as per City West Water's Water Plan is $6.82 million ($2008/09). The following table provides a breakdown of the estimated capital expenditure of the Werribee West low level reservoir.

Table 7.25: Cost estimate for the Werribee West low level reservoir

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
20 ML storage tank	4.97
Upgrades to pumps	0.29
Detailed design	0.14
Heritage related costs	-
Flora and fauna related costs	-
Geotechnical	0.06
Contingency (20 per cent)	1.36
Total Cost Estimate	**6.82**

Source: City West Water

As the above table shows, the 20 ML storage tank is the dominant expenditure item, accounting for over 70 per cent of the total project cost. The other significant expenditure item is the 20 per cent project contingency. Given that the detailed design and site investigation is still underway (see Project Delivery below), we believe that a project contingency of 20 per cent is appropriate.

However, we noted in the Draft Report that the total project cost as per the Water Plan ($6.8 million) differed significantly from that in City West Water's Asset Development Plan ($5.6 million). This increase exceeds that which would be expected from normal cost escalation. In its response to the Draft Report, City West Water stated that a real 3.5 per cent capital escalation factor has been applied up to the commissioning date for the Werribee West low level reservoir project. Given that this is inconsistent with City West Water's own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West low level reservoir project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

Project Delivery:

The Werribee West low level reservoir is expected to be completed by June 2012.

We note that the detailed design and investigations of the site are currently underway, and are expected to be completed by December 2009. The tender for

the construction of the Werribee West low level reservoir is then expected to be released in January 2010, with formal responses-to-tender due March 2010. Once cost estimates have been received from bidders, City West Water will seek formal approval from the Board in April 2010, with the tender to be awarded in the same month. The project is expected to be fully commissioned by June 2012.

Given City West Water's experience in delivering similar storage tanks and potable water supply augmentation works, and its understanding of the potential risks, City West Water is confident that the project will meet the above milestones and be delivered by June 2012.

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West low level reservoir by June 2012.

Findings:

Given that City West Water's application of a real 3.5 per cent capital escalation factor is inconsistent with their own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West low level reservoir project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West low level reservoir by June 2012.

The impact of our recommended adjustment is shown in Table 7.26.

Table 7.26: Recommended expenditure profile for Werribee West low level reservoir

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	0.5	1.6	3.1	1.6	-	**6.3**
Revised forecast	0.5	1.5	3.1	1.5	-	**6.1**
Net change	**-**	**-**	**-0.1**	**-0.1**	**-**	**-0.2**

Note: numbers may not add due to rounding

7.5 Other significant capital projects

The following section discusses a number of significant capital projects proposed by City West Water that are outside the top ten projects.

7.5.1 Werribee West – 600mm inlet/outlet main

We noted in our Draft Report that we had yet to receive sufficient information and documentation to confirm the proposed level of capital expenditure and deliverability of the Werribee West 600mm inlet/outlet main project. As such, for the purposes of the Draft Report, we recommended removing the proposed capital expenditure for this project pending receipt of supporting information and documentation.

In response to the Draft Report City West Water provided additional information in relation to the proposed capital expenditure and deliverability of the project. Our review of the Werribee West 600mm inlet/outlet main project, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The Werribee West 750mm inlet/outlet main, the 600mm inlet/outlet main and low level reservoir constitute Stage 1 of the potable water supply works that are proposed for the Werribee West Zone. Stage 1 is expected to be completed by June 2012. The Werribee West 600mm inlet/outlet main is part of Stage 1 works for the Werribee West Supply Zone as discussed in Section 7.4.8.

Project Expenditure:

The total estimated capital cost for the Werribee West 600mm inlet/outlet main as per City West Water's Water Plan is $4.94 million ($2008/09).

Table 7.27 below provides a breakdown of the estimated capital expenditure.

Table 7.27: Cost estimate for the Werribee West 600mm inlet/outlet main

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
Pipeline	3.76
Detailed design	0.12
Heritage related costs	0.03
Flora and fauna related costs	0.02
Geotechnical	0.02
Contingency (20 per cent)	0.99
Total Cost Estimate	**4.94**

Source: City West Water

As the table above shows, the pipeline is the dominant expenditure item, accounting for over 75 per cent of the total project cost. The other significant expenditure item is the 20 per cent project contingency. Given that the detailed design and site investigation is still underway (see Project Delivery below), we believe that a project contingency of 20 per cent is appropriate.

However, we noted in the Draft Report that the total project cost as per the Water Plan ($4.9 million) differed significantly from that in City West Water's Asset Development Plan ($4.3 million). This increase exceeds that which would be expected from normal cost escalation. In its response to the Draft Report, City West Water stated that a real 3.5 per cent capital escalation factor has been applied up to the commissioning date for the Werribee West 600mm inlet/outlet main project. Given that this is inconsistent with City West Water's own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West 600mm inlet/outlet main project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

Project Delivery:

The Werribee West 600mm inlet/outlet main is expected to be completed by June 2012.

We note that the detailed design and investigations of the site are currently underway, and are expected to be completed by December 2009. The tender for

the construction of the Werribee West 600mm inlet/outlet main is then expected to be released in January 2010, with formal responses-to-tender due March 2010. Once cost estimates have been received from bidders, City West Water will seek formal approval from the Board in April 2010, with the tender to be awarded in the same month. The project is expected to be fully commissioned by June 2012.

Given City West Water's experience in delivering similar water main and potable water supply augmentation works, and its understanding of the potential risks, City West Water is confident that the project will meet the above milestones and be delivered by June 2012.

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West 600mm inlet/outlet main by June 2012.

Findings:

Given that City West Water's application of a real 3.5 per cent capital escalation factor is inconsistent with their own stated methodology of applying a real capital escalation factor of 2.5 per cent in the Water Plan, we believe that the application of a real 3.5 per cent capital escalation factor is inappropriate.

As such, we recommend adjusting the capital expenditure proposed by City West Water in relation to the Werribee West 600mm inlet/outlet main project by applying a real capital escalation factor of 2.5 per cent (as opposed to a 3.5 per cent factor).

After reviewing detailed information relating to the deliverability of the project, including a detailed development area strategy, project submissions to the Board and a project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee West 600mm inlet/outlet main by June 2012.

The impact of our recommended adjustment is shown in Table 7.28.

Table 7.28: Recommended expenditure profile for Werribee West 600mm inlet/outlet main

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	-	1.4	2.4	1.2	-	**4.9**
Revised forecast	-	1.3	2.3	1.2	-	**4.8**
Net change	-	-	-0.1	-	-	**-0.1**

Note: numbers may not add due to rounding

7.5.2 Meter replacement program

Project Overview:

City West Water has an ongoing meter replacement program to replace existing residential meters that have exceeded their accuracy threshold.

City West Water's meter replacement program is an accuracy-based replacement program, with meters smaller than 50mm replaced when they have exceeded the accuracy limit. The accuracy limit is determined by the volume at which the flow through the meter is calculated to have exceeded the amount required to degrade the meters accuracy to more than -4 per cent.

For meters that are larger that 50mm, City West Water will replace the meter if it has exceeded the accuracy limit or the economic limit. The economic limit is the volume at which the water lost because of the meters accuracy reaches a value (wholesale) at which it is cheaper to replace the meter than to continue utilising the existing meter.

The meter replacement program has been designed to maintain the accuracy of City West Water's meter fleet at the current estimate of approximately 1,800ML of unaccounted water. This volume of unaccounted water is then factored into City West Water's revenue and demand forecasts.

A meter testing program has been budgeted for in the condition monitoring program to determine meter accuracy based on testing of samples of the meter population.

Project expenditure:

City West Water has forecast a total capital expenditure of $4.5 million over the period from 2009/10 to 2012/13. Table 7.29 below outlines City West Water's annual proposed capital expenditure on replacement meters over the period.

Table 7.29: Cost Estimates for City West Water's replacement meters program ($m, 2008/09)

	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	1.1	1.1	1.1	1.2	**4.5**

Source: City West Water

As noted above, expenditure on meter renewals is driven by City West Water's policy of maintaining the accuracy of the existing meter fleet at approximately 1,800ML of unaccounted water.

We note that forecast expenditure in 2008/09 for meter replacements is $0.5 million. This is due to the accuracy-based methodology (discussed above) only recently being introduced after a review of the previous methodology in 2007-08. The 2008/09 budget estimates for meter replacements were developed with the previous model, resulting in an estimate of $0.5 million; an estimate that City West Water has stated is insufficient to replace the meters identified under the new methodology. As such, we are comfortable with the increase in expenditure from $0.5 million in 2008/09 to $1.1 million in 2009/10 outlined in the Water Plan.

City West Water has provided the unit cost rates to supply and replace a standard 20 mm potable water meter, and we have reviewed these unit rates in detail. We have also benchmarked City West Water's proposed unit rates with other water businesses and note that City West Water's unit rates are comparable. As such, we are comfortable with the level of capital funding proposed by City West Water for the meter replacement program.

We believe that the supply of meters presents a potential opportunity for shared services savings on the basis of the combined purchasing power of the three water business.

Project delivery:

This project is ongoing. We believe that City West Water is well placed to deliver its ongoing meter replacement program.

Findings:

Based on a review of City West Water's historical and proposed expenditure, the unit rates provided by City West Water and a benchmark comparison, we are comfortable with the level of capital funding proposed by City West Water for the meter replacement program in the Water Plan. As such, we believe that no adjustments are required to City West Water's proposed capital program in the

Water Plan in relation to the meter replacement program. This is shown in the Table 7.30 below.

Table 7.30: Recommended expenditure profile for replacement meter program ($m, 2008/09)

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	-	1.1	1.1	1.1	1.2	**4.5**
Revised forecast	-	1.1	1.1	1.1	1.2	**4.5**
Net change	-	-	-	-	-	**-**

7.5.3 Dunnings Road to Sneydes Road

For the purposes of the Draft Report we were comfortable with the proposed project expenditure of the project. However, given minor discrepancies between the most recent project proposal submitted to the Board and the Water Plan regarding the expected completion date of the project, we requested clarification of this issue for the Final Report.

In response to the Draft Report, City West Water has confirmed that the extension of the 900mm distribution water main from Dunnings Road to Sneydes Road was successfully completed in December 2008, as per the revised timelines in the project proposal to the Board.

Project Overview:

Point Cook is a major development area located in the North Essendon Water Supply Zone. When fully developed, the Point Cook area will comprise approximately 15,000 residential lots.

With significant growth forecast to occur south of Sneydes Road, the existing 900mm distribution main at Dunnings Road needs to be extended south along Boardwalk Boulevard from Dunnings Road to Sneydes Road to ensure that adequate supply can be provided to the Point Cook growth corridor and to provide system capacity to cater for the significant growth that is forecast.

This particular capital project was originally proposed to be undertaken in 2011/12. However, Wyndham City Council advised City West Water of its intention to tender for the construction of the remainder of Boardwalk Boulevard between Dunnings Road and Snyedes Road. This provided City West Water with the opportunity to undertake construction of the water main in conjunction with Wyndham City Council works in 2008.

The forecast growth in the Point Cook development area was the cost driver for this project. As noted above, this project was successfully completed in December 2008.

Project Expenditure:

As per the Water Plan, the total expected project expenditure for the extension of the water main along Boardwalk Boulevard from Dunnings Road to Sneydes Road was $3.69 million.

Table 7.31: Cost Estimate for Dunnings Road to Sneydes Road

Project Asset/Item	Water Plan Cost Estimate ($m, 2008/09)
Construction	3.23
Construction of pipeline in conjunction with road contractor	0.13
Contingency	0.33
Total Cost Estimate	**3.69**

Source: City West Water

As noted above, this project was successfully completed in December 2008. City West Water has confirmed that the actual project expenditure was $3.61 million; however there are some minor outstanding claims to Wyndham City Council. These claims are expected to total approximately $200,000. Even considering these relatively minor claims, the final actual expenditure for the extension of the 900mm distribution water main from Dunnings Road to Sneydes Road will be within five per cent of the final project budget.

Project Delivery:

As per City West Water's Water Plan, the project was scheduled to commence in 2008/09 and finish construction in 2009/10. However, due to Wyndham City Council bringing forward the construction of the remainder of Boardwalk Boulevard between Dunnings Road and Snyedes Road, City West Water revised the expected completion date to December 2008 to take advantage of the council's road works. The revised completion date was presented to the City West Water Board in an updated project proposal.

As noted above, City West Water has confirmed that this project was successfully delivered within the revised timelines by December 2008.

Findings:

As per City West Water's Water Plan, the project was scheduled to commence in 2008/09 with construction completed in 2009/10. As noted above, the project was brought forward and successfully delivered in December 2008. We have made adjustments to project expenditure proposed in the Water Plan to reflect the fact that the project has been completed. These adjustments are shown in the table below.

Table 7.32: Recommended expenditure profile for the Dunnings Road to Sneydes Road project

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	**2.55**	**1.14**	0.00	0.00	0.00	**1.14**
Revised forecast	2.19	0.00	0.00	0.00	0.00	**0.00**
Net change	**-0.36**	**-1.14**	**0.00**	**0.00**	**0.00**	**-1.14**

7.5.4 Werribee Technology Precinct Recycled Water Project

We noted in our Draft Report that we are satisfied with the scope, cost drivers and estimated capital expenditure of the proposed Stage 2 of the Werribee Technology Precinct Recycled Water project. However, we had not received sufficient information in relation to the deliverability of the project to make a finding on whether the proposed project can delivered within City West Water's nominated timeframe.

In response to the Draft Report, City West Water provided additional information in relation to the deliverability of the project. Our review of the Werribee Technology Precinct Recycled Water Project, incorporating the most recent information provided by City West Water, is detailed below.

Project Overview:

The Werribee Technology Precinct is a 900 hectare site managed by the Department of Primary Industries. The site is located approximately 25 km south-west of the Melbourne CBD. Recycled water is currently supplied to eight major customers in the precinct and demand for recycled water is approximately 315 ML per annum. The recycled water is currently used for such purposes as landscaping and other irrigation, wash down of facilities and providing water for the operation of Melbourne Waters Hoppers Crossing Pumping Station

This project involves City West Water investigating the feasibility of Stage 2 of the Werribee Technology Precinct project which will supply up to 107ML per annum (in addition to the 315 ML already being supply each year) of recycled water to five Wyndham City Council reserves and open spaces, five schools and four commercial properties.

The Class A recycled water is sourced by City West Water from Melbourne Water's WTP. The driver for this project is compliance with the Government's target for 20 per cent of wastewater to be recycled by 2010.

Project Expenditure:

The following table provides a breakdown of the estimated capital expenditure for Stage 2 of the Werribee Technology Precinct Recycled Water project, and the forecast annual demand for recycled water.

Table 7.33: Cost Estimate for Werribee Technology Precinct Recycled Water Project

Project Asset/Item	Forecast Annual Demand (ML)	Water Plan Cost Estimate ($m, 2008/09)
Extension of WTP recycled water pipeline supply	37.0	0.82
Grange Secondary College extension	10.0	0.26
Hogan's Road Reserve, Derrimut Heath Primary School and St James Primary School extensions	26.0	0.97
Wooten Road Reserve extension	16.0	0.68
Supply to Werribee Cemetery and Federation Residential Village	18.0	0.48
Upgrade to pumping infrastructure	-	0.20
Additional storage tank	-	0.20
Total Estimate	**107.0**	**3.61**

Source: City West Water

The total estimated capital cost proposed by City West Water for Stage 2 of the Werribee Technology Precinct Recycled Water project is $3.61 million from 2008/09 to 2010/11.

After reviewing a detailed project business case, project budget estimations and detailed project feasibility studies, we are satisfied with the capital expenditure

proposed by City West Water for the Werribee Technology Precinct Recycled Water project in the Water Plan.

Project Delivery:

The project is expected to be fully commissioned by May 2011. City West Water has confirmed that the functional design and land capability assessment stages of the project are currently underway. Table 7.34 below provides an outline of the key project milestones.

Table 7.34: Key project milestones

Milestone	Date
Business case approval by Board	June 2009
Detailed design tender released	July 2009
Detailed design tender awarded	August 2009
Customer agreements completed	October 2009
Detailed design completed	March 2010
Construction tender released	September 2010
Construction tender awarded	October 2010
Construction completed	May 2011
Commissioning of project	May 2011

Source: City West Water

After reviewing detailed information relating to the deliverability of the project, including a detailed business case and project program, we believe that barring any unforeseen events, City West Water is well placed to meet the above milestones and deliver the Werribee Technology Precinct Recycled Water project by May 2011.

Findings:

After reviewing a detailed project business case, project budget estimations, project submissions to the Board, and a detailed project program, we are comfortable with the proposed level of project expenditure and the proposed deliverability of the project.

As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the Werribee Technology Precinct Recycled Water project. This is shown in the table below.

Table 7.35: Recommended expenditure profile for the Werribee Technology Precinct Recycled Water project

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
Water Plan	0.3	1.7	1.6	-	-	**3.3**
Revised forecast	0.3	1.7	1.6	-	-	**3.3**
Net change	-	-	-	-	-	**-**

7.5.5 Ongoing 1:5 Compliance Works

Project Overview:

This project is designed to bring City West Water's sewer network to 1 in 5 year Average Recurrence Interval compliance as per existing EPA licence requirements. There are currently two known hydraulically deficient catchments in the City West Water region, namely Five Mile Creek catchment and Taylors Creek Catchment.

Project Expenditure:

The total estimated capital cost of bringing City West Water's sewer network in line with EPA requirements is $2.6 million, with work commencing from 2009/10 and continuing throughout the next regulatory period.

City West Water has confirmed that the modelling for the ongoing 1:5 compliance works is currently being undertaken with the current project estimates based on historical spends. We have reviewed the average historical expenditure for 1:5 compliance works, and note that since 1997 historical annual average expenditure is approximately $1.1 million. As such, the level of capital expenditure proposed by City West Water for ongoing 1:5 compliance works in the Water Plan is considerably lower than historical levels.

Given historical levels of expenditure and proposed expenditure for ongoing 1:5 compliance works, we are comfortable with the level of capital funding proposed by City West Water for the ongoing 1:5 compliance works.

Project Delivery:

This project is ongoing. We believe that City West Water is well placed to deliver its ongoing 1:5 compliance works program. We note that proposed levels of works are lower than historical performance.

Findings:

Based on a review of City West Water's historical and proposed expenditure, we are comfortable with the level of capital funding proposed by City West Water for the ongoing 1:5 compliance works in the Water Plan. As such, we believe that no adjustments are required to City West Water's proposed capital program in the Water Plan in relation to the ongoing 1:5 compliance works. This is shown in Table 7.36 below.

Table 7.36: Recommended expenditure profile for the ongoing 1:5 compliance works

Recommended Expenditure Profile ($m, 2008/09)	2008/09	2009/10	2010/11	2011/12	2012/13	Total
Water Plan	-	0.6	0.6	0.7	0.7	**2.6**
Revised forecast	-	0.6	0.6	0.7	0.7	**2.6**
Net change	-	-	-	-	-	**-**

7.6 Other comments on capital expenditure

In addition to the top 10 projects and other significant capital projects, we offer the following overall observations and recommendations.

7.6.1 Renewals program

City West Water undertakes renewals for four broad reasons:

- maintain City West Water's asset risk profile below a threshold level decided at Board level (risk renewals)
- ensure key performance indicators can continue to be met (regulation renewals)
- ensure facility installations (such as pump stations) continue to meet systems requirements (facility renewals)
- take advantage of other authorities works to renew assets ahead of time but at considerable cost savings (efficiency renewals)

As such, City West Water's renewals program is divided into the four sub-programs of Risk, Regulation, Facilities and Efficiency. The following table outlines City West Water's indicative annual renewals budgets for each of the four sub-programs.

Table 7.37: City West Water's proposed renewals budgets ($m, 2008/09)

Renewal program	2009/10	2010/11	2011/12	2012/13	Total
Risk renewals	22.0	21.3	20.6	19.6	**83.5**
Regulation renewals	4.8	5.0	5.2	5.4	**20.4**
Facility renewals	1.1	1.0	1.3	1.2	**4.6**
Efficiency renewals	1.0	1.0	1.1	1.1	**4.2**
Total	28.9	28.3	28.2	27.3	**112.7**

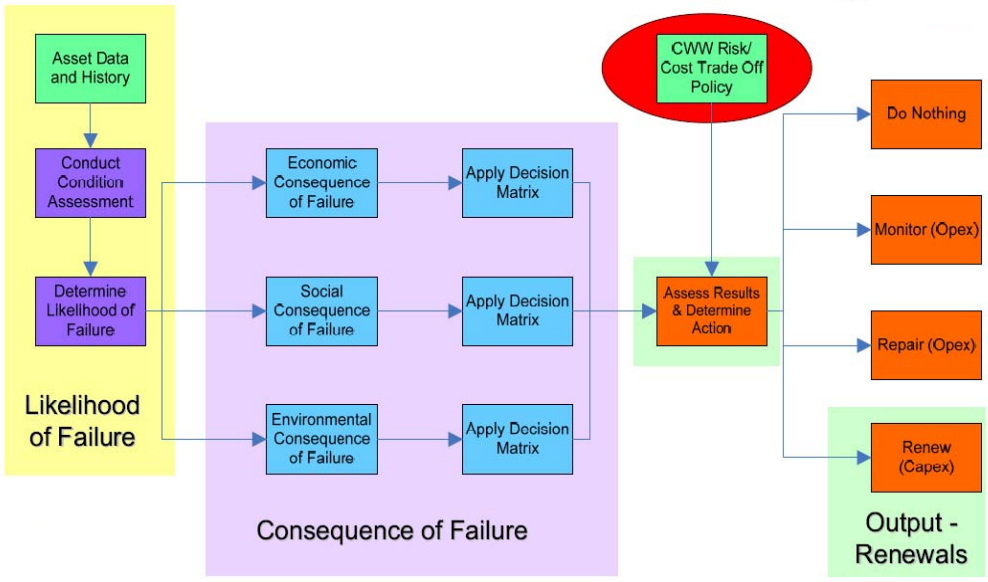
Source: City West Water

As outlined in Table 7.37, the risk renewal program is by far the largest of the four sub-programs. As such we have reviewed the basis for this program in detail below.

Risk Renewals Program

City West Water's risk renewals program involves the determination of the economic, social and environmental consequence of asset failure, based on condition assessment and the likelihood of failure. An overview of City West Water's risk management model is outlined in the figure below.

Figure 7.2: City West Water's asset risk management model



Source: City West Water

City West Water has recently implemented a risk-based approach to its network infrastructure renewals program. The Asset Criticality Risk Model (ACRM) drives

capital expenditure in renewals, and considers all the physical details of the asset, its performance history and current condition when determining the likelihood of failure. The model is based on the Australian/New Zealand Standard for Risk Management AS/NZA 4360:1999.

The ACRM has been developed by City West Water to improve the management of risk among the existing asset base. The model involves the assessment of each asset's condition (on a rating of 1-5 based on likelihood of failure) and consequence of failure (in ascending order from insignificant, minor, moderate, major and catastrophic). The model also considers economic, social and environmental costs when considering the consequence of failure. The model then presents each asset in a standard risk assessment matrix as follows:

Figure 7.3: City West Water's risk assessment matrix

Likelihood of Failure	Economic or Social or Environmental Consequence of Failure				
	Insignificant	Minor	Moderate	Major	Catastrophic
5	Low	Medium	High	Extreme	Extreme
4	Low	Low	Medium	High	Extreme
3	Negligible	Negligible	Low	Medium	High
2	Negligible	Negligible	Negligible	Low	Medium
1	Negligible	Negligible	Negligible	Negligible	Low

Source: City West Water

Figure 7.4: Risk assessment descriptions

Risk Level	Description
Extreme	Immediate action to lessen the likelihood of failure or actions to mitigate the consequences prior to rehabilitation.
High	3 to 12 months to renew/to implement the works. The condition of these assets would be monitored from performance data, field tests and/or inspection.
Medium	A medium term asset replacement or renewal program of say 1 to 5 years to systematically remove these assets from the risk category. In this category the condition of the assets will be verified before renewal using performance data, field tests and inspection as appropriate.
Low	Assets in this category generally have either less impact if they fail or are very unlikely to fail in the foreseeable future. Assets at higher likelihood of failure can be replaced or rehabilitated over a longer time period of up to 20 years or be replaced at the time of

	their failure. Their condition would generally be monitored through the use of performance data only.
Negligible	Assets assessed in this category have an insignificant impact if they fail. They are also very unlikely to fail having been assessed to be either in good condition or at a very early stage into their useful asset lives.

Source: City West Water

The model's primary focus is managing risk, not renewing infrastructure per se. City West Water believe that infrastructure should only be renewed to achieve a specific purpose (or performance). The model allows City West Water to develop a number of 'scenarios' or risk profiles for the entire business or groups of assets. In 2007 City West Water's Board approved the adoption of an asset risk profile that would see no assets in the extreme risk category and no assets in the high risk category where the consequence of failure would be catastrophic. We are satisfied with the adoption of such a risk profile as it should result in lower levels of ongoing renewals expenditure over the longer-term.

We note that the ACRM developed by City West Water is both a static and dynamic model. It allows for a snapshot of risk at any point in time but also allows for the change in static data, and hence risk, to be modelled over time. The model is updated every six months with new information, including physical attributes, performance history and current condition, and then recalculates City West Water's asset risk profile.

City West Water considers that the ACRM will bring the overall renewal program into the corporate risk management system and allow the Board to make decisions on the level of acceptable risk, with a common decision made for all assets. City West Water also believes that the ACRM will continuously improve as more performance data is collected over time.

City West Water has stated that modelling will be undertaken to determine their longer term renewal needs to maintain risk at acceptable levels. City West Water has also noted that to do so, the necessary model and modelling skills will need to be brought in house as part of the longer-term development of City West Water's core asset management skills.

We recognise that City West Water's adoption of the ACRM is relatively recent and we expect a number of improvements to be made over time as the amount of data and level of sophistication of that data improves. As such, we believe that the ACRM adopted by City West Water is a vital risk management tool, and we are

satisfied with the rigour and robustness of the model in driving risk-based renewals expenditure.

To gain an overall assessment of City West Water's risk renewal program we have reviewed the two largest individual risk renewal programs in Section 7.4. We have also reviewed the largest individual regulation renewal program in order to inform our overall assessment of City West Water's renewals expenditure.

Water main renewals

City West Water has engaged three contractors for the design and construction of water reticulation main renewals under separate three year schedule of rates contracts, awarded in December 2007. The contracts are for a period of three years subject to satisfactory performance by the contractors. It is a condition of City West Water's contract that the schedule of rates be reviewed annually and the contract can be extended for another year subject to the contractors meeting agreed Key Performance Indicators (KPI's) as determined by City West Water.

To increase flexibility in the terms of the contract, City West 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 City West Water.

The schedule of rates contracts for all three providers have been recently reviewed and renewed by City West Water on 6 January 2009. While the prices provided by the three contractors vary across the type of works offered (e.g. the diameter of water mains, the method renewal), City West Water believe that all three contractors will be required for the successful and timely completion of the annual water main renewal projects.

We note that the average increase in unit rates from the recent contract review in January, for routine works and package works was 5.8 per cent and 5.0 per cent respectively. We note that the year-end to September rate of inflation was 5.0 per cent. Noting that the recent contract renewal agreed to by City West Water was subject to an open and competitive tender process, we are comfortable with the increase in rates agreed to by City West Water.

In relation to water distribution mains renewals, due to the significant variety of works required and the relatively small volume of work City West Water does not have a schedule of rates contract. Water distribution mains renewals works are released to public tender under design and construct contracts as individual projects or a package of works. City West Water believes that this approach

ensures the most competitive unit rate is achieved for each distribution mains renewal project. This approach also applies to wastewater distribution mains renewals.

Wastewater main renewals

As with water main renewals, City West Water has engaged three contractors for the design and construction of wastewater main renewals under separate three year schedule of rates contracts, awarded in December 2007. The wastewater main renewal contracts are also for a period of three years subject to satisfactory performance by the contractors. City West Water has informed us that the contract is currently under review, and will be finalised in March 2009. As such, we have not had the opportunity to review the updated contract unit rates for wastewater main renewals.

However, we have reviewed the existing contract unit rates for wastewater mains renewals and benchmarked these against other water businesses and note that City West Water's unit rates are comparable. As such, we are satisfied with the existing contract unit rates.

Given the outcome of the recent contract review for water mains renewals and discussions with City West Water, we expect that any increase in the average unit rate for wastewater renewals will be consistent with water mains renewals.

Proposed and historical renewals expenditure:

As reported in the Water Plan, over the period from 2004/05 to 2007/08, City West Water's actual expenditure on renewals was $90.6 million, equating to an average annual expenditure of approximately $22.7 million. City West Water had proposed to spend $65.4 million over that period. The increase of $25.2 million above forecast expenditure was predominantly related to City West Water's adoption of the ACRM which involves the assessment of each asset's condition and consequence of failure. City West Water has stated that the increase in expenditure has removed a number of high-risks for the short-term and is expected to be followed by a lower level of on-going expenditure on renewals in the longer-term.

As noted above, City West Water's forecast capital expenditure on water, wastewater and recycling asset renewals over the next regulatory period is $112.7 million. This involves expenditure across all four sub-programs of renewals, and equates to an average annual expenditure of approximately $28.2 million over the

next regulatory period. This represents an increase of approximately 24 per cent over expenditure levels from the 2004/05 to 2007/08 period.

We acknowledge that growth, in many instances, may have caught up with some assets or groups of assets at a time when the asset base is ageing and consequently City West Water's tolerance to asset failure has decreased and hence their risk (of failure) has increased. We note City West Water's foresight in introducing the ACRM to address the ageing asset base and associated increase in risk of failure.

While City West Water has stated that renewals expenditure is expected to decline over the longer term (as high-risk assets are removed over time), we note that City West Water's proposed renewals expenditure, at least in the short-term, is expected to increase significantly.

Based on our review of the three largest renewal programs (see Section 7.4), we believe that the level of capital expenditure proposed by City West Water for renewals is adequate and appropriate.

7.6.2 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, unless where explicitly stated.

7.6.3 Depreciation rates

We note that the ESC uses a weighted average asset life to model the depreciation of assets from capital projects. A weighted average asset life is based on asset lives for each category of assets weighted by the level of expenditure proposed for the category of assets.

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 7.3 for further details. Where information has been made available to us, we are generally satisfied that the commissioning dates and depreciation commencement dates match.

7.6.4 *Not prescribed capital expenditure*

We have no comments to make in relation to non-prescribed capital expenditure.

7.6.5 *Other water capital expenditure*

Other recommendations:

After reviewing a number of City West Water capital project business cases, it has become clear that a number of capital projects undertaken by City West Water have experienced significant cost estimate increases over the planning, design and tender phases. Examples encountered include the Altona Golf Course recycling scheme, the Altona Industrial recycling scheme, and the Derrimut Interceptor Sewer.

Although it is the not the focus of this review, we recommend that City West Water undertake a review of the existing project forecasting procedures and processes in order to identify areas for improvement.

7.7 *Conclusions and recommendations*

On the basis of our review of City West Water's 2009 Water Plan and relevant supporting documentation we have recommended a number of adjustments to the forecast capital expenditure. These adjustments are based on our review of City West Water's nominated top ten major capital projects and a selection of other major capital projects. Our review of major projects accounts for over 60 per cent of City West Water's forecast capital expenditure. Our recommended changes to City West Water's capital expenditure forecasts are listed below:

- 1150mm main Sayers Road to Dohertys Road – a reduction of $0.3 million from 2009/10 to 2011/12
- Werribee West 750mm inlet/outlet – reduction of $0.3 million from 2009/10 to 2011/12
- Werribee West low level reservoir – reduction of $0.2 million from 2009/10 to 2011/12
- Werribee West 650mm inlet/outlet – reduction of $0.1 million from 2009/10 to 2011/12
- Dunnings Road to Sneydes Road – a net decrease of $0.36 million in 2008/09 and a decrease of $1.14 million in 2009/10 to reflect the fact that this project was brought forward and completed over 2007/08 and 2008/09
- Capital cost escalation – reduction of $35.5 million from 2009/10 to 2012/13

- Deferrals of capital expenditure, as reported by City West Water to the ESC, removing a net $3.94 million from 2008/09 and adding a net $4.16 million into the next regulatory period.

These changes are shown in the table below.

Table 7.38: Overview of recommended changes to capital expenditure ($m, 2008/09)

Expenditure item		2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	Total (09-10 to 12-13)
1150mm main – Sayers Road to Dohertys Road	Water Plan	-	0.26	3.20	6.41	3.23	-	**12.84**
	Revised forecast	-	0.26	3.14	6.24	3.12	-	**12.50**
	Net change	**-**	**0.00**	**-0.06**	**-0.17**	**-0.11**	**-**	**-0.34**
Werribee West – 750mm inlet/outlet	Water Plan	-	-	3.31	5.98	2.99	-	**12.29**
	Revised forecast	-	-	3.25	5.82	2.89	-	**11.96**
	Net change	-	**-**	**-0.06**	**-0.16**	**-0.10**	**-**	**-0.32**
Werribee West – low level reservoir	Water Plan	-	0.54	1.57	3.14	1.57	-	**6.28**
	Revised forecast	-	0.54	1.54	3.06	1.52	-	**6.11**
	Net change	-	**-0.01**	**-0.03**	**-0.08**	**-0.05**	**-**	**-0.17**
Werribee West – 600mm inlet/outlet	Water Plan	-	-	1.37	2.39	1.19	**-**	**4.95**
	Revised forecast	-	-	1.34	2.32	1.15	-	**4.82**
	Net change	**-**	**-**	**-0.03**	**-0.06**	**-0.04**	**-**	**-0.13**
Dunnings Road to Sneydes Road	Water Plan	-	**2.55**	**1.14**	0.00	0.00	0.00	**1.14**
	Revised forecast	-	2.19	0.00	0.00	0.00	0.00	**0.00**
	Net change	**-**	**-0.36**	**-1.14**	**0.00**	**0.00**	**0.00**	**-1.14**
Cost escalation	**Net change**	-	**-2.20**	**-6.74**	**-11.39**	**-10.25**	**-7.14**	**-35.52**
Total Water Plan forecast		**76.04**	**90.37**	**139.80**	**159.55**	**109.03**	**61.49**	**469.87**
Net changes		**0.0**	**-2.57**	**-8.05**	**-11.87**	**-10.56**	**-7.14**	**-37.63**
Total revised forecast			**87.80**	**131.75**	**147.68**	**98.47**	**54.35**	**432.24**
Business adjustments to 2008-09 forecast	**Net change**	-	**-3.94**	**1.86**	**2.30**	**0.00**	**0.00**	**4.16**
Total revised forecast			**83.86**	**133.61**	**149.98**	**98.47**	**54.35**	**436.40**

Note: numbers may not add due to rounding

8 Glossary

8.1 *Key terms and acronyms used*

ACRM	Asset Criticality Risk Model
AER	Australian Energy Regulator
BAU	Business as usual
CBD	Central Business District
CPI	Consumer Price Index
CRSWS	Central Regions Sustainability Water Strategy
CWW	City West Water
Current regulatory period	Regulatory period from 1 July 2005 to 30 June 2009
EBA	Enterprise Bargaining Agreement
ESC	Essential Services Commission
GL	Gigalitre or one billion litres
KPI	Key performance indicator
MFRO	Micro Filtration Reverse Osmosis
ML	Megalitre or one million litres
MRET	Mandatory Renewable Energy Target
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
SEW	South East Water

Shut off block	Area of reticulation mains that can be isolated from the main system using valves
SoO	Statement of Obligations
VCEC	Victorian Competition and Efficiency Commission
VRET	Victorian Renewable Energy Target
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	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
		Water Our Future behavioural change program until 2015 (3.3) 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	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	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.	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

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
	this stage. 5.10 The Government will introduce mandatory water efficient plumbing measures such as water conserving shower roses and 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.	Water Trust to extend the Water Smart Homes and Gardens 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)	Actions would include water-efficient showerheads, washing machines, evaporative air conditioners and Melbourne friendly gardens.	GL p.a. by 2015) Program 4: Evaporative air conditioner compliance 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	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)

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
	Supply- Demand Strategies. 5.17 The Government will require improved water efficiency in new Government buildings. 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			

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
	industrial water users within the metropolitan area as soon as the initial program has been completed for the top 200 industrial water users.			
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.	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		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).

	Our Water Our Future	Central Region Sustainable Water Strategy	Water Supply-Demand Strategy	Joint Water Conservation Plan Metropolitan Reuse & Recycling Plan 2008-2013
	5.27 Over the next four years, the Government will consider investment in strategic water recovery and recycling programs that: 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.	residential and commercial developments and treatment plants for stormwater reuse. 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.		

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