



**Essential Services
Commission**

2013-18 Review of Water Prices

**Assessment of expenditure forecasts
for regional urban businesses**

Coliban Water

Final Report

20 February 2013

Mr Marcus Crudden
Acting Director - Water
Essential Services Commission
Level 2, 35 Spring St
Melbourne VIC 3000

20 February 2013

Dear Marcus

Re: Assessment of expenditure forecasts for regional urban businesses

We are pleased to provide our Final Report setting out our assessment of Coliban Water's operating and capital expenditure for the 2013-2018 regulatory period. This Final Report provides our findings and recommendations. It should be read in conjunction with our *Overview* document, which sets out our approach to a number of common expenditure issues across the businesses we have reviewed.

Please do not hesitate to contact me if you have any questions regarding the report.

Yours sincerely



Paul Liggins
Partner
Deloitte Touche Tohmatsu

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Executive Summary

Background

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria's water businesses for the period 1 July 2013 to 30 June 2018, referred to in this document as 'the next regulatory period' or third water plan period (WP3).

The businesses have submitted Water Plans to the ESC for the WP3 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 March 2013, with a final decision issued in May 2013.

Deloitte has been engaged by the ESC to review the expenditure forecasts made by 10 regional urban water businesses.

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 expenditure meets certain criteria.

In relation to operating expenditure we have been asked to provide advice on whether changes in operating costs are consistent with the timing of major capital projects; that businesses are fulfilling their obligations and meeting customer service expectations as cost efficiently as possible; that forecast divergences can be readily explained; and one-off costs associated with the drought have been removed. The ESC has highlighted that energy, labour, IT and chemical costs should be a significant focus of the review.

Process for review

We took the following approach to undertaking this review:

- We reviewed the Water Plans and supporting documentation provided by Coliban Water to the ESC
- We submitted a request for further information and prepared a number of questions for Coliban Water
- We visited Coliban Water on 13 and 14 November 2012 to discuss the Water Plan and our questions
- We prepared a Draft Report which was provided to the ESC on 11 December 2012
- We held discussions with Coliban Water regarding the Draft Report and reviewed a written response from Coliban Water which was provided to us on 25 January 2013.

Approach to review

In our assessment of operating and capital expenditure proposed by each of the nominated water businesses, we have followed the direction of the *Water Industry Act (1994)* and the *Water Industry Regulatory Order (WIRO)*. The WIRO requires, amongst other things that the ESC:

*(a) be satisfied that the prices contained in the **Water Plan** which the **regulated entity** proposes it be permitted to charge for **prescribed services** over the term of the*

Water Plan, or the manner in which the **Water Plan** proposes that such prices are to be calculated or otherwise determined, are such as to:

(i) provide for a sustainable revenue stream to the **regulated entity** that nonetheless does not reflect monopoly rents or inefficient expenditure by the **regulated entity**;

(ii) allow the **regulated entity** to recover its operational, maintenance and administrative costs;

(iii) allow the **regulated entity** to recover its expenditure on renewing and rehabilitating existing assets;

(iv) allow the **regulated entity** to recover:

(A) a rate of return on assets as at 1 July 2004 that are valued in a manner determined by, or at an amount otherwise specified by, the **Minister** at any time before 1 July 2004;

(B) a rate of return on investments made after 1 July 2004 to augment existing assets or construct new assets;

Recommendations - operating expenditure

We have recommended the changes set out below to Coliban Water's forecast operating expenditure. Note that throughout this report, unless indicated otherwise, references to Coliban Water's 'forecast' or 'proposal' refer to its original September Water Plan proposal and not any subsequent proposals or adjustments that have been received.

Table E1 Coliban Water forecast controllable operating expenditure and recommended adjustments (\$m, 01/01/2013)

Operating expenditure item	Water Plan forecast					Total WP3
	2013-14	2014-15	2015-16	2016-17	2017-18	
Proposed controllable operating expenditure (\$m)	62.452	62.166	62.567	63.527	62.479	313.192
Recommended adjustments						
Labour	0.040	-0.111	-0.325	-0.195	-0.208	-0.799
Electricity	0.994	0.996	1.077	1.132	1.191	5.390
Defined benefits	-0.176	-0.172	-0.167	-0.163	-0.158	-0.836
Biosolids reuse	-1.250	-0.650	-0.050	-0.350	-0.500	-2.800
Water quality	-0.654	-0.603	-0.556	-0.672	-0.469	-2.954
Contracted services	-0.260	-0.138	-0.507	-1.036	-0.668	-2.610
Total recommended adjustments	-1.306	-0.678	-0.529	-1.284	-0.812	-4.609
Recommended operating expenditure	61.146	61.488	62.039	62.243	61.667	308.583

Notes: Controllable operating expenditure excludes licence fees, environmental contribution and bulk water purchases.

Figure E1 compares our recommended operating expenditure for Coliban Water (on a per connection basis) with Coliban Water's proposal.

Figure E1 Proposed and recommended operating expenditure (\$, 01/01/2013)

Note: Excludes rural operating expenditure (and customer numbers) and the fixed component of BOOT expenditure.

Performance against productivity hurdle

The ESC's Guidance Paper notes that the ESC will require all businesses to achieve a minimum of 1% per year productivity improvement on customer growth adjusted business as usual (BAU) operating expenditure for the WP3 period (the productivity hurdle).

We have interpreted BAU operating expenditure as being all operating expenditure other than expenditure that is the result of new or changed service outcomes, or new obligations imposed by Government or technical regulators.

In the case of Coliban Water, we have assessed the following increases in operating expenditure above the 2011-12 baseline as meeting this definition:

- Electricity
- Defined benefits superannuation contributions
- Introduction of the biosolids program
- Introduction of a mains cleaning program for water distribution quality
- Hardship scheme.

The following table summarises the expenditure above the 2011-12 BAU for these items that we have assessed as meeting the ESC's requirements for prudence and efficiency.

Table E2 Prudent and efficient new initiatives and obligations expenditure above the 2011-12 baseline (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Electricity		1.026	1.017	1.092	1.140	1.189	5.464
Defined benefits		0.124	0.121	0.117	0.114	0.111	0.588
Biosolids		0.124	0.437	1.033	0.675	0.458	2.727
Water distribution quality		0.293	0.293	0.293	0.293	0.293	1.467
Hardship scheme		0.070	0.070	0.070	0.070	0.070	0.350
Total		1.638	1.938	2.606	2.292	2.122	10.596

Note: Electricity includes carbon tax impacts.

Table E3 below calculates a “recommended BAU expenditure” using our total recommended operating expenditure less recommended expenditure on new or changed service outcomes, or new obligations imposed by Government or technical regulators above the BAU target. This amount is then compared with the growth and productivity adjusted BAU target (calculated in Table 4-3) to obtain a view on whether or not Coliban Water’s operating expenditure, following our adjustments, meets the ESC’s productivity hurdle.

Table E3 Productivity hurdle assessment (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast					Total
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	WP3
Recommended operating expenditure		61.097	61.413	61.938	62.116	61.514	308.077
Less prudent and efficient new initiatives expenditure		1.638	1.938	2.606	2.292	2.122	10.596
Recommended BAU expenditure		59.459	59.475	59.332	59.824	59.392	297.481
Adjusted BAU target	58.230	59.004	59.395	59.789	60.185	60.584	298.957
Amount above BAU target		0.454	0.080	-0.457	-0.361	-1.192	-1.476

As shown in the table, following our recommended adjustments, and accounting for expenditure above the BAU target that is the result of new or changed service outcomes, or new obligations imposed by Government or technical regulators, Coliban Water meets the ESC’s productivity hurdle.

Capital expenditure

We have recommended changes set out below to Coliban Water’s proposed capital expenditure.

Table E4 Coliban Water forecast capital expenditure and recommended adjustments (\$m, 01/01/2013)

Capital expenditure item		Water Plan forecast					Total
		2013-14	2014-15	2015-16	2016-17	2017-18	WP3
Harcourt Rural Modernisation Project	Proposed	23.64	3.42	0.00	0.00	0.00	27.06
	Recommended	0.00	0.00	0.00	0.00	0.00	0.00
	Net change	-23.64	-3.42	0.00	0.00	0.00	-27.06
Echuca and Cohuna Water Treatment Plant Upgrades	Proposed	0.00	7.80	5.41	0.00	0.00	13.21
	Recommended	0.00	7.80	5.41	0.00	0.00	13.21
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Cohuna Water Reclamation Plant Refurbishment	Proposed	0.00	0.00	0.00	5.44	5.44	10.89
	Recommended	0.00	0.00	0.00	5.44	5.44	10.89
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Rochester Wastewater Connection to Echuca	Proposed	7.69	0.00	0.00	0.00	0.00	7.69
	Recommended	7.69	0.00	0.00	0.00	0.00	7.69
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bridgewater and Laanecoorie Water Treatment Plant Upgrades	Proposed	0.00	3.00	2.00	0.60	0.60	6.20
	Recommended	0.00	0.50	0.70	0.28	0.18	1.65
	Net change	0.00	-2.50	-1.30	-0.33	-0.43	-4.55
Water Main renewals program	Proposed	1.20	1.20	1.20	1.20	1.20	6.00
	Recommended	1.20	1.20	1.20	1.20	1.20	6.00

Capital expenditure item	Water Plan forecast					Total WP3	
	2013-14	2014-15	2015-16	2016-17	2017-18		
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Heathcote Backlog Sewerage	Proposed	0.00	0.00	0.00	4.00	1.60	5.60
	Recommended	4.00	1.60	0.00	0.00	0.00	5.60
	Net change	4.00	1.60	0.00	-4.00	-1.60	0.00
Occupational, Health and Safety Program	Proposed	1.10	1.20	1.20	1.00	0.90	5.40
	Recommended	0.83	0.83	0.83	0.83	0.83	4.14
	Net change	-0.27	-0.37	-0.37	-0.17	-0.07	-1.26
Sewer Main Renewals Program	Proposed	0.95	0.95	0.95	0.95	0.95	4.75
	Recommended	0.95	0.95	0.95	0.95	0.95	4.75
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Coliban Main Channel	Proposed	0.00	0.15	2.07	2.27	0.00	4.50
	Recommended	0.00	0.15	2.07	2.27	0.00	4.50
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Total proposed		53.65	34.49	30.32	28.95	30.59	178.00
Recommended capital expenditure		33.73	29.80	28.65	24.45	28.49	145.13
Recommended adjustments from proposed		-19.91	-4.69	-1.67	-4.50	-2.10	-32.87

Note: The proposed figures in the table above reflect Coliban Water's original forecasts.

1 Introduction

1.1 Background

The Essential Services Commission (ESC) is currently conducting a review of the proposed prices to be charged by Victoria's water businesses for the period 1 July 2013 to 30 June 2018, referred to in this document as 'the next regulatory period'.

The businesses have submitted Water Plans to the ESC for the next regulatory period. The Water Plans include forecasts of operating expenditure, capital expenditure, demand, proposed service standards and prices.

1.2 Scope of review

The ESC has engaged Deloitte to provide it with advice on whether the regional urban water businesses' proposed expenditure forecasts are consistent with the requirements of the legislative framework.

In undertaking this review, Deloitte's key responsibilities are to:

- Assess the appropriateness of the expenditure forecasts in relation to the key objectives of the review
- Provide independent advice to the ESC regarding the appropriateness of the forecasts
- Where Deloitte's advice indicates that a proposed expenditure level is not appropriate, propose to the ESC a revised expenditure level.

Capital expenditure

In relation to capital expenditure, we have focussed on the major projects that comprise a significant proportion of the total capital expenditure forecasts. In forming a view as to whether expenditure meets the requirements in the WIRO, and consistent with advice in the ESC's Guidance Paper, we have had regard to the following items:

- Does proposed capital expenditure reflect obligations imposed by Government (including technical regulators) or customers' service expectations?
- Are proposed new major capital works consistent with efficient long-term expenditure on infrastructure services?
- Does the business have appropriate asset planning procedures?
- Does the business have appropriate asset management systems in place?
- Does the business have appropriate project management procedures in place to enable effective delivery of capital works?
- Has a risk-based approach been adopted to develop the capital expenditure program? Is there clear evidence that projects are prioritised?
- Are major projects consistent with long-term strategies and planning?
- Is the timing for the proposed new capital expenditure reasonable?
- Are individual project cost forecasts reasonable and do not include undue contingencies or provisions, and reflect current efficient rates for undertaking capital expenditure in the Victorian water sector?
- Is capital expenditure deliverable in the timeframes proposed?

In relation to deliverability of individual projects as well as capital expenditure programs more broadly, the ESC has indicated that the following points need to be considered:

- The actual performance against previous capital expenditure programs and the business' demonstrated capacity to deliver against capital budgets
- The internal and external resources available to the water business to deliver the identified projects
- Timing of proposed capital programs in terms of deliverability, taking into account the proposed capital expenditure across the industry
- The opportunity to smooth the business's capital profiles or defer discretionary or non-essential projects from the start of the regulatory period to later in the period
- The business' risk sharing, and incentive and penalty payment arrangements with its contractors.
- Whether businesses have appropriate project management systems and processes in place.

Operating expenditure

In relation to operating expenditure we have been asked to provide advice on, amongst other things, whether changes in operating costs are consistent with the timing of major capital projects; that businesses are fulfilling their obligations and meeting customer service expectations as cost efficiently as possible; that forecast divergences can be readily explained; and one-off costs associated with the drought have been removed.

The ESC has highlighted that energy, labour, IT and chemical costs should be a significant focus of the review. The Guidance Paper also outlines the ESC's intention to remove expenditure relating to drought mitigation and other related unnecessary water conservation, in light of the fact that Victoria is no longer experiencing a period of drought.

In addition, the Guidance Paper notes that ESC requires businesses to achieve at least a 1% productivity improvement on business as usual (BAU) expenditure.

Our approach to assessing operating expenditure for each business can be briefly summarised as follows:

1. **Assess 2011-12 BAU and adjust where necessary** – In general, we have removed one off expenditure, drought and other water conservation expenditure and other defined benefits, ultimately reaching an adjusted BAU expenditure for 2011-12.
2. **Assess business identified operating expenditure items increasing from 2011-12 levels and identify cuts consistent with prudent and efficient expenditure** – We have reviewed key areas of expenditure and where we are not satisfied that the expenditure is prudent or efficient we have removed it from the forecast to determine a revised operating expenditure forecast.

In making our adjustments there are a number of areas or cost categories where issues are common across businesses – electricity cost increases being one example. We have applied a consistent approach to these areas across the businesses.

We have not reviewed licence fee payments or environmental contribution levy payments as part of our analysis. We understand the ESC will review these items itself.

3. **Compare revised operating expenditure to target BAU (adjusted where necessary)** – Following our assessment of key areas of expenditure, we compare our total recommended operating expenditure (less recommended expenditure on new or changed service outcomes, or new obligations imposed by Government or technical regulators) with a growth and productivity adjusted BAU target to obtain a view on whether or not the business meets the ESC's 1% productivity hurdle. Where a business

does not meet the productivity hurdle, we identify the further downward adjustment to expenditure required to meet the hurdle.

1.3 Structure of this report

This report describes our approach and sets out our findings from the review of Coliban Water's Water Plan. It is structured as follows:

- Chapter 2 provides an overview of our methodology for conducting the review, the process followed and key timelines
- Chapter 3 briefly summarises Coliban Water's Water Plan with respect to expenditure forecasts and outlines key drivers of expenditure such as government obligations, service standards and demand forecasts
- Chapter 4 provides our analysis, conclusions and recommendations on key issues with respect to Coliban Water's operating expenditure forecast
- Chapter 5 provides our analysis, conclusions and recommendations on key issues with respect to Coliban Water's capital expenditure forecast.

2 Overview of approach

2.1 Process for review

Our approach to undertaking the review has involved the following key steps.

2.1.1 Initial planning and workshop with the ESC

The following steps were taken in the initial planning phase of the project:

- An initial review of Water Plans, financial model templates and associated documentation was undertaken to identify key issues
- A workshop was held with ESC staff to identify and discuss key issues for the focus of the review
- A detailed review of Water Plans and templates was undertaken, with an initial set of queries produced to guide our site visits with the businesses.

2.1.2 Questions to business and site visits

Following the planning phase, we prepared questions for the businesses and arranged site visits:

- We conducted our site visit with Coliban Water on 13 and 14 November 2012
- The site visits were used to hold discussions with Coliban Water and receive further information on key issues as required.

2.1.3 Preparation of Draft Report

A Draft Report was prepared and provided to the ESC on 11 December 2012. The ESC subsequently provided the Draft Report to Coliban Water.

2.1.4 Response from Coliban Water

We held discussions with Coliban Water personnel regarding the Draft Report. A formal response to the Draft Report was provided by Coliban Water on 25 January 2013. This response accepted some elements of our Draft Report, but disagreed with other elements.

We have closely examined Coliban Water's response and the information it provided to support its views. We subsequently held additional discussions with Coliban Water to clarify certain aspects of the forecasts and its response.

2.1.5 Final Report

This Final Report sets out our views of whether Coliban Water's operating and capital expenditure forecasts meet the requirements of the ESC/WIRO. Where we do not believe this is the case we have prepared alternative forecasts or recommended adjustments.

2.2 Approach to assessing forecasts

Our approach to reviewing many items of capital and operating expenditure is set out in our companion *Overview* document which should be read in conjunction with this report.

3 Summary of Coliban Water’s forecasts

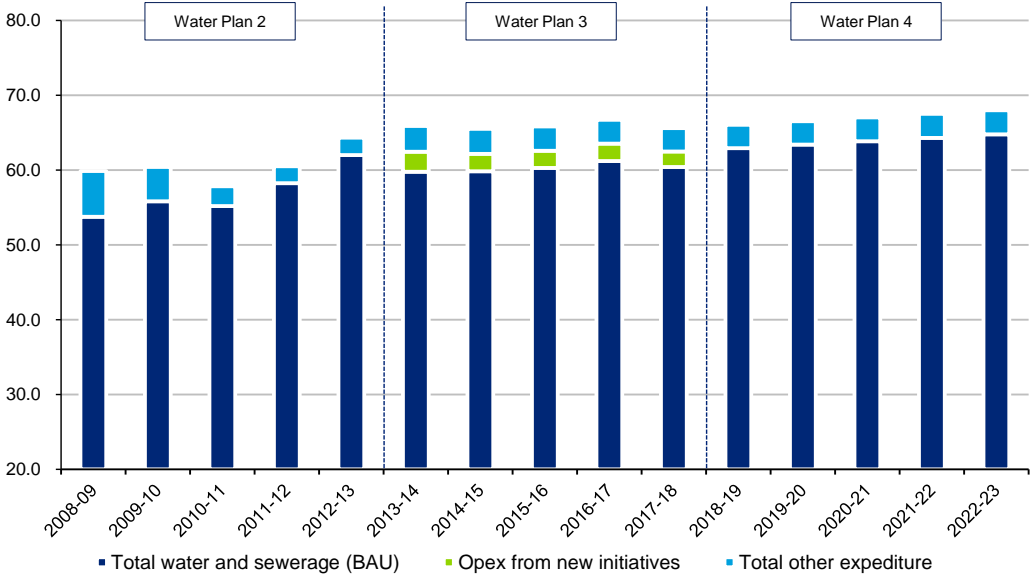
Coliban Water provides services to over 140,000 customers in central and northern Victoria, covering an area of 16,550 km². Key towns served include Bendigo, Castlemaine, Kyneton, Echuca, and Cohuna.

Note that throughout this report, unless indicated otherwise, references to Coliban Water’s ‘forecast’ or ‘proposal’ refer to its original September Water Plan proposal and not any subsequent proposal or adjustments that have been received.

3.1 Operating expenditure

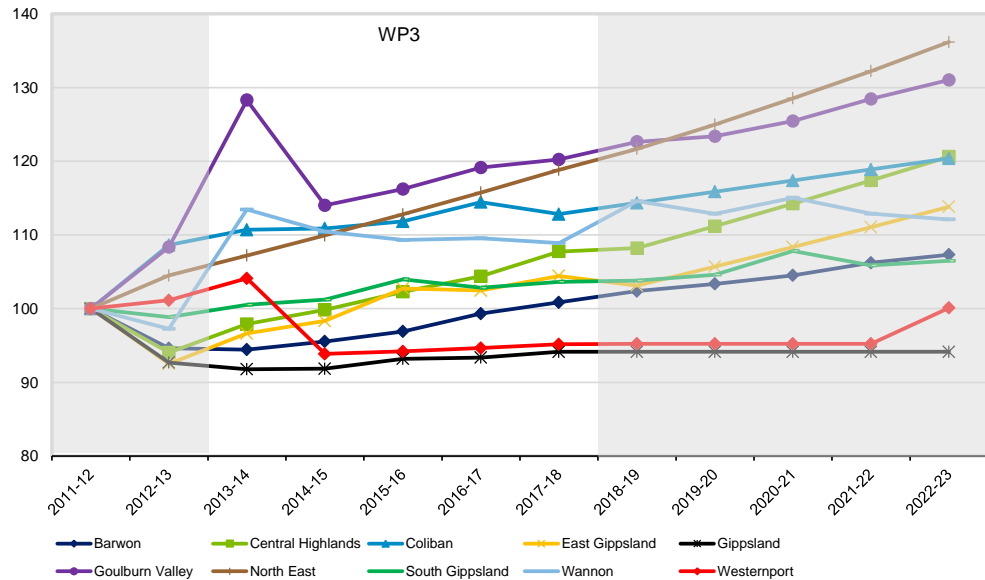
Figure 3-1 shows Coliban Water’s operating expenditure over the WP2, WP3 and WP4 periods. Coliban Water’s operating costs (excluding licence fees, bulk water charges and the environmental contribution) are forecast to be a total of \$337.5m over WP3, which is an increase of 8.2% from WP2 (total of \$311.9m).

Figure 3-1 Coliban Water actual and forecast operating expenditure (\$m, 01/01/2013)



Coliban Water’s proposed increase in operating expenditure relative to the other businesses is shown in the chart below.

Figure 3-2 Operating expenditure (excluding bulk water charges, licence fees and environmental contribution) for 2011-12, 2012-13, WP3 and WP4 periods (Index 2011-12 = 100)



Note: Coliban Water figures exclude rural operating expenditure and the fixed component of BOOT expenditure.

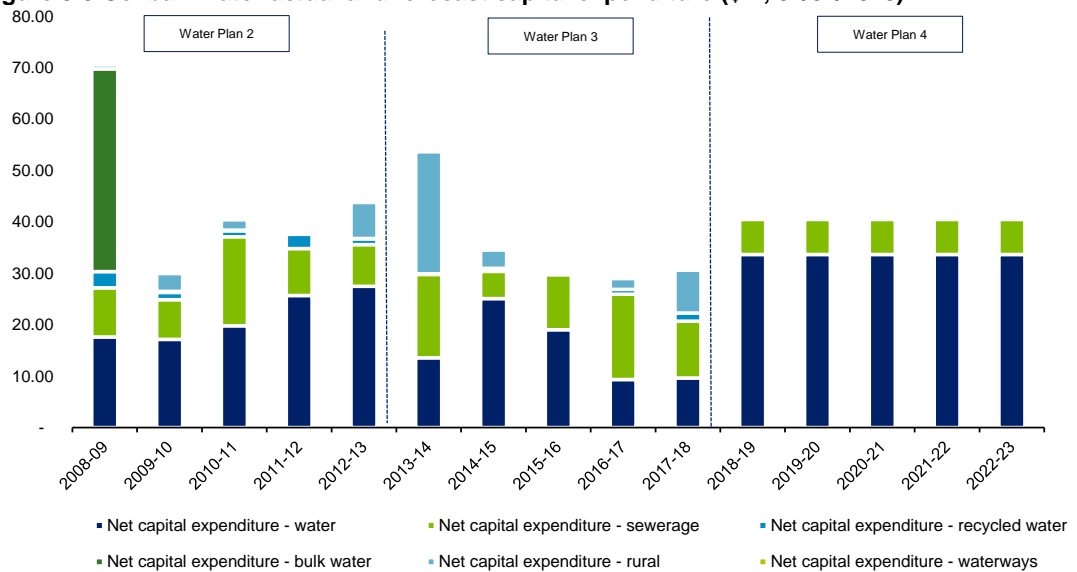
Coliban Water has identified the key drivers of increases in operating expenditure across WP3 as being:

- New initiatives including a biosolids reuse strategy, water distribution quality program and financial hardship policy
- Increased labour (and related) costs driven by increases provided for in Coliban Water's EBA and associated on-costs
- A requirement to make additional contributions to its defined benefits superannuation scheme
- Increases in electricity costs due to the carbon tax.

3.2 Capital expenditure

The figure below shows Coliban Water's actual and forecast water and sewerage capital expenditure.

Figure 3-3 Coliban Water actual and forecast capital expenditure (\$m, 01/01/2013)



Total capital expenditure for WP3 is forecast to be \$178.00m which represents a 20% decrease on WP2 actual expenditure of \$222.79m. However, \$39.33m of Coliban Water's WP2 capital expenditure related to purchases of high reliability water shares – meaning Coliban Water's expenditure on actual capital project delivery in WP2 was \$183.38m. If this is used as the basis for comparison, then WP3 capital expenditure represents a reduction of \$5.38m or 2.9%.

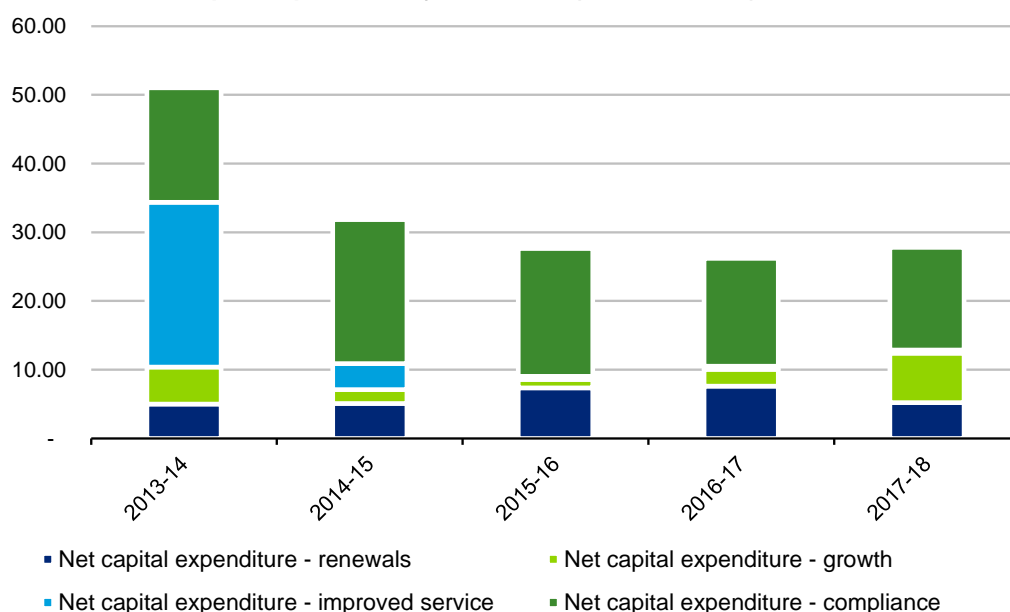
The main components of WP3 capital expenditure include:

- \$27.1m on the Harcourt Rural System Modernisation Project
- \$19.4m on water treatment plan upgrades
- \$10.8m for water and sewer main renewals.

Coliban Water's capital planning beyond the WP3 period appears to be relatively high-level, with the majority of capital expenditure allocated for each year under water.

The key drivers of capital expenditure for WP3 are shown in Figure 3-4 and include:

- Compliance (\$86.82m or 49% of total capital expenditure)
- Renewals (\$30.22m or 17% of total capital expenditure)
- Improved service (\$68.4m or 16% of total capital expenditure).

Figure 3-4 Forecast capital expenditure by cost driver (\$m, 01/01/2013)

3.3 Key drivers and obligations

3.3.1 Government obligations

Coliban Water's Water Plan identifies the Government obligations as driving additional operating and capital expenditure requirements for the WP3 period:

- The introduction of the carbon tax as at 1 July 2012
- Anticipated changes in the *Safe Drinking Water Regulations*.

A number of projects are targeted towards meeting existing EPA licence conditions and ensure compliance with the *Occupational Health and Safety Act 2004 (Vic)*.

3.3.2 Service standards

Coliban Water has proposed a number of changes to its service standards for the WP3 period, including:

- Strengthening the target for unplanned water supply interruptions per 100km
- Relaxing the target for sewer blockages per 100km
- Minor changes to the response times for water and sewer interruptions.

Coliban Water's proposed changes to service standards are generally in line with past performance.

3.3.3 Demand

Coliban Water has forecast demand for water to increase at around 1% per annum on average over the WP3 period. Coliban Water's key assumptions include:

- Usage per customer (residential) to decrease slightly over the WP3 period, from 164kL in 2013-14 to 162kL per customer

- Customer growth of 1.7% per annum for residential water and wastewater customers and 1.0% per annum for non-residential water and wastewater customers for the WP3 period.

Coliban Water has forecast rural water demand to increase and then remain flat at 6GL per annum, reflecting 100% allocations.

4 Assessment of operating expenditure

This chapter sets out our assessment of operating expenditure including:

- An assessment of the 2011-12 baseline expenditure (which forms the basis of the growth adjusted BAU for WP3)
- Assessment of individual expenditure items. Our approach to assessing many of the expenditure items, including labour, electricity and superannuation guarantee costs, is set out in our *Overview* document
- Assessment of business specific expenditure items that are increasing and are above BAU (i.e. new initiatives or large increases in BAU items).

4.1 Business As Usual (BAU) expenditure

As outlined in the *Overview* document our approach to assessing BAU expenditure is to define efficient expenditure in the base year of 2011-12. Therefore we have removed material once-off items that were incurred in 2011-12, as well as adding back any material items that are normally incurred but were not in 2011-12. In addition, we have specifically removed any once-off and cyclical costs related to the drought in 2011-12, consistent with the ESC Guidance paper.

Coliban Water's operating expenditure in 2011-12 was significantly higher than in previous years. Table 4-1 shows operating expenditure by service for the WP2 period.

Table 4-1 Coliban Water BAU operating expenditure for WP2 period (\$m, 01/01/2013)

Operating expenditure item	WP2 Actual				Forecast 2012-13
	2008-09	2009-10	2010-11	2011-12	
Water	25.59	27.05	29.37	30.86	33.20
Sewerage	19.61	23.71	22.08	23.93	25.08
Recycled Water	1.37	1.53	1.51	1.47	1.62
Rural Water	7.19	3.52	2.21	1.97	2.09
Total BAU	53.76	55.81	55.17	58.23	61.99

Notes: excludes external bulk and temporary water purchases, licence fees and environmental contribution

In its Water Plan, Coliban Water identified selected operating expenditure items in particular as being subject to fluctuations, as set out in the table below.

Table 4-2 Coliban Water selected operating expenditure subject to fluctuations during the WP2 period (\$m, 01/01/2013)

Operating expenditure item	WP2 Actual				Forecast 2012-13
	2008-09	2009-10	2010-11	2011-12	
Electricity	3.8	3.3	1.2	2.8	3.2
Labour	6.3	7.8	8.9	11.6	11.4
Contractors	23.9	26.6	32.7	30.5	31.0
IT	0.0	0.0	0.0	1.7	1.8

Source: Coliban Water (2012), *Water Plan 2013-14 to 2017-18*

As shown in the table above, labour, electricity and contractor expenditure were significantly higher in 2011-12 than in previous years (noting that in contractor expenditure peaked in 2010-11, after increasing by \$6.1m or 22.9% from 2009-10).

Coliban Water has advised comparison of expenditure items pre and post 2011-12 may be invalid due to the adoption of a new financial system in mid-2011. Aside from this, Coliban

Water has advised that 2011-12 was a relatively normal year with regard to operating expenditure, and provided the following explanation for increases in selected items:

- With respect to IT expenditure, which has historically been outsourced, all data prior to 2011-12 is unreliable due to the previous financial system and nature of outsourcing arrangements
- Increases in labour costs are primarily due to the creation of in-house capability to reduce reliance on consultants and the increase in labour costs has been off-set by the reduction in expenditure on consultants.

Coliban Water provide information on additional once off costs (and savings) in 2011-12, related to floods expenditure, insurance payouts and biosolids removal and desludging, the net effect of which would be a \$0.472 increase in 2011-12 BAU expenditure.

However, given the significant increases in labour and contractor costs over the WP2 period (and potentially also IT), and lack of comparability between expenditure pre and post 2011, we are unable to make with confidence any adjustments to Coliban Water's 2011-12 expenditure for the purpose of establishing a growth and productivity adjusted BAU target, as shown in Table 4-3 below.

Table 4-3 Coliban Water 2011-12 BAU and growth adjusted forecast (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast					Total WP3
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	
Proposed BAU	58.230						
Deloitte adjustments to BAU	0.000						
BAU target	58.230	59.004	59.395	59.789	60.185	60.584	298.957

The ESC's Guidance Paper notes that the ESC will require all businesses to achieve a minimum of 1% per year productivity improvement on customer growth adjusted business as usual (BAU) operating expenditure for the WP3 period.

In the remainder of this chapter we assesses the individual items of expenditure that Coliban Water has identified as increasing over the WP3 period. Following our assessment of each individual item, we compare our total recommended operating expenditure (less recommended expenditure on new or changed service outcomes, or new obligations imposed by Government or technical regulators) with the growth and productivity adjusted BAU target set out in Table 4-3 to obtain a view on whether or not Coliban Water is meeting the ESC's productivity hurdle.

This approach ensures that our assessment of Coliban Water's performance against the productivity hurdle takes into account the extent to which expenditure above the BAU target is the result of new or changed service outcomes, or new obligations imposed by Government or technical regulators (i.e. is either driven by required service outcomes from customers or largely outside the control of the business).

4.2 Individual expenditure items

Individual expenditure items have been assessed for prudence and efficiency using the approach set out in the Overview document. We have reported these items on a 'by exception' basis, i.e. we have generally only provided commentary for those items where we have recommended adjustments.

In this section, and where the context requires, references to Coliban Water's 'original' forecasts reflect forecasts contained in its Water Plan of September 2012. References to Coliban Water's 'revised' forecasts reflect adjustments proposed by Coliban Water in response to our Draft Report. In several cases Coliban Water revised their forecasts, both in response to our recommendations but also to update or correct errors in their original submission.

4.2.1 Labour costs

Coliban Water's proposal

Coliban Water's existing EBA allows for a 3% wage rise in nominal terms on 1 July 2013, as well as an additional 1% productivity payment if five of seven KPIs are met. The current EBA expires on 30 June 2014. Coliban Water has advised that post EBA, it has assumed 3% nominal increases in wages each year, with some allowance for increases in salary ranges.

Coliban Water's original labour forecasts for its Water Plan submission are set out in the table below.

Table 4-4 Coliban Water (original) proposed labour expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed labour expenditure	10.322	11.600	11.800	12.000	12.100	12.200
Number of FTEs	133.0	128.1	126.1	126.1	126.1	126.1
Cost per FTE (\$'000)	77.6	90.6	93.6	95.2	96.0	96.8

Subsequent to our Draft Report, Coliban Water advised that its original proposal provided an incorrect representation of FTEs in 2011-12, as the figures included both operational FTEs and capital works FTEs. Furthermore, the forecasts for WP3 also contained a combination of operational and capital FTEs and costs.

Coliban Water provided a revised labour cost forecast, incorporating only operational costs and FTEs, as set out in the table below.

Table 4-5 Coliban Water (revised) proposed labour expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed labour expenditure	10.323	10.455	10.606	10.821	10.690	10.704
Number of FTEs	103.9	105.0	104.9	105.9	105.9	105.9
Cost per FTE (\$'000)	99.4	99.6	101.1	102.2	100.9	101.1

Coliban Water provided the following justification for the total increase in operational FTEs (2.04) of the WP3 period:

- 0.90 FTE – Dams engineer. Required to ensure continued compliance with ANCOLD guidelines, and is a cheaper solution than upgrading Malmsbury Dam wall
- 0.75 FTE – Rotational engineer. Additional engineering support is required in order to ensure the business utilises additional operational control that will be afforded to it under the new outsource contract. This is necessary to minimise future “non-routine” works
- 0.42 FTE – PMO Administrator. In order to ensure increased robustness of capital planning methodologies, introduce more transparent project management and align internal expenditure decision making to DTF guidelines, additional staff resources are required to drive internal compliance.

Analysis and recommended adjustments

Our approach to reviewing labour forecasts is set out in the *Overview* document and involves:

- Applying wage increases set out in existing EBAs to apply until the EBA expires
- Once a new EBA applies, applying a real growth in wages per FTE of 0%
- Reviewing FTE numbers on a case-by case basis.

In applying the approach above to Coliban Water's proposed labour expenditure, we have undertaken the following steps:

- Applied a 3% per annum nominal increase in wages for 2012-13 and 2013-14, as described by Coliban Water for its existing EBA (this approach assumes that the additional expenditure for the productivity related additional nominal wage increase of 1% is offset by productivity improvements)
- Applied a 2.75% per annum nominal increase (i.e. 0% real increase) in wages from July 2014 for the rest of the WP3 period.

We make the following observations with respect to the additional FTEs proposed by Coliban Water:

- While we have reservations about Coliban Water's strategy for complying with ANCOLD guidelines with respect to Malmsbury Dam (being to reduce the capacity of the dam, rather than address structural issues), it is not clear that additional expenditure is required to ensure compliance under this strategy
- With respect to the rotational engineering role, we note that Coliban Water has added 11.7 FTEs in 2011-12 to assist with increased operational control (on top of large increases over the early years of WP2), and non-routine works expenditure is increasing significantly over the WP3 period
- With respect to the PMO Administrator, while we have concerns about Coliban Water's capital planning and prioritisation processes (see section 5.1.1), we are not aware of any instances of non-compliance with DTF guidelines.

Therefore we do not consider that Coliban Water has provided sufficient justification in terms of new obligations or customer driven service outcomes to justify further increases in FTEs the WP3 period.

The adjustments outlined above result in the recommended labour expenditure set out in Table 4-6. Note that while Coliban Water's revised labour cost forecast differs from the figures presented in its Water Plan, its overall operating expenditure proposal has not changed from its original submission. Therefore, our recommendations are presented relative to Coliban Water's revised labour cost forecast.

Table 4-6 Coliban Water labour expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed labour expenditure	10.323	10.455	10.606	10.821	10.690	10.704
Recommended adjustments		0.040	-0.111	-0.325	-0.195	-0.208
Revised labour expenditure		10.495	10.495	10.495	10.495	10.495

4.2.2 Electricity costs

In its Water Plan proposal Coliban Water used the WSAA report as the basis for forecasting its electricity costs. Its forecast expenditure, as set out on page 45 of its Water Plan, was as follows:

Table 4-7 Water Plan electricity forecasts (\$m, 01/01/2013)

	Water Plan forecast					
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Total	3.200	2.900	2.900	2.900	2.900	2.900
% Change	14%	-9%	0%	0%	0%	0%

In response to our Draft Report Coliban Water provided both updated 'original' forecasts, which corrected the figures proposed in the Water Plan (amended slightly downward), and

an updated electricity model which reflected the key elements of our Draft report, including the Procurement Australia quote. This model also identified costs associated with a number of sites which had been inadvertently omitted from Coliban Water's original electricity forecast.

Unlike Central Highlands Water, Coliban Water's costs associated with pumping from the Superpipe are relatively small and hence the assumption regarding volumes pumped is not nearly as critical to the forecasts.

We have used Coliban Water's model to reforecast its electricity costs, which are now higher than the original submission.

Table 4-8 Electricity costs (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed electricity costs	2.721	2.817	2.824	2.836	2.848	2.857
Recommended adjustments		0.994	0.996	1.077	1.132	1.191
Revised electricity costs		3.811	3.820	3.913	3.980	4.048

4.2.3 Defined benefits superannuation costs

Coliban Water's proposal

Coliban Water has identified a liability of \$1.258m (including contribution tax) as a result of its requirement to make an additional defined benefit superannuation contribution to Vision Super. Coliban Water advised that this liability was accrued in 2011-12 and it has proposed to pay the amount over five years commencing 1 July 2013.

Analysis and recommended adjustments

Background information regarding the requirement to make additional superannuation contributions is set out in our *Overview* document. As outlined in the *Overview* we have allowed businesses to include an annuity payment in their operating forecasts to meet this obligation, calculated as the principal and interest payment on a 15 year loan at 5.75%.

Therefore, we recommend an adjustment to Coliban Water's expenditure forecasts for WP3 to reflect payments over 15 years at 5.75%, as set out in the table below.

Table 4-9 Coliban Water defined benefits superannuation expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed superannuation payment	0.000	0.300	0.292	0.285	0.277	0.269
Recommended adjustments		-0.176	-0.172	-0.167	-0.163	-0.158
Revised superannuation payment		0.124	0.121	0.117	0.114	0.111

4.2.4 Biosolids reuse strategy

In its Water Plan, Coliban Water proposed a biosolids reuse strategy as a new initiative for the WP3 period, amounting to \$5.5m in total operating expenditure over five years.

In our Draft Report, we noted that Coliban Water had not provided sufficient information on the biosolids reuse strategy that linked the proposed expenditure to verified service outcomes or supported the efficiency of the proposed spend, and therefore recommended its removal from Coliban Water's forecast.

In response to our Draft Report, Coliban Water provided a Biosolids Reuse Strategy and a revised expenditure proposal, in which it has proposed to capitalise \$2.550m of its originally proposed operating expenditure.

Table 4-10 Coliban Water proposed biosolids operating and capital expenditure (\$m, 01/01/2013)

	Actual	Water Plan forecast					Total
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	WP3
Original biosolids operating expenditure proposal	0.050	1.374	1.087	1.083	1.025	0.958	5.527
Biosolids capital expenditure	0.000	1.200	0.600	0.000	0.300	0.450	2.550
Revised biosolids operating expenditure proposal	0.050	0.174	0.487	1.083	0.725	0.508	2.977

Given that Coliban Water's 2011-BAU expenditure already includes \$0.50m of biosolids expenditure, we have allowed for the required additional expenditure above this amount to provide for the revised proposal. Our recommended adjustments are set out in the table below.

Table 4-11 Coliban Water biosolids reuse strategy expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed biosolids expenditure	0.050	1.374	1.087	1.083	1.025	0.958
Recommended adjustments		-1.250	-0.650	-0.050	-0.350	-0.500
Revised biosolids expenditure		0.124	0.437	1.033	0.675	0.458

4.2.5 Water distribution quality

Coliban Water proposed a water distribution quality program as a new initiative for the WP3 period, and proposed to spend \$4.4m in total over five years. In its Water Plan, Coliban Water noted that it has had a substantial increase in *E.coli* detections in its drinking water supplies and proposed to conduct a water mains cleaning program to improve water quality.

In our Draft Report, we noted that Coliban Water had not provided sufficient information on the water distribution quality program that linked the proposed expenditure to verified service outcomes or supported the efficiency of the proposed spend, and therefore recommended its removal from Coliban Water's forecast.

In response to our Draft Report, Coliban Water provide Water Reticulation Quality Management Plans (July 2012) for a number of towns demonstrating the risk rankings and costs of the project on a per meter basis. In its revised proposal, Coliban also increased its total proposed expenditure on the program to \$5m over the WP3 period, spread evenly over each year.

In reviewing Coliban Water's water distribution quality strategies and proposed costs, we note the following:

- Coliban Water has proposed to undertake air-scouring and swabbing of its entire network over a ten year period, with the majority of expenditure occurring over the next five years
- Water quality issues among the 13 locations/towns identified in the program are variable, with some towns that have been allocated as relatively high priority (e.g. Kyneton and Bendigo, priority four and five, respectively) not having recorded any non-compliances with the Safe Drinking Water Regulations in the last three years
- Coliban Water has relied on unit rates from Yarra Valley Water, with air-scouring (cost \$1.68/m) applied to mains up to and including 250mm, and swabbing (\$29.80/m) for mains of 300mm and above. However, the project summary suggests that swabbing

costs were applied only to mains greater than 300mm. Our understanding is that air-scouring is effective for mains up to 300mm.

Based on the above, for the WP3 period, we have recommended allowing for expenditure only for the top three priority towns, with the expenditure amount recalculated to reflect the ability to air-scour mains of up to and including 300mm, spread evenly over the period.

Table 4-12 Coliban Water water distribution quality program expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed water quality expenditure	0.000	0.947	0.897	0.850	0.966	0.762
Recommended adjustments		-0.654	-0.603	-0.556	-0.672	-0.469
Revised water quality expenditure		0.293	0.293	0.293	0.293	0.293

4.2.6 BOOT schemes

Coliban Water's Water Plan forecast \$9.951m per annum for WP3 for the services provided under its two Build Own Operate (BOOT) schemes. Subsequently, Coliban Water advised that the figures provided in the Water Plan contained an error and provided revised figures, which amount to an additional \$0.129m in operating expenditure over the WP3 period.

We have reviewed the revised figures provided by Coliban Water regarding its BOOT scheme payments and agree that the figures in the Water Plan are lower than those in the BOOT agreements and therefore appear to be in error. Accordingly, we recommend an amendment to Coliban Water's operating expenditure for the error in the Water Plan for BOOT payments, as set out in the table below.

Table 4-13 Coliban Water BOOT Scheme expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed BOOT expenditure	10.109	9.685	9.425	9.173	8.928	8.689
Recommended adjustments		0.027	0.026	0.026	0.025	0.024
Revised BOOT expenditure		9.712	9.452	9.199	8.953	8.713

4.2.7 Contracted services expenditure

Coliban Water has historically outsourced a significant proportion of its operations, encompassing a range of operations and maintenance, IT and customer service functions.

Coliban Water is currently undertaking an internal review (Business Model Review, BMR) to assess future contracting arrangements. The BMR process includes a competitive tendering process for a number of service contracts that are up for renewal, and will be finalised towards the end of 2012-13. Given the commercial sensitivity of the current tendering process, Coliban Water raised probity concerns in relation to providing detailed information on its current and expected costs for outsourced services, and the BMR process more generally, and did not provide any information on this area of expenditure for our Draft Report.

Following our draft report, Coliban Water provided a breakdown of contracted services operating expenditure, with detailed figures for and repatriated services expenditure forecasts.

- Business Model Review (contract services)
- Best Value Assessments (repatriated services)

- Other contracting (including contractor and consultant costs incurred by businesses that will not for part of the above contract and repatriated services, non-routine works and BOOT operating costs for Bendigo and Echuca)
- BOOT scheme expenditure (as outlined in section 4.2.6, above).

The following table sets out total operating expenditure for these items, excluding fixed costs associated with BOOT contracts, as this expenditure is more accurately considered part of historical capital expenditure (as advised by Coliban Water).

Table 4-14 Coliban Water proposed contracted and repatriated services operating expenditure (\$m, 01/01/2013)

Contracted services expenditure	Actual	Forecast	Water Plan forecast				
	2011-12	2013-13	2013-14	2014-15	2015-16	2016-17	2017-18
Total	31.652	33.477	32.701	32.820	33.431	34.204	34.080

Coliban Water has advised that it expects to pass through the full costs of its retendered contracts once this process has been finalised. In our view, such a pass-through of costs should only occur where it can clearly be demonstrated that:

- The tendering and procurement process has been competitive and as such the costs of the contracts reflect current market rates
- The approach to outsourcing services represents an optimal approach to providing services to customers that meet agreed standards at the most efficient cost.

Coliban Water has not provided sufficient information on the current BMR process to allow us to determine whether or not these conditions have been, or are likely to be, met.

In the absence of detailed information from Coliban Water supporting the prudence and efficiency of the proposed expenditure, we recommend a downward adjustment to its proposed operating expenditure for contracted services to bring it in line with a growth and productivity adjustment benchmark based on actual 2011-12 expenditure. This adjustment is set out in the table below.

Table 4-15 Coliban Water contracted services expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed contracted services expenditure	31.652	32.701	32.820	33.431	34.204	34.080
Recommended adjustments		-0.260	-0.138	-0.507	-1.036	-0.668
Revised contracted services expenditure		32.442	32.682	32.923	33.167	33.413

4.3 Summary of recommended adjustments

Recommended operating expenditure

Table 4-16 provides a summary of our recommended adjustments to Coliban Water's operating expenditure proposal for WP3.

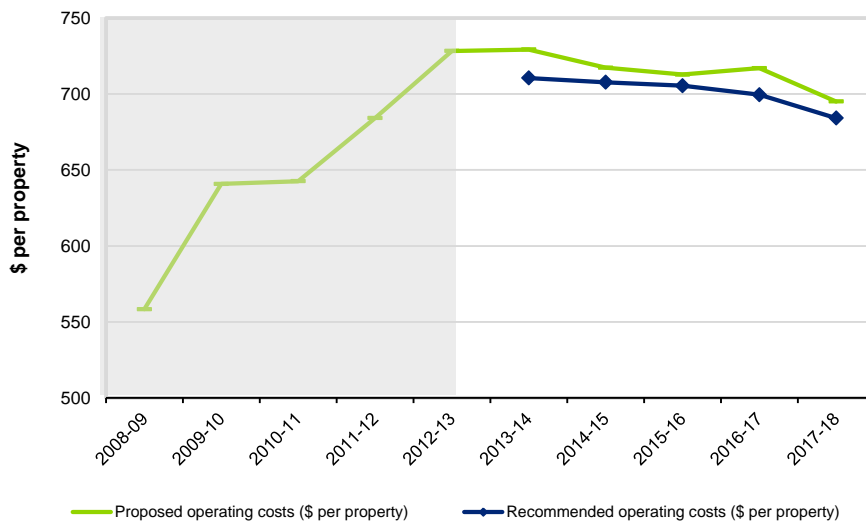
Table 4-16 Coliban Water forecast controllable operating expenditure and recommended adjustments (\$m, 01/01/2013)

Operating expenditure item	Water Plan forecast					Total
	2013-14	2014-15	2015-16	2016-17	2017-18	WP3
Proposed controllable operating expenditure (\$m)	62.452	62.166	62.567	63.527	62.479	313.192
Recommended adjustments						
Labour	0.040	-0.111	-0.325	-0.195	-0.208	-0.799

Operating expenditure item	Water Plan forecast					Total WP3
	2013-14	2014-15	2015-16	2016-17	2017-18	
Electricity	0.994	0.996	1.077	1.132	1.191	5.390
Defined benefits	-0.176	-0.172	-0.167	-0.163	-0.158	-0.836
Biosolids reuse	-1.250	-0.650	-0.050	-0.350	-0.500	-2.800
Water quality	-0.654	-0.603	-0.556	-0.672	-0.469	-2.954
Contracted services	-0.260	-0.138	-0.507	-1.036	-0.668	-2.610
Total recommended adjustments	-1.306	-0.678	-0.529	-1.284	-0.812	-4.609
Recommended operating expenditure	61.146	61.488	62.039	62.243	61.667	308.583

Figure 4-1 compares our recommended operating expenditure for Coliban Water (on a per connection basis) with Coliban Water’s proposal.

Figure 4-1 Proposed and recommended operating expenditure (\$, 01/01/2013)



Note: Excludes rural operating expenditure (and customer numbers) and the fixed component of BOOT expenditure.

Performance against productivity hurdle

As noted above, the ESC’s Guidance Paper notes that the ESC will require all businesses to achieve a minimum of 1% per year productivity improvement on customer growth adjusted business as usual (BAU) operating expenditure for the WP3 period (the productivity hurdle).

We have interpreted BAU operating expenditure as being all operating expenditure other than expenditure that is the result of new or changed service outcomes, or new obligations imposed by Government or technical regulators.

In the case of Coliban Water, we have assessed the following increases in operating expenditure above the 2011-12 baseline as meeting this definition:

- Electricity
- Defined benefits superannuation contributions
- Introduction of the biosolids program
- Introduction of a mains cleaning program for water distribution quality
- Hardship scheme.

The following table summarises the expenditure above the 2011-12 BAU for these items that we have assessed as meeting the ESC's requirements for prudence and efficiency.

Table 4-17 Prudent and efficient new initiatives and obligations expenditure above the 2011-12 baseline (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Electricity		1.026	1.017	1.092	1.140	1.189	5.464
Defined benefits		0.124	0.121	0.117	0.114	0.111	0.588
Biosolids		0.124	0.437	1.033	0.675	0.458	2.727
Water distribution quality		0.293	0.293	0.293	0.293	0.293	1.467
Hardship scheme		0.070	0.070	0.070	0.070	0.070	0.350
Total		1.638	1.938	2.606	2.292	2.122	10.596

Note: Electricity includes carbon tax impacts.

Table 4-18 below calculates a 'recommended BAU expenditure' using our total recommended operating expenditure less recommended expenditure on new or changed service outcomes, or new obligations imposed by Government or technical regulators above the BAU target. This amount is then compared with the growth and productivity adjusted BAU target (calculated in Table 4-3) to obtain a view on whether or not Coliban Water's operating expenditure, following our adjustments, meets the ESC's productivity hurdle.

Table 4-18 Productivity hurdle assessment (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Recommended operating expenditure		61.097	61.413	61.938	62.116	61.514	308.077
Less prudent and efficient new initiatives expenditure		1.638	1.938	2.606	2.292	2.122	10.596
Recommended BAU expenditure		59.459	59.475	59.332	59.824	59.392	297.481
Adjusted BAU target	58.230	59.004	59.395	59.789	60.185	60.584	298.957
Amount above BAU target		0.454	0.080	-0.457	-0.361	-1.192	-1.476

As shown in the table, following our recommended adjustments, and accounting for expenditure above the BAU target that is the result of new or changed service outcomes, or new obligations imposed by Government or technical regulators, Coliban Water meets the ESC's productivity hurdle.

5 Capital expenditure

This chapter of the report sets out our assessment of Coliban Water's capital expenditure proposal for WP3 including:

- An assessment of generic issues relevant to the overall prudence, efficiency and deliverability of the proposed capital expenditure program
- A summary of major projects with a significant impact on the capital expenditure proposal (top ten by total expenditure) and assessment of each project
- A summary of our recommendations.

Our approach to assessing generic capital expenditure issues and project specific issues that are common to a number of businesses is set out in our *Overview* document.

5.1 Generic issues

In undertaking our review of Coliban Water's capital expenditure forecast, we have focussed on the major projects that comprise a significant proportion of the total capital expenditure forecast.

In doing so, we have also undertaken a high-level assessment of generic issues that may have an impact on the prudence, efficiency and deliverability of multiple projects or Coliban Water's capital expenditure program as whole.

5.1.1 Capital expenditure planning

Capital project planning and prioritisation

Coliban Water has recently taken action to improve its internal processes for determining its overall capital expenditure program. A new portfolio investment approach has been introduced and is designed to deliver prudent and efficient capital expenditure decisions. It will also attempt to find an appropriate balance between operational and capital expenditure. A capital prioritisation approach is the first step in the implementation of the Project/Portfolio Management Office and the Investment Review Committee. Under the prioritisation framework introduced by Coliban Water, projects are prioritised based on their allocated ratings against 'risk' and 'compliance' measures.

Coliban Water has advised that many projects were unable to be included in the WP3 expenditure proposal due to financial constraints, not because they are inefficient or non-prudent expenditure. Projects may not be included for completion in WP3 where risks can be managed without expenditure. For example, Coliban Water has elected not to allocate expenditure to the upgrading the Malmsbury Dam, which was formerly not meeting the Australian National Committee on Large Dams (ANCOLD) guidelines, as it considers that reducing the operating capacity by a third mitigates this risk.

We have a number of concerns about the development of Coliban Water's capital expenditure proposal and the process for prioritising capital projects based on our review of the information provided by Coliban Water. In particular:

- It is not clear how the 'constraint' or cap placed on capital expenditure for the WP3 period has been determined, or whether the trade-off between service levels and prices (and Coliban Water's decision on the appropriate setting for this trade-off) has been adequately communicated to customers. Therefore, while projects within the capital program have been prioritised by way of an assessment of 'inherent' and 'compliance' risks, the overall capital program itself appears to be driven by a pre-determined figure,

rather than being based on the expenditure requirements to deliver agreed service outcomes to customers

- The approach to prioritising projects within the capital constraint lacks transparency. In the first instance, it is not clear how the specific scores or ratings for each measure ('risk' and 'compliance') have been determined. Furthermore, it appears as though 'compliance' effectively over-rides 'risk' under the framework. It is not clear why 'compliance' (which presumably concerns compliance risk) is required to be assessed separately from 'risk', or why the 'compliance' measure has apparently been given greater weight than the 'risk' measure. In our view, all risks should be considered under a consistent framework
- The results of the prioritisation for WP3 appear to suggest that the risk framework has been inconsistently applied across the potential projects identified for WP3. For example, we note that none of the 11 projects rated as "Extreme" risk under the framework were included in the capital expenditure program for WP3.

Asset management

Coliban Water has implemented a number of improvements to its asset management processes following the implementation of a new Asset Management System in the WP2 period, particularly concerning its renewals decision models.

Coliban Water has also increased the amount of asset information contained within its Asset Management System and has advised that intends to utilise this database for continuing studies on the linkages between priority replacements and improved customer service performance.

5.1.2 Cost estimation and escalation

The final Water Plan submission states that Coliban Water's expenditure estimate for each project was conducted as a P50 estimate.¹ However, in reviewing the business cases and supporting documentation provided by Coliban Water for its major projects we could not find any evidence of P50 cost estimates being undertaken.

For most projects, the approach used by Coliban Water has been to base cost estimates on construction rates tendered for recent projects of similar nature and apply a contingency allowance on the total estimate to cover any unforeseen works which may arise during the remaining phases of the project. This is a traditional industry approach for cost estimation.

The Water Plan also notes that Coliban Water has started to explore probabilistic cost estimation using P5 or P95 analysis and will seek to establish a new estimation regime as the next regulatory period progresses.

Coliban Water has applied capital cost escalation factors only where cost estimates were developed prior to 2012-13.

5.1.3 Deliverability of the capital expenditure program

Coliban Water has proposed to invest \$178.00m during the WP3 period, which is less than the total actual capital expenditure in the WP2 period of \$222.79m. However, we note that a significant portion Coliban Water's capital expenditure in the WP2 period was related to purchases of high reliability water shares (\$39.33m) making Coliban Water's expenditure on actual capital project delivery \$183.38m. The expenditure profile is above average (\$53.7m) in the first year and then relatively smooth for the remainder of the WP3 period. The proposed size of the capital program appears to be within the scope of that which has been previously delivered.

¹ Coliban Water (2012), *Water Plan 2013-2018*, September, p.52

Coliban Water's past performance in capital project delivery has been reviewed as part of the last three ESC performance reports in 2009-10, 2010-11 and 2011-12. Four of four major projects due for delivery were delayed during this time period. We note that project delays in one case were outside Coliban Water's control, with treatment plant redesign work required following the loss of a major non-residential customer. Of the four delayed projects, one project is now complete and other three are due to be completed in 2012-13.

The reprioritisation of capital expenditure in WP2 also resulted in a number of smaller projects and two larger projects being postponed and replaced with more critical investments. This was primarily driven by the drought (through to 2009-10) and flood events (2010-11).

Past delivery performance has been taken into account when reviewing the staging of major projects in Coliban Water's capital portfolio. The staging of the WP3 capital program is generally aligned with the maturity of each project and the estimated timelines identified in the options analysis and design reports.

5.2 Major projects

Table 5-1 provides an overview of the top ten projects (by capital expenditure), showing the primary driver and forecast expenditure over the current and next regulatory period.

Table 5-1 Coliban Water top ten projects and forecast expenditure (\$m, 01/01/2013)

Capital expenditure item	Primary Driver	Water Plan forecast expenditure					Total	Proportion of total expenditure
		2013-14	2014-15	2015-16	2016-17	2017-18		
Harcourt Rural Modernisation Project	Service Improvement	23.64	3.42	0.00	0.00	0.00	27.06	15.2%
Echuca & Cohuna Water Treatment Plant Upgrades	Compliance	0.00	7.80	5.41	0.00	0.00	13.21	7.4%
Cohuna Water Reclamation Plant Refurbishment	Compliance	0.00	0.00	0.00	5.44	5.44	10.89	6.1%
Rochester Wastewater Connection to Echuca	Compliance	7.69	0.00	0.00	0.00	0.00	7.69	4.3%
Bridgewater & Laanecoorie Water Treatment Plant Upgrades	Compliance	0.00	3.00	2.00	0.60	0.60	6.20	3.5%
Water Main Renewals Program	Asset Renewal	1.20	1.20	1.20	1.20	1.20	6.00	3.4%
Heathcote Backlog Sewerage	Compliance	0.00	0.00	0.00	4.00	1.60	5.60	3.1%
Occupational, Health and Safety Program	Compliance	1.10	1.20	1.20	1.00	0.90	5.40	3.0%
Sewer Main Renewals Program	Asset Renewal	0.95	0.95	0.95	0.95	0.95	4.75	2.7%
Coliban Main Channel	Service Improvement	0.00	0.15	2.07	2.27	0.00	4.50	2.5%
Subtotal - Top 10 Projects		34.57	17.72	12.83	15.47	10.69	91.28	51.3%
Other projects		19.07	16.77	17.49	13.48	19.90	86.71	48.7%
Total		53.65	34.49	30.32	28.95	30.59	178.00	
Proportion of total expenditure		30%	19%	17%	16%	17%		

5.3 Harcourt Rural Modernisation Project

5.3.1 Business proposal

This project relates to the proposed construction of the Harcourt Rural Modernisation Project, a carryover project from the WP2 period. \$27.1m in capital expenditure is proposed for the WP3 period, of a total project cost of \$39.7m.

The Harcourt Rural Modernisation Project has been repackaged since WP2 and is now made up of two parts:

- Water Supply Reticulation Network – the original proposal to construct a piped water supply distribution network to replace the existing open channel system
- Backbone System – the construction of a trunk water main, two water pump stations and water pressure balancing tank sized to facilitate the completion of the future Bendigo – Castlemaine link project which was deferred in WP2 and may be required in the future to increase the reliability of supply in Harcourt, Castlemaine and Kyneton.

The Backbone System assets are interconnected with the Harcourt Water Supply Reticulation Network. The Barkers Creek Pump Station will be used to pump water from the Barkers Creek Reservoir into the Harcourt Water Supply Reticulation Network. The water pressure balancing tank will provide constant pressure and some storage at low demands. The Faraday Pump Station will pump water from the Coliban Main Channel to the Barkers Creek Reservoir through the proposed 500mm trunk main.

While the two packages of work have been combined to form the Harcourt Rural Modernisation Project, we have assessed the need for each scope of work separately as they have different drivers.

We have not assessed the entire Bendigo – Castlemaine Link project as part of this review. We only note that Coliban Water deferred this project in WP2 as water security had improved for the townships of Harcourt, Castlemaine and Kyneton.

Key drivers

Coliban Water has identified service improvement as the primary driver for the reticulation network and security of supply as the primary driver for the Backbone System.

Coliban Water has advised that the current open channel irrigation channel system in Harcourt experiences losses through evaporation and leakage that can exceed 50%.

The Backbone System is proposed to increase reliability of supply for Harcourt irrigators and customers in Castlemaine in Kyneton. The customers in these townships rely solely on the Coliban southern system for water supply and at the height of drought conditions in June 2009 storage levels were only sufficient to secure 13 months of supply.

Options analysis

Coliban Water proposed \$40m of capital expenditure in the 2008 price review to commence a major reconfiguration of its rural system. This proposal was driven by the commitment in its Water Supply Demand Strategy, to reconfigure all of its rural channels over the next 15 to 20 years, saving a potential 3,000 ML per annum.

Following the 2008 price review, Coliban Water undertook a review of rural modernisation options in conjunction with the Commonwealth Government. This review estimated that the cost of fully modernising 512km of channels would exceed \$130 million, which Coliban Water has noted was considered infeasible given its financial situation and the relatively small number of rural customers.

The Harcourt area has since been identified as a priority area for modernisation works, as it

accounts for approximately 29% of rural licence volumes and supports a horticultural industry.

Coliban Water also proposed in the 2008 price review to deliver Class C recycled water from the Castlemaine Wastewater Treatment Plant via a 17km pipeline to Barkers Creek Reservoir to secure water supplies for irrigators in Harcourt (\$8.3m). This project has since been deferred as the preferred option to provide secure supply for Harcourt irrigators is through the Bendigo – Castlemaine Link.

Three options were evaluated in the Harcourt Rural Modernisation Business Case submitted to the Coliban Water Board in July 2011.

- Option 1: the base case or 'do nothing' approach
- Option 2: full modernisation of the Harcourt rural system. Coliban Water estimated that this option would result in average water savings of 950ML per annum
- Option 3: purchase temporary water on the market to replace all water lost in the Harcourt system with water from the Goulburn system.

Coliban Water determined that Option 2 was preferred as it was the only option that achieved the following four selection criteria:

- Technically viable
- More efficient distribution of rural water, with reduced losses from seepage, leakage and evaporation
- Increased reliability of supply and business certainty for Harcourt irrigators
- Improved preparedness for future risk to security of urban supply

The detailed design of Option 2 was completed by engineering consultant SKM in 2010. The system has been designed for an expected 232 customer connections. Pipelines have been sized to provide all customers with greater than 5ML entitlements 100% allocation over an 8 month period and licences less than 5ML over a 12 month period, while allowing for instantaneous access to water. System flow rates and pressures have been based on the existing licence volumes and current pressures at customers' service points.

Currently water is delivered to landholders via an open channel where large volumes of water can be taken when the opportunity is presented. Coliban Water has confirmed that under the new arrangement it is expected that customers will be required to maintain or install adequate storage to manage their on-farm operations to meet peak on-farm demands.

Customers will be expected to pay for any works downstream of the meters; however the benefits from reduced on-farm losses are expected to offset the upfront cost. Unless special circumstances apply, all on-farm works will need to be completed prior to any water being delivered.

Proposed costs and timing

Coliban Water has advised it will have invested \$12.6 million on this project by the end of the WP2 period and proposes to invest another \$27.1 million in the first two years of the WP3 period to complete the project. All planning works are expected to be completed by 2012-13. Construction of the rural modernisation reticulation network and backbone system is expected to be completed in 2014-15, with the majority of construction occurring in 2013-14.

The total cost of the project was estimated in the Harcourt Rural Modernisation Business Case to be \$38.595m. This cost estimate has allowed for overhead costs and a contingency of 12%. The reticulation network and associated works (to be funded by Harcourt Irrigators) are expected to cost \$16.807m. The backbone system, including balance tank and associated works is expected to cost \$20.343m and is to be funded by the wider customer base. Additional expenditure of \$1.445m to recover the reallocation of water savings obtained through license buybacks is also included in the proposed expenditure and is to be

funded by the wider customer base.

This project has experienced significant delays in previous years due to being held up in the approvals process. At the time of writing, Coliban Water was still awaiting VicTrack approval for three proposed railway crossings, however all other approvals have been obtained, including endorsement from the Victorian Government and two planning scheme amendments.

Coliban Water has recently been taking applications for participation in the scheme from customers in Harcourt. The Harcourt Water License Offer to Sell process commenced on 8 October 2012 and closed on 23 November 2012. Customers were provided with information packs and were asked to make a decision about their level of involvement in the new system.

5.3.2 Analysis and recommended adjustments

Drivers of the backbone system

It appears that the primary purpose of the Backbone System is to facilitate two-directional flows between Bendigo and the Coliban southern system in the future through the Bendigo – Castlemaine Link. The existing open channel system in Harcourt is able to provide water supply to customers throughout the Harcourt region via gravity flows from the Upper Coliban Reservoirs without the use of pumping or balance tanks.

We are of the view that these works cannot be justified in the short-term on the basis of improving security of supply given the significant improvement in southern storage levels in recent years. As of 5 February 2013 the Southern storages, being the Upper Coliban Reservoir, the Lauriston Reservoir and the Malmesbury Reservoir, were at 92.0%, 83.4% and 33.3% of capacity respectively (79.4% across all three reservoirs).

We understand that building the backbone portion of the project now will reduce the cost of building the remaining connection to Bendigo in the future (should supply levels deteriorate to an extent that this is required). However, in the absence of further details on the cost savings of this approach and consequences of not undertaking the project now we are of the view this is not an adequate justification for undertaking the investment. Furthermore, we note that Coliban Water has not provided any evidence of customer willingness to pay for this project in the context of enhancing security of urban supply.

Drivers of the water supply reticulation network

Regarding the water supply reticulation network, we note that the primary driver of these works is to improve service by replacing the existing inefficient system. Therefore, we acknowledge that this project may be able to be justified where it is responding to demand for improved services from Harcourt rural customers, and where the wider customer base is not made any worse off by Coliban Water undertaking the project. This would require clear evidence of willingness to pay from Harcourt rural customers, which should be able to be determined from the results of the customer buy-back offer which concluded on 23 November, 2012.

At the time of writing, Coliban Water has not been able to meet our request to provide the number of customers who had signed up to participate in the reticulation network (despite this information being gathered by Coliban Water in late November of 2012), and submissions to the ESC demonstrate mixed support for the scheme. Given that the horticultural industry of Harcourt appears to have been in decline for some years, with at least 10 major rural customers closing down businesses in the last decade and only an

estimated 20 apple growers remaining in the region, we consider that there is a significant risk that customer numbers will be less than the 232 estimated by Coliban Water.²

Proposed costs and timing

The location of customers wanting to exit or to reduce their licence volume, and the volume of water offered for sale within the system are important to the final design of the project. In the event that significantly less than the anticipated 232 customers sign up to participate in the modernisation project, we would expect that Coliban Water would undertake a review of the scheme design and costs, or defer the project until there is evidence of sufficient customer willingness to pay under the revised project and cost specifications.

Recommendation

On the basis of the information received from Coliban Water to-date, and given the concerns outlined above, we do not consider a compelling case for the project to proceed as planned has been made. We have therefore removed it from the forecasts. This adjustment is reflected in Table 5-2 below.

In the event that Coliban Water subsequently provides clear evidence of willingness to pay for the reticulation system from rural customers as a result of the buy-back offer, we suggest the ESC consider re-including this project in the expenditure forecast. However, in this case we would also recommend that Coliban Water revisit the system design to ensure that it is appropriate for the number and location customers that wish to participate. We would also expect clear evidence of willingness to pay from urban customers for the backbone aspect of the project before these works proceed in the absence of security of supply issues.

We also recommend that Coliban Water ensure that those customers who have signed up to the scheme fully understand their obligations to maintain sufficient peak day storage and the agreed level of service to be provided by Coliban Water.

Table 5-2 Proposed and recommended expenditure for Harcourt Rural Modernisation Project (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Harcourt Rural	Proposed	23.64	3.42	0.00	0.00	0.00	27.06
Modernisation Project	Recommended	0.00	0.00	0.00	0.00	0.00	0.00
	Net change	-23.64	-3.42	0.00	0.00	0.00	-27.06

5.4 Echuca and Cohuna Water Treatment Plant Upgrades

5.4.1 Business proposal

The Echuca and Cohuna Water Treatment Plant Upgrades project (\$13.2m) involves the investigation of biologically activated carbon (BAC) filters at both of these plants to provide a higher level of water treatment.

Coliban Water has advised that the key driver of this project is compliance. The high levels of algal toxins in the raw water sourced from the Murray River have led to a Section 22

² Weekly Times Rural News Australia, 17 May 2012, *Harcourt apples fight on*, viewed 14 November 2012, http://www.weeklytimesnow.com.au/article/2012/05/17/482291_horticulture.html

notification from the Department of Health in 2011-12 under the existing Safe Drinking Water Regulations.

Coliban Water has also advised that the poor water quality in Echuca and Cohuna has resulted in taste and odour complaints that are among the highest in the region.

The options for this project are currently being evaluated. The preferred options for upgrades to water treatment plants are either dosing with powdered activated carbon (PAC) or building biologically active carbon (BAC) contactors.

Preliminary designs and cost estimates for PAC and BAC systems have been developed for the Cohuna Water Treatment Plant. A preliminary design and cost estimate has been prepared for the BAC option at Echuca. More work is needed to define the PAC option for Echuca and then to select the preferred engineering option.

The project will soon be ready to proceed to the design and planning approvals phase.

5.4.2 Analysis and recommended adjustments

It appears that a higher level of water treatment for residential and industrial customers in Echuca and Cohuna is required as soon as possible. This is demonstrated by the Section 22 notices and Coliban Water has advised that the taste and odour complaints in recent customer survey data are significant. Based on this advice, we are of the opinion that the upgrades are prudent and justifiable.

Coliban Water has advised that it has determined cost estimates based on previous filtration experience for Murray River systems. We note that this project could be delivered earlier in the capital program, however Coliban Water has reprioritised the timing due to financial constraints.

We have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-3 below.

Table 5-3 Proposed and recommended expenditure for Echuca and Cohuna Water Treatment Plant Upgrades (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Echuca and Cohuna Water Treatment Plant Upgrades	Proposed	0.00	7.80	5.41	0.00	0.00	13.21
	Recommended	0.00	7.80	5.41	0.00	0.00	13.21
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.5 Cohuna Water Reclamation Plant Refurbishment

5.5.1 Business proposal

This project relates to the proposed upgrade of the Cohuna Water Reclamation Plant, including the refurbishment of existing embankments, lining of the existing lagoons and construction of an additional 10 hectare lined lagoon on adjoining land.

Key drivers

Coliban Water has identified compliance as the primary driver for this project.

Coliban Water has advised that it suspects that significant seepage is occurring through the floor of the lagoons based on the observation of water levels in the evaporation lagoons and

salinity measurements in the monitoring bores around the site. In addition to seepage, the lagoon embankments have been experiencing severe erosion, which raises an OH&S risk.

The EPA raised concerns regarding leakage and poor lagoon embankment condition at an inspection dated 11 August 2011. Coliban Water then completed a water balance analysis which confirmed the presence of seepage through the lagoon floors. Furthermore, the ground water monitoring indicates that salinity measured at the bores next to the lagoons is lower than at other bores around the site, which suggests dilution of the ground water by the plant effluent.

Options analysis

A plan for the management of sewage treatment at Cohuna to ensure compliance with regulatory requirements is still to be finalised. The preferred options at this stage are as follows:

- Build a new lagoon based treatment plant and evaporation lagoons on the neighbouring site to the west of the existing plant (Option 4a). This option would allow operation of the existing plant while new treatment lagoons are being built, however, it is a costly option at \$10.9m
- Only refurbish the embankments at the existing treatment plant (Option 1). This option would be a significant cost saving at an estimated cost of \$0.2m, but there will still be a risk that Coliban Water is not complying with its Corporate EPA Licence.

Proposed costs and timing

The cost estimates for all options were based on past experience with plant upgrade projects and allowed for overhead costs and a contingency of 30%. The cost estimate for Option 4a is \$10.9m and the cost estimate for Option 1 is \$0.2m. The cost estimate for Option 4a has been included in the proposed expenditure forecast for WP3.

The project is scheduled to be completed in the last two years of WP3 allowing sufficient time to complete the detailed design and obtain planning approvals.

5.5.2 Analysis and recommended adjustments

Internal Coliban Water documentation recommends that the EPA be consulted and approval sought to allow implementation of Option 1. Coliban Water has advised that this option will only be viable if the EPA agrees that the discharge from the leaking lagoon system is having minimal negative impact on the groundwater and surrounding environment.

In our opinion, Coliban Water is acting in a prudent manner by investigating Option 1 further with the EPA. There is some potential for an agreement considering the salinity of the ground water is high. Functional design is scheduled to commence once negotiations with the EPA have been completed and a preferred option has been agreed.

Recommendation

In our Draft Report we recommended an allowance of \$0.2m for Option 1 in 2013-14, subject to Coliban Water obtaining further advice from the EPA, noting that we would update this recommendation in the event that confirmation is received from the EPA on the appropriate solution.

Subsequent to our Draft Report, Coliban Water obtained further advice from the EPA. From the additional information provided by Coliban Water, we note that the EPA has requested a review of groundwater monitoring data and intends to serve Coliban Water with a Pollution Abatement Notice to address the lagoon seepage issue.

We are therefore confident that Coliban Water will proceed with Option 4a and we have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-4 below.

Table 5-4 Proposed and recommended expenditure for Cohuna Water Reclamation Plant Refurbishment (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Cohuna Water Reclamation Plant Refurbishment	Proposed	0.00	0.00	0.00	5.44	5.44	10.89
	Recommended	0.00	0.00	0.00	5.44	5.44	10.89
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.6 Rochester Wastewater Connection to Echuca

5.6.1 Business proposal

The Rochester Wastewater Connection to Echuca project (\$7.7m) involves the construction of a new treatment plant at Rochester and transfer of treated sewage to the Singer Road storage for irrigation supply to dairy farms in the area.

Coliban Water has advised that the key driver for this project is compliance with its EPA Corporate Licence. The lagoons at the existing Rochester water reclamation plant have deteriorated over time and now leak into the groundwater system and the quality of reuse regularly exceeds the *E.coli* limit for Class C water and the salinity limit for Class 3 water.

A Pollution Abatement Notice was received from the EPA in October 2012 regarding odours and the integrity of lagoon embankments at the Rochester water reclamation plant site.

The need for this project was first identified in the late 1990s and various options have been considered since this time. The initial preferred option was to transfer screened sewage for treatment and reuse in Echuca. This option was reviewed by the Water Infrastructure Group in 2009 and following another options assessment, an option involving treatment at Rochester and transfer over a shorter distance to the Singer Road storage was proposed.

The project is proposed to be delivered under a Build Own Operate Transfer (BOOT) arrangement and the most recent cost estimate provided by Water Infrastructure Group was based on costs it has incurred on similar projects. The cost estimate was designed using a cost plus approach. Coliban Water has advised that the final pricing arrangement will be agreed at a later stage in the project. A fixed quoted price is the preferred arrangement at this stage.

5.6.2 Analysis and recommended adjustments

We note that there is a clear compliance driver for this project, and consider that the preferred solution for addressing this compliance issue is more appropriate than the earlier identified option since there is less odour risk, lower power consumption, a less stringent approvals process and a similar NPV to the previously considered option.

The staging proposed in the capital program appropriately reflects the maturity of the project.

We have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-5 below.

Table 5-5 Proposed and recommended expenditure for Rochester Wastewater Connection to Echuca (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Rochester Wastewater Connection to Echuca	Proposed	7.69	0.00	0.00	0.00	0.00	7.69
	Recommended	7.69	0.00	0.00	0.00	0.00	7.69
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.7 Bridgewater and Laanecoorie Water Treatment Plant Upgrades

5.7.1 Business proposal

This project relates to the proposed upgrades of the Bridgewater and Laanecoorie Water Treatment Plants. The majority of the \$6.20m in capital expenditure proposed is for the installation of desalination technology at these sites.

Key drivers

Coliban Water has identified compliance as the primary driver for this project.

Coliban Water has advised that the Loddon system is challenged by saline raw water, particularly during drier periods. Although there is currently no regulatory standard for salinity of drinking water supplies, Coliban Water anticipates its introduction in the 2015 Safe Drinking Water Regulations.

Options analysis

The original proposal for these systems was to connect to the Bendigo reticulation network via two pipelines, however in November 2011 Coliban Water made a decision to delay this work until the WP4 period. This decision was the outcome of a reprioritisation of projects due to financial constraints.

Coliban Water has advised that the works proposed for the WP3 period are only the essential works to keep the plants operating reliably and to meet the proposed Safe Drinking Water Regulations requirements. Coliban Water will revisit the pipelines proposal once its financial constraints are more favourable.

Proposed costs

Costs were based on similar upgrade projects completed recently at the Leitchville and Gunbower Water Treatment Plants. A contingency allowance of 35% has been applied to the desalination portion of the works.

Proposed timing

The project summary provided by Coliban Water states that this project will commence in 2014-15, with the majority of works being completed a year later. Smaller works are scheduled to take place in the final two years of WP3.

5.7.2 Analysis and recommended adjustments

A prudent approach has been taken by Coliban Water to defer the need to connect Bridgewater and Laanecoorie Water Treatment Plants to the greater Bendigo system. In our view, essential works to keep the plants operating reliably are justifiable.

Coliban Water has appropriately identified the need to address salinity issues at Bridgewater and Laanecoorie Water Treatment Plants in anticipation of proposed changes to the 2015 Safe Drinking Water Regulations. However, as outlined in our *Overview* document, it is understood that a significant amount of uncertainty surrounds these proposed changes and water businesses are currently awaiting further instruction from the Department of Health.

In addition, based on the information provided by Coliban Water, it is unclear at this stage whether desalination technology is the most appropriate solution to solve the salinity issues at both sites. An ultra-violet system to provide primary disinfection may be all that is required to comply with future regulations.

Recommendation

Based on the uncertainty surrounding the proposed 2015 changes to the Safe Drinking Water Regulations, we recommend removing all expenditure proposed in anticipation of the changes, until requirements have been finalised at a later stage. This adjustment includes the removal of expenditure proposed for ultra-violet systems and desalination technology. This adjustment is shown in Table 5-6 below.

It is also recommended that Coliban Water revisit the options analysis for both sites to determine the most efficient engineering solution to solve the salinity issues and comply with future regulations.

Table 5-6 Proposed and recommended expenditure for Bridgewater and Laanecoorie Water Treatment Plant Upgrades (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Bridgewater and Laanecoorie Water Treatment Plant Upgrade	Proposed	0.00	3.00	2.00	0.60	0.60	6.20
	Recommended	0.00	0.50	0.70	0.28	0.18	1.65
	Net change	0.00	-2.50	-1.30	-0.33	-0.43	-4.55

5.8 Water Main Renewals Program

5.8.1 Business proposal

Coliban Water has a rolling asset management program used to maintain and replace ageing or failed water mains. Coliban Water has proposed an average spend of \$1.20m per annum for the WP3 period, compared with a historical average spend of \$1.32m per annum in the WP2 period.

The key driver of the program is asset renewal to maintain existing levels of service.

5.8.2 Analysis and recommended adjustments

Coliban Water has populated its asset management system with a significant amount of asset information from the field and uses the decision models provided by the software program to determine high risk assets.

We consider that Coliban Water has taken a prudent to designing a reactive renewals program and investing funds into investigating new condition assessment methodologies to gain further information about its water mains. Proactive replacements only take place on water mains that have been identified as high risk critical assets by the software decision models.

It is clear that Coliban Water has reprioritised the expenditure for its water main renewals program compared to the WP2 period. Therefore, we have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-7 below.

Table 5-7 Proposed and recommended expenditure for Water Main Renewals Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Water Main Renewals Program	Proposed	1.20	1.20	1.20	1.20	1.20	6.00
	Recommended	1.20	1.20	1.20	1.20	1.20	6.00
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.9 Heathcote Backlog Sewerage

5.9.1 Business proposal

The Heathcote Backlog Sewerage project (\$5.6m) involves the construction of 11km of gravity sewer mains, four sewerage pump stations and 1.2km of rising main to provide sewerage services to the township of Heathcote.

Coliban Water has advised that the key driver of the project is compliance following an infill request received from the Department of Sustainability and Environment (DSE) in 2006. DSE advised Coliban Water that Heathcote had been identified as a critical sewerage infill area, which was assessed as a high priority by both the EPA and the Department of Human Services (DHS).

Coliban Water has considered a range of options in determining the most appropriate solution for the project, including a comparison between a low pressure system and a combination of flow and gravity. A gravity solution is preferred given the topography of the land in Heathcote.

The current cost estimate has been derived based on similar concept designs and Coliban Water has utilised rates for works identified in a number of recent engineering studies.

The preferred scheduling is to proceed in the first two years of WP3, however Coliban Water has reprioritised this project towards the end of the period to balance its capital program. The project is ready to advance to the community consultation stage in 2013-14.

5.9.2 Analysis and recommended adjustments

The need for Coliban Water to provide sewerage services to the township of Heathcote is clear based on the correspondence with the DSE. We also note that Coliban Water has selected an engineering solution for the area based on the topography of the land.

The cost estimate will be refined during the community consultation and detailed design phases. There is a possibility that the proposed system may need to be redesigned following the community consultation phase and a contingency allowance of 35% is an appropriate factor to account for this uncertainty at this stage.

Subsequent to our Draft Report, Coliban Water has advised that given recent community consultation and project progression, the project should be adjusted forward by three years to 2013-14 and 2014-15. This would allow the project to proceed on a continuous basis, rather than deferring the project now and then having to remobilise resources again in 2016-17.

We have not recommended any changes to the expenditure proposed by Coliban Water, however we have adjusted the timing proposed for this project in accordance with their updated proposal, as shown in Table 5-8 below.

Table 5-8 Proposed and recommended expenditure for Heathcote Backlog Sewerage (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Heathcote Backlog Sewerage	Proposed	0.00	0.00	0.00	4.00	1.60	5.60
	Recommended	4.00	1.60	0.00	0.00	0.00	5.60
	Net change	4.00	1.60	0.00	-4.00	-1.60	0.00

5.10 Occupational, Health and Safety Program

5.10.1 Business proposal

Coliban Water has a rolling Occupational, Health and Safety (OH&S) program used for undertaking remedial works at locations where OH&S hazards have been identified. Coliban Water has proposed to spend \$5.40m in total on the OH&S program in the WP3 period, compared with an actual spend of \$4.12m in the WP2 period.

Key drivers

Coliban Water has identified compliance as the key driver for this program, and has advised that it is required to comply with the *Occupational Health & Safety Act 2004 (Vic)*.

Options analysis

Coliban Water maintains an updated list of OH&S hazards on its corporate risk register. Hazards are allocated a risk score and rating based on the risk identified. Risks rated High and above can potentially cause a loss of life. Risks rated Medium and Low generally have potential to cause injury and/or health problems.

Coliban Water has advised that the hazards rated High and above have been addressed in the WP2 period. The proposed expenditure for WP3 is to close out the 121 outstanding Medium and Low risks and treat new risks as they arise. Hazards with the highest risk rating are given priority for remedial works.

In addition to the OH&S remedial works program, a number of personnel access upgrade projects have also been included in the proposed expenditure. These works include two access upgrades at sewage pump stations, two at McCay and Malmsbury Reservoir outlet towers and one for the gates at Lauriston Reservoir. Other minor remedial works will also occur at a number of tank sites for access.

Proposed costs and timing

A high level breakdown of the \$5.40m in OH&S expenditure proposed for WP3 is outlined in Table 5-9 below.

Table 5-9 Breakdown of OH&S expenditure proposed for WP3

	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
OH&S Remedial Works Program	0.17	0.30	0.30	0.30	0.30	1.37
Other Individual Projects	0.93	0.90	0.90	0.70	0.60	4.03
Total Proposed Expenditure	1.10	1.20	1.20	1.00	0.90	5.40

Coliban Water has advised that the design and construction of the remedial works is procured through a competitive tendering process which minimises the cost of the program.

The budget estimates proposed for WP3 are derived primarily from known costs of delivering similar works over the last seven years of the OH&S Remedial Works Program. In some cases, such as the channel trash grates and the personnel access works at sewage pump stations, the preliminary planning works have progressed far enough to have included indicative construction costs.

Works are spread evenly across the WP3 period with different projects proposed to be completed at various times depending on the risk rating and current maturity of the project.

5.10.2 Analysis and recommended adjustments

We consider that the need for Coliban Water to allocate expenditure to close outstanding items in its hazard risk register is clear in terms of addressing health and safety risks to the business. A reduction in expenditure on these items is also appropriate given the progress made by Coliban Water in addressing high-risk items in the WP2 period.

There are a number of other small projects that have been grouped together with the OH&S remedial works program. These projects consist of personnel access upgrade projects and other minor works which account for 75% of the total expenditure proposed by Coliban Water under this program. In our Draft Report, we noted that it was unclear how these projects were identified and costed as they are not located in the hazard risk register and no additional project details were provided by Coliban Water.

In response to our draft report, Coliban Water provided internal data capture forms for the OH&S projects.

Recommendation

On the basis of the above, we consider that the \$1.37m of expenditure proposed by Coliban Water to address all outstanding Medium and Low risks in its hazard risk register and any new hazards which may arise in WP3 is prudent.

With respect to the additional projects identified by Coliban Water on the personnel access upgrade projects and other minor works, it is not clear why these projects have not been included in the OH&S risk register, nor how these works have been prioritised the context of the risk register projects or the overall capital expenditure program.

Given these uncertainties, and the overall reduction in the risk profile of hazards identified by Coliban Water from WP2 to WP3, we recommend reducing the proposed expenditure to be consistent with the average annual spend in WP2 (\$0.83m p.a.). This adjustment is shown in Table 5-10 below.

Table 5-10 Proposed and recommended expenditure for the Occupational, Health and Safety Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Occupational, Health and Safety Program	Proposed	1.10	1.20	1.20	1.00	0.90	5.40
	Recommended	0.83	0.83	0.83	0.83	0.83	4.14
	Net change	-0.27	-0.37	-0.37	-0.17	-0.07	-1.26

5.11 Sewer Main Renewals Program

5.11.1 Business proposal

Coliban Water has a rolling asset management program used to maintain and replace ageing or failed sewer mains. Coliban Water has proposed an average spend of \$0.95m per annum for the WP3 period, compared with a historical average spend of \$0.46m per annum in the second regulatory period.

The key driver of the program is asset renewal to maintain existing levels of service. Coliban Water has advised that asset conditions are deteriorating and this risk may limit the ability to maintain service levels.

5.11.2 Analysis and recommended adjustments

Coliban Water has taken a prudent approach by designing a reactive renewals program and investing funds into its 'Stop the Block' condition assessment program to gain further information about its sewer mains. Proactive replacements only take place on sewer mains that have been identified as a high risk critical asset by the software decision models.

While the proposed total expenditure is increasing compared with the second regulatory period, we note that the average expenditure per annum in the last two years has been \$0.95m, which matches the expenditure per annum proposed for WP3. The proposed expenditure is for continuance of the condition assessment program and reactive main replacements aligned with historical expenditure, with an extra allowance for the proactive replacement of high risk critical mains based on failure rates supported by the data provided in the gravity sewer asset management plan. The proposed expenditure is evenly spread across the WP3 period.

We have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-11 below.

Table 5-11 Proposed and recommended expenditure for the Sewer Main Renewals Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Sewer Main Renewals Program	Proposed	0.95	0.95	0.95	0.95	0.95	4.75
	Recommended	0.95	0.95	0.95	0.95	0.95	4.75
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.12 Coliban Main Channel

5.12.1 Business proposal

The Coliban Main Channel project (\$4.5m) involves the replacement of concrete box flumes in three wall sections of the channel. The concrete box flume is an above ground concrete section of the channel.

Coliban Water has advised that some wall sections of the channel are heavily deteriorated and the key driver of the project is to maintain existing service levels to customers located in Bendigo, Castlemaine and Harcourt by ensuring longevity of the channel.

The three sites were identified as very high risk during a detailed structural inspection and condition assessment of the channel by AECOM in 2011-12.

A range of options for remediation were evaluated in the condition assessment, including modifying the backfill height, reinforcement of the channel walls and full replacement of section. For flume sections that were severely deteriorated and represented relatively high risks, the full replacement of the section was the preferred option because this represented a long term solution which reinstates the structural integrity and serviceability of the channel.

Costs for each of the repair options were estimated based on previous remedial works in the channel.

5.12.2 Analysis and recommended adjustments

We consider that Coliban Water's prioritised scheduled maintenance program for remediation of the channel represents a prudent approach to asset management. We also note that a number of high and medium risk sections were identified in the condition assessment and these works have been deferred until later years.

The proposed works are appropriately staged over three years in WP3 and Coliban Water has advised that each section will be completed during the winter months, when the channel can be taken offline.

We have not recommended any changes to the expenditure or timing proposed for this project, as shown in Table 5-12 below.

Table 5-12 Proposed and recommended expenditure for Coliban Main Channel (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Coliban Main Channel	Proposed	0.00	0.15	2.07	2.27	0.00	4.50
	Recommended	0.00	0.15	2.07	2.27	0.00	4.50
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.13 Summary of our recommendations

Our recommendations on adjustment to Coliban Water's capital expenditure forecast over the next five year regulatory period are outlined below.

Table 5-13 Coliban Water's forecast capital expenditure and recommended adjustments (\$m, 01/01/2013)

Capital expenditure item	Water Plan forecast						Total WP3
	2013-14	2014-15	2015-16	2016-17	2017-18		
Harcourt Rural Modernisation Project	Proposed	23.64	3.42	0.00	0.00	0.00	27.06
	Recommended	0.00	0.00	0.00	0.00	0.00	0.00
	Net change	-23.64	-3.42	0.00	0.00	0.00	-27.06
Echuca and Cohuna Water Treatment Plant Upgrades	Proposed	0.00	7.80	5.41	0.00	0.00	13.21
	Recommended	0.00	7.80	5.41	0.00	0.00	13.21
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Cohuna Water Reclamation Plant Refurbishment	Proposed	0.00	0.00	0.00	5.44	5.44	10.89
	Recommended	0.00	0.00	0.00	5.44	5.44	10.89
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

Capital expenditure item		Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Rochester Wastewater Connection to Echuca	Proposed	7.69	0.00	0.00	0.00	0.00	7.69
	Recommended	7.69	0.00	0.00	0.00	0.00	7.69
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bridgewater and Laanecoorie Water Treatment Plant Upgrades	Proposed	0.00	3.00	2.00	0.60	0.60	6.20
	Recommended	0.00	0.50	0.70	0.28	0.18	1.65
	Net change	0.00	-2.50	-1.30	-0.33	-0.43	-4.55
Water Main renewals program	Proposed	1.20	1.20	1.20	1.20	1.20	6.00
	Recommended	1.20	1.20	1.20	1.20	1.20	6.00
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Heathcote Backlog Sewerage	Proposed	0.00	0.00	0.00	4.00	1.60	5.60
	Recommended	4.00	1.60	0.00	0.00	0.00	5.60
	Net change	4.00	1.60	0.00	-4.00	-1.60	0.00
Occupational, Health and Safety Program	Proposed	1.10	1.20	1.20	1.00	0.90	5.40
	Recommended	0.83	0.83	0.83	0.83	0.83	4.14
	Net change	-0.27	-0.37	-0.37	-0.17	-0.07	-1.26
Sewer Main Renewals Program	Proposed	0.95	0.95	0.95	0.95	0.95	4.75
	Recommended	0.95	0.95	0.95	0.95	0.95	4.75
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Coliban Main Channel	Proposed	0.00	0.15	2.07	2.27	0.00	4.50
	Recommended	0.00	0.15	2.07	2.27	0.00	4.50
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Total proposed		53.65	34.49	30.32	28.95	30.59	178.00
Recommended capital expenditure		33.73	29.80	28.65	24.45	28.49	145.13
Recommended adjustments from proposed		-19.91	-4.69	-1.67	-4.50	-2.10	-32.87

6 Limitation of our work

General use restriction

This Report is prepared solely for the internal use of the Essential Services Commission. This report is not intended to and should not be used or relied upon by anyone else and we accept no duty of care to any other person or entity. The report has been prepared for the purpose of the Essential Services Commission's review of Water Plans. You should not refer to or use our name or the advice for any other purpose.