



**Essential Services
Commission**

2013-18 Review of Water Prices

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

Westernport Water

Final Report

18 February 2013

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

18 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 Westernport 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 Westernport Water to the ESC
- We submitted a request for further information and prepared a number of questions for Westernport Water
- We visited Westernport Water on 8 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 Westernport Water regarding the Draft Report and reviewed a written response from Westernport Water dated 23 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 Westernport Water's forecast operating expenditure.

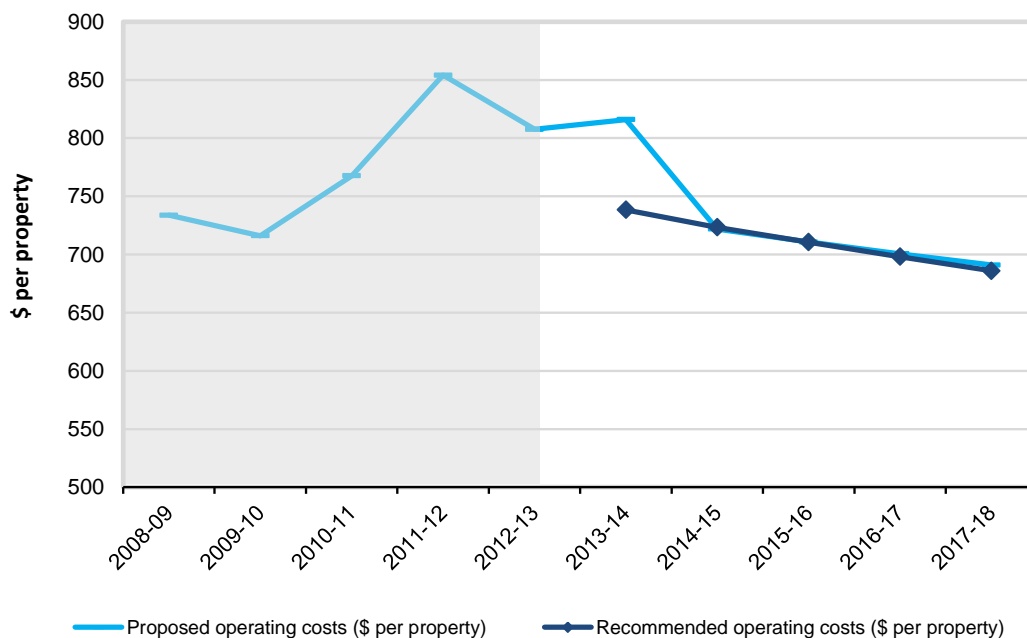
Note that throughout this report, unless indicated otherwise, references to Westernport Water's 'forecast' or 'proposal' refer to its original September Water Plan proposal and not any subsequent proposals or adjustments that have been received.

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

Operating expenditure item	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Proposed controllable operating expenditure (\$m)	12.338	12.845	11.580	11.622	11.679	11.741	59.467
Recommended adjustments							
Electricity		-0.022	-0.044	-0.067	-0.102	-0.140	-0.375
Defined benefits superannuation costs		-0.600	0.064	0.062	0.061	0.059	-0.355
Chemical costs		0.017	0.015	0.012	0.009	0.006	0.060
GSLs		-0.010	-0.010	-0.010	-0.010	-0.010	-0.050
Candowie reservoir road movement		-0.600	0.000	0.000	0.000	0.000	-0.600
Other items		-0.007	0.000	0.000	0.000	0.000	-0.007
Total recommended adjustments		-1.222	0.025	-0.003	-0.042	-0.085	-1.327
Recommended operating expenditure		11.623	11.605	11.619	11.637	11.656	58.140

Notes: Controllable operating expenditure excludes licence fees and environmental contribution.

Figure E1 compares our recommended operating expenditure for Westernport Water (on a per connection basis) with its proposal and its historical actual expenditure. Costs follow a declining trend over the WP3 period.

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

Notes: this figure includes \$0.7m of once-off operating expenditure in 2011-12 that was not included by WPW in its submission.

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

- Electricity
- New GSL payments
- Defined benefits superannuation contributions

The following table summarises the expenditure above the 2011-12 BAU for those 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	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Electricity	0.021	0.031	0.043	0.048	0.052	0.195
GSLs	0.010	0.010	0.010	0.010	0.010	0.050
Defined benefits superannuation	0.066	0.064	0.062	0.061	0.059	0.311
Total	0.097	0.105	0.115	0.118	0.121	0.556

Note: Electricity encompasses carbon price 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 to obtain a view on whether or not Westernport 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 2011-12	Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Recommended operating expenditure		11.623	11.605	11.619	11.637	11.656	58.140
Less prudent and efficient new initiatives expenditure		0.097	0.105	0.115	0.118	0.121	0.556
Recommended BAU expenditure		11.526	11.500	11.504	11.519	11.535	57.583
Adjusted BAU target	12.338	12.636	12.788	12.941	13.097	13.254	64.717
Amount above BAU target		-1.110	-1.288	-1.438	-1.578	-1.719	-7.133

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, Westernport Water meets the ESC’s productivity hurdle.

Capital expenditure

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

We have increased Westernport Water’s forecasts compared to its original submission based on:

- The incorporation of Westernport Water’s labour cost to deliver the capital projects
- More detailed allowances to address inherent and contingent risks
- Escalation (CPI only) of cost estimates to 2012-13 dollars.

Table E4 Westernport 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	
Wastewater future - Cowes	Proposed	0.55	0.76	0.00	3.90	2.10	7.31
	Recommended	0.68	0.91	0.00	4.64	2.50	8.73
	Net change	0.13	0.15	0.00	0.74	0.40	1.42
Cowes WWTP upgrade	Proposed	1.41	0.29	0.56	0.26	0.23	2.75
	Recommended	1.51	0.30	0.67	0.29	0.24	3.00
	Net change	0.10	0.01	0.11	0.03	0.01	0.25
IBWPP tertiary treatment - UV	Proposed	0.00	0.17	1.35	0.00	0.00	1.52
	Recommended	0.00	0.10	2.06	0.00	0.00	2.15
	Net change	0.00	-0.07	0.71	0.00	0.00	0.63
San Remo basin cover replacement	Proposed	0.00	0.00	0.00	0.08	1.47	1.55
	Recommended	0.00	0.00	0.00	0.11	2.09	2.20
	Net change	0.00	0.00	0.00	0.03	0.62	0.66
Water main replacements	Proposed	0.10	0.37	0.43	0.20	0.20	1.30
	Recommended	0.15	0.48	0.52	0.00	0.00	1.15
	Net change	0.05	0.11	0.09	-0.20	-0.20	-0.15
Candowie upgrade project	Proposed	1.79	0.00	0.00	0.00	0.00	1.79
	Recommended	2.39	0.00	0.00	0.00	0.00	2.39
	Net change	0.60	0.00	0.00	0.00	0.00	0.60
Total proposed		6.20	3.34	3.23	5.60	5.12	23.48
Recommended capital expenditure		7.08	3.53	4.14	6.20	5.95	26.90
Recommended adjustments from proposed		0.88	0.20	0.91	0.60	0.83	3.42

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 and demand, proposed service standards and prices.

1.2 Scope of review

The ESC has engaged the 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 will 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 Westernport 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 Westernport 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 Westernport Water's operating expenditure forecast
- Chapter 5 provides our analysis, conclusions and recommendations on key issues with respect to Westernport 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 Westernport Water on 8 November 2012
- The site visits were used to hold discussions with Westernport 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 Westernport Water.

2.1.4 Response from Westernport Water

We held discussions with Westernport Water personnel regarding the Draft Report. A formal response to the Draft Report was provided by Westernport Water on 23 January 2013. This response accepted some elements of our Draft Report, but disagreed with other elements.

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

Westernport Water provides water and wastewater services to 17,000 customers (and a peak population of more than 60,000) across Philip Island and the mainland stretching from The Gurdies to Archies Creek. The main source of water is Candowie Reservoir, where water is treated and then pumped to San Remo for distribution.

3.1 Operating expenditure

Figure 3-1 shows Westernport Water's operating expenditure over the WP2, WP3 and WP4 periods. Westernport Water's operating costs (excluding licence fees and environmental contribution) are forecast to be a total of \$59.5m over WP3, which is an increase of 5% from WP2 (total of \$56.8m). Expenditure is forecast to peak in 2013-14 with payment of a \$0.6m additional defined benefits superannuation contribution.

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

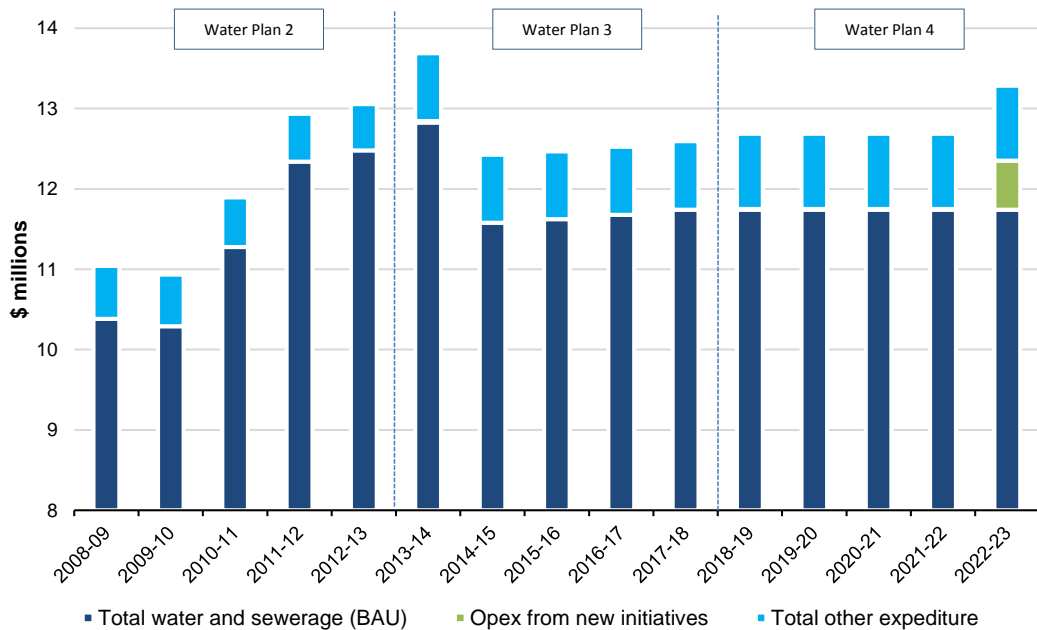
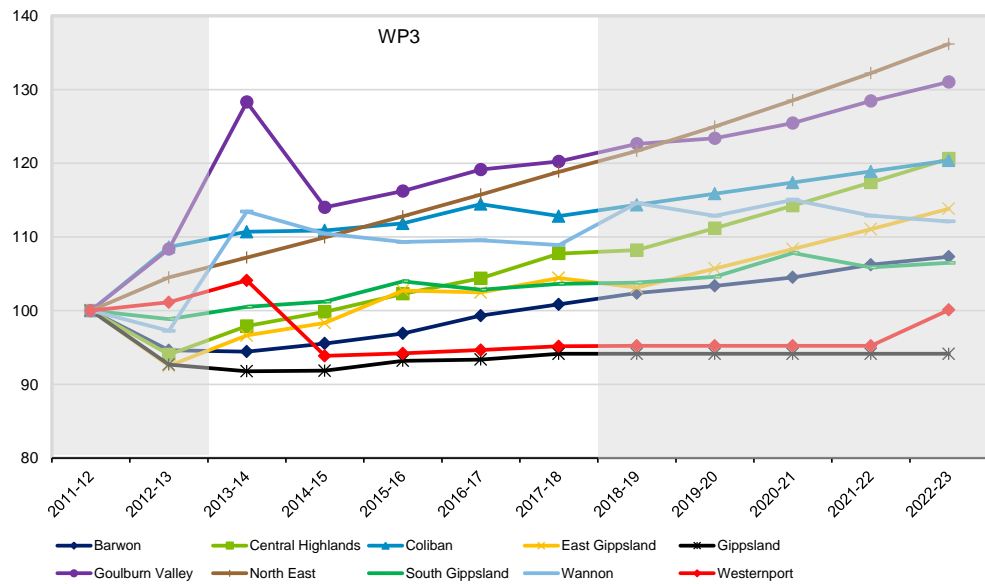


Figure 3-2 Operating expenditure (excluding licence fees, bulk charges and environmental contribution) for 2011-12, 2012-13, WP3 and WP4 periods (Index 2011-12 = 100)

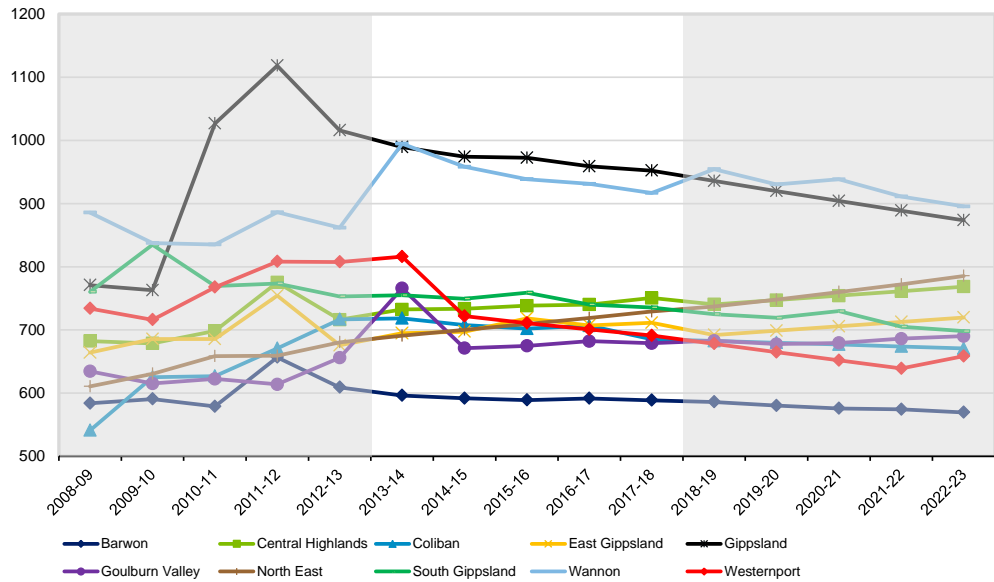


Total operating costs (including licence fees and environmental contribution) are forecast to be \$13.69m in 2013-14. Westernport Water has identified that key drivers of increased operating expenditure across WP3 include:

- Salary and wage increases
- Additional costs associated with defined benefit superannuation payments in 2013-14
- Additional environmental contributions
- Once-off costs associated with finalising road works associated with the Candowie Reservoir upgrade.

Westernport Water's costs per connection are currently at the high end for the businesses we have reviewed, but are forecast to fall over the WP3 period.

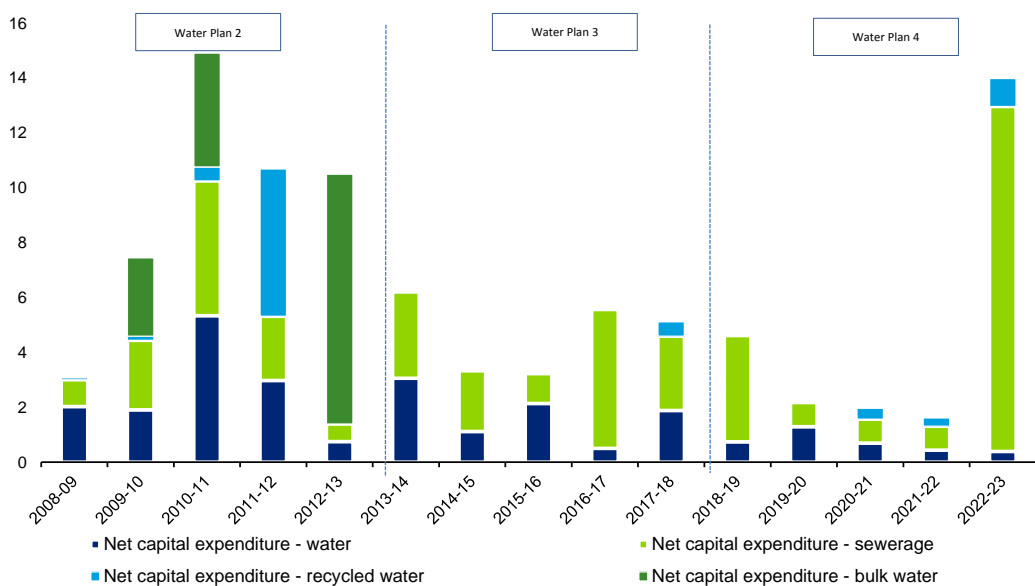
Figure 3-3 Operating expenditure per connection (excluding licence fees, bulk charges and environmental contribution) for WP, WP3 and WP4 periods



3.2 Capital expenditure

The figure below shows Westernport Water's actual and forecast water and sewerage capital expenditure. Westernport Water proposes to invest \$23.5m during WP3, which equates to an average annual capital expenditure of \$4.7m. This is less than half the actual average annual capital expenditure in the current regulatory period of \$9.7m.

Figure 3-4 Westernport Water actual and forecast capital expenditure (\$m, 01/01/2013)



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

3.3 Key drivers and obligations

3.3.1 Service standards

Westernport Water has forecast improvements in some service standards, but decreases in others. Improvements are forecast (as a result of preventative maintenance) in unplanned water supply interruptions, average time to attend Priority 2 bursts and leaks, and sewerage blockages. A deterioration in average time to attend Priority 1 and 2 sewerage spills (from 60 to 90 minutes) is forecast as a result of property access issues.

Westernport Water has proposed to add three new GSLs in WP3 in addition to the existing hardship GSL which commenced on 1 July 2011.

3.3.2 Demand

Westernport Water has forecast that the strong growth in property numbers it has experienced in recent years will continue at around 2% per annum. Demand for water is forecast to increase at 1% per annum.

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.

Westernport Water's 2011-12 operating expenditure was significantly higher than in 2010-11, which in turn was higher than 2009-10.

Westernport Water's reported expenditure for 2011-12, as submitted in its Water Plan, already excludes three one-off cost items:

- Costs associated with planning for WP3 (\$0.2m)
- Preliminary costs associated with the Candowie reservoir project (\$0.3m)
- Higher than usual electricity costs associated with the Class A recycled water plant (\$0.2m).

We have not made any additional adjustments to Westernport Water's BAU, and the resultant BAU baseline forecast is as set out below:

Table 4-1 Westernport 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	
Actual BAU	12.338						
Deloitte adjustments to BAU	0.000						
BAU baseline forecast	12.338	12.636	12.788	12.941	13.097	13.254	64.717

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.

4.2.1 Labour costs

Westernport Water's Proposal

Westernport Water's forecast of total labour costs are based upon:

- Wage increases of 4% per year in nominal terms until the expiration of the current EBA in July 2013
- Wage increases of 4% under a new EBA
- Generally lower staff numbers compared to 2011-12.

Westernport Water's labour forecasts set out in its ESC template were originally submitted in nominal terms. The revised figures, expressed in real terms, are set out in the table below.

Table 4-2 Westernport Water 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	5.497	5.255	5.319	5.384	5.450	5.516
Number of FTEs	68.6	67.6	67.6	67.6	67.6	67.6
Cost per FTE (\$'000)	80.1	76.6	77.5	78.5	79.4	80.4

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.

Using this approach, and accepting Westernport Water's forecasts of FTEs as reasonable, results in real wages costs that are slightly higher than Westernport Water has proposed. We have therefore accepted Westernport Water's labour forecasts and made no adjustments.

4.2.2 Electricity costs

Westernport Water has four large sites and 80 small sites. Westernport Water has used Procurement Australia (PA) to tender for its electricity supply. However not all sites were picked up through the last tender process and Westernport Water is currently supplied by three separate retailers.

The Water Plan forecasts are based on an assumption of costs at large sites increasing by around 2%, and small sites increasing 10% for an overall increase of approximately 7%. 2% of this increase is due to increases in usage, with the remainder due to increased prices.

Table 4-3 Water Plan electricity forecasts (\$m, 01/01/2013)

	Actual	Forecast	Water Plan forecast				
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Large sites	0.511	0.381	0.396	0.412	0.428	0.446	0.464
Small sites	0.171	0.165	0.186	0.208	0.234	0.262	0.294
Total	0.682	0.546	0.582	0.620	0.662	0.708	0.758
% Change		-19.9%	6.5%	6.6%	6.8%	6.9%	7.1%

As noted in our *Overview* document Procurement Australia has recommended that AGL be selected to provide electricity services and a new three year quote has been provided to

Westernport Water. Using the quote provided by Procurement Australia, and making certain assumptions as set out in the *Overview* document, in our Draft Report we recalculated Westernport Water's electricity costs and proposed to remove approximately \$0.45m from the forecast across the WP3 period.

In response to our Draft Report Westernport Water provided a set of alternative electricity forecasts, based on the Procurement Australia quote. Westernport Water also revised its actual 2011-12 electricity expenditure down from \$0.682m to \$0.521m.

Table 4-4 Revised electricity costs provided by Westernport Water in response to Draft Report (\$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	
Original WP3 forecast	0.682	0.582	0.620	0.662	0.708	0.758	3.330
Revised forecast	0.521	0.571	0.599	0.629	0.661	0.695	3.155
Reduction	0.161	0.011	0.021	0.033	0.047	0.063	0.175

We have reviewed Westernport Water's forecasts and increased our projections slightly. However we still consider that Westernport Water's forecasts are overstated, particularly in 2016-17 and 2017-18 where it has forecast a 7% real increase in standing charges. Accordingly we have reduced the revised forecasts, as set out below:

Table 4-5 Electricity costs (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast				
		2013-14	2014-15	2015-16	2016-17	2017-18
Proposed (original) electricity cost	0.521	0.582	0.620	0.662	0.708	0.758
Recommended adjustments		-0.022	-0.044	-0.067	-0.102	-0.140
Revised cost allocation		0.560	0.577	0.595	0.606	0.618

4.2.3 Defined benefits superannuation

Westernport Water has included a once-off operating expenditure item of \$0.666m in its 2013-14 forecasts as a result of its requirement to make an additional defined benefit superannuation contribution (including contributions tax) to Vision Super.

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%.

Our proposed adjustments to Westernport Water's forecast for superannuation guarantee payments are set out in the Table below.

Table 4-6 Westernport Water defined benefits superannuation expenditure (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast				
		2013-14	2014-15	2015-16	2016-17	2017-18
Proposed superannuation payment		0.666	0.000	0.000	0.000	0.000
Recommended adjustments		- 0.600	0.064	0.062	0.061	0.059
Revised superannuation payment		0.066	0.064	0.062	0.061	0.059

4.2.4 Chemical costs

In its submission Westernport Water forecast a steady increase in chemical costs across WP3, as shown in the table below.

Table 4-7 Westernport Water proposed chemicals 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 chemicals expenditure	0.270	0.281	0.286	0.292	0.298	0.304
Increase on previous year	86.21%	0.20%	2.00%	2.00%	2.00%	2.00%

Westernport Water noted that chemical costs increased from \$0.145m in 2010-11 to \$0.27m to 2011-12 due to additional fluoridation, chloramination and reuse activities. It also noted that a further increase of \$10,000 is expected in 2012-13 to reflect a full year of fluoridation expenditure. Beyond 2013-14 the 2% annual increase in costs proposed by Westernport Water reflected both increases in the volume of chemicals used, as well as price increases.

In our Draft Report we accepted that additional volumes of chemicals will be required to reflect increasing usage in Westernport's area. However, as set out in our *Overview* document, we did not consider it reasonable that chemical costs should increase in real terms across the WP3 period. We therefore adjusted Westernport Water's chemical cost forecast as follows:

- We accepted Westernport Water's 2011-12 and 2012-13 expenditure
- Beyond 2012-13 we applied a 1% growth in costs to reflect changes in the volume of water supplied.

In response to our Draft Report Westernport Water advised that its actual chemicals expenditure in 2011-12 was \$0.295m, not \$0.270m as included in its WP3 submission. Westernport Water agreed with our assumption of no real growth in chemical prices, but sought the 1% growth in use to be applied on the higher 2011-12 expenditure figure.

We have accepted Westernport Water's position. Our adjustments to Westernport Water's (original) forecasts are set out below:

Table 4-8 Recommended chemical 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 chemicals expenditure	0.295	0.281	0.286	0.292	0.298	0.304
Recommended adjustments		0.017	0.015	0.012	0.009	0.006
Revised chemicals expenditure		0.298	0.301	0.304	0.307	0.310

4.2.5 GSL costs

Westernport Water proposes to introduce three new GSLs in the WP3 period:

- More than 5 unplanned water interruptions within any 12 month period (\$50)
- Sewage spill in a house not contained within 1 hour of notification (\$500)
- Sewage spill onto property not contained within 5 hours of notification (\$250)

In addition, the hardship GSL has been in place since 1 January 2011.

Westernport Water's WP3 submission estimated an additional \$20,000 cost per annum in relation to these GSLs, which it has nominally allocated as \$10,000 for water and \$10,000 for sewerage. However this was a high level estimate based on advice to customers and Westernport Water did not calculate the cost of paying GSLs or the associated administrative costs on a 'ground up' basis. For the purposes of the Draft Report we therefore removed the expenditure pending more detailed information for inclusion in our Final Report.

In response to the Draft Report Westernport Water revised its GSL expenditure down from \$20,000 to \$10,000 per annum. Although Westernport Water did not provide details of this

calculation, we believe this new estimate is more reasonable. We have therefore accepted it.

Table 4-9 Westernport Water proposed GSL 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 payment	0	0.020	0.020	0.020	0.020	0.020
Recommended adjustments		-0.010	-0.010	-0.010	-0.010	-0.010
Revised payment		0.010	0.010	0.010	0.010	0.010

4.2.6 Unregulated costs

Westernport Water owns and operates a reticulated gas network which has a small number of customers. Operation and maintenance of this network is undertaken by Westernport Water staff and shared costs are allocated to the gas business. Costs include salaries and wages (\$20,000 par annum) and annual training (also \$20,000 per annum). Around \$13,000 in maintenance and gas purchase costs are also incurred.

Westernport Water also operates a small farming business with around \$10,000 in forecast expenditure each year over WP3. The size of the farming operation is reducing and less cattle are being held as additional land is required for treatment operations.

In our Draft Report we noted that no overheads were allocated to the gas activities, and we proposed that overheads of 50% be applied.

In response to the Draft Report Westernport Water has argued that overheads for the gas business are likely to be less than 10% and hence immaterial. We have accepted this position and made no adjustments for the purposes of this Final Report

4.2.7 Candowie Reservoir road relocation

Westernport Water is currently enlarging Candowie Reservoir by raising its embankment. As part of this project it is necessary to relocate a road which will otherwise be submerged with the higher water level.

An amount of \$0.600m has been included in 2013-14 operating expenditure. Although the expenditure is of a capital nature (i.e. it involves the construction of a new asset) Westernport Water advises that because the road is owned by the council and not Westernport Water it cannot be treated as capital expenditure under Australian Accounting Standards.

Although this is the correct treatment from an accounting perspective, we believe there are a number of reasons why the expenditure is best treated as capital expenditure from a regulatory perspective:

- The expenditure is of a once-off nature, and relatively large - it increases BAU operating expenditure by about 5% in 2013-14.
- It is one element of a larger capital project
- It relates to the construction of a long-life asset.

We have therefore removed this cost from operating expenditure, and instead added it to capital expenditure.

Table 4-10 Candowie Reservoir road relocation (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed payment		0.600				
Recommended adjustments		-0.600				
Revised payment		0.0				

4.2.8 Additional items

In its Water Plan Westernport Water identified that it would incur an additional \$300,000 in WP3 for preventative maintenance.

We understood that this figure was an annual amount over and above baseline preventative maintenance spend and, in the absence of information to justify this increase, removed \$1.5m from Westernport's forecast.

Westernport Water has since confirmed that the \$300,000 is its total proposed expenditure on preventative maintenance, and not the proposed increase in expenditure. Its actual preventative maintenance expenditure in 2011-12 was \$267,000, which was well below its 2011-12 budget and 2012-13 forecast. We have therefore accepted Westernport Water's forecast in this area.

We have removed a once-off payment of \$7,000 which represents the cost of bringing BoM data collection in-house from Thiess. There are no new obligations associated with this expenditure and we consider it a standard BAU activity which can be funded from existing resources.

Table 4-11 Other items (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Proposed cost	0.267	0.307	0.300	0.300	0.300	0.300
Recommended adjustment		-0.007	0.000	0.000	0.000	0.000
Revised cost		0.300	0.300	0.300	0.300	0.300

4.3 Recommended changes to operating expenditure

Recommended operating expenditure

The table below summarises our recommended changes to forecast operating expenditure. Overall we recommend reducing Westernport Water's operating expenditure from \$59.5m to \$58.1m – a 2% reduction.

Table 4-12 Westernport Water forecast controllable operating expenditure and recommended adjustments (\$m, 01/01/2013)

Operating expenditure item	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Proposed controllable operating expenditure (\$m)	12.338	12.845	11.580	11.622	11.679	11.741	59.467
Recommended adjustments							
Electricity		-0.022	-0.044	-0.067	-0.102	-0.140	-0.375
Defined benefits superannuation costs		-0.600	0.064	0.062	0.061	0.059	-0.355

Operating expenditure item	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Chemical costs		0.017	0.015	0.012	0.009	0.006	0.060
GSLs		-0.010	-0.010	-0.010	-0.010	-0.010	-0.050
Candowie reservoir road movement		-0.600	0.000	0.000	0.000	0.000	-0.600
Other items		-0.007	0.000	0.000	0.000	0.000	-0.007
Total recommended adjustments		-1.222	0.025	-0.003	-0.042	-0.085	-1.327
Recommended operating expenditure		11.623	11.605	11.619	11.637	11.656	58.140

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

- Electricity
- New GSL payments
- Defined benefits superannuation contributions

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

Table 4-13 Prudent and efficient new initiatives and obligations expenditure above the 2011-12 baseline (\$m, 01/01/2013)

Operating expenditure item	2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Electricity	0.021	0.031	0.043	0.048	0.052	0.195
GSLs	0.010	0.010	0.010	0.010	0.010	0.050
Defined benefits superannuation	0.066	0.064	0.062	0.061	0.059	0.311
Total	0.097	0.105	0.115	0.118	0.121	0.556

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 to obtain a view on whether or not Westernport Water's operating expenditure, following our adjustments, meets the ESC's productivity hurdle.

Table 4-14 Productivity hurdle assessment (\$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	
Recommended operating expenditure		11.623	11.605	11.619	11.637	11.656	58.140
Less prudent and efficient new initiatives expenditure		0.097	0.105	0.115	0.118	0.121	0.556

Operating expenditure item	Actual 2011-12	Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Recommended BAU expenditure		11.526	11.500	11.504	11.519	11.535	57.583
Adjusted BAU target	12.338	12.636	12.788	12.941	13.097	13.254	64.717
Amount above BAU target		-1.110	-1.288	-1.438	-1.578	-1.719	-7.133

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, Westernport Water meets the ESC's productivity hurdle.

5 Capital expenditure

This chapter of the report sets out our assessment of Westernport 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 Westernport 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 Westernport Water's capital expenditure program as whole.

5.1.1 Capital expenditure planning

Westernport Water's Water Plan states that they have used their risk management framework to assess all proposed capital projects and programs.¹ Westernport Water advised that projects may have their origin from operational staff identifying required works, through to the asset management system and associated strategic asset management plans and strategic documents.

A project proposal is required to be developed for all potential projects. Initial priority is established through a risk ranking (low / moderate / high) contained in the Project Proposal by the project sponsor. This is then refined at a Corporate level through stakeholder risk reviews. The Project Priority Model is used to 'rank' projects in priority of inclusion in water plan, risks, environmental impacts, and payback.

Westernport Water's proposed major projects and programs have generally been supported by a project proposal (referred to as a business case), consulting engineers report and/or strategy/plan.

5.1.2 Cost estimation and escalation

For larger projects, Westernport Water has typically based forecast expenditure on consulting engineers' estimates, recent relevant work and quotations. Westernport Water indicated that the level of accuracy of the cost estimates provided is appropriate for this stage of project planning.

Westernport Water did not determine P5, P50, P95 cost estimates for any projects to forecast expenditure in their initial proposal. In response to our Draft Report, Westernport Water has provided P50 cost estimates for their five largest projects.

Westernport Water has chosen to apply a percentage to determine P50 cost estimates, rather than use a probabilistic approach (i.e. Monte Carlo analysis), which most water

¹ Westernport Water 2012, *Water Plan 3 (1 July 2013 to 30 June 2018)*, p.20

businesses have adopted. We note that there is no specific formula or accurate correlation between a contingency allowance for risk exposure determined by a percentage basis or a probabilistic basis. However, there is a guide on the percentage above the base estimate that would represent the P50 and P90 levels.² Westernport Water has applied a percentage above the base estimate that is consistent with such guidance.

In the absence of P50 cost estimates determined by a probabilistic basis, Westernport Water's approach and percentages applied to address inherent and contingent risks generally appears to be reasonable. We would however, recommend that Westernport Water use a probabilistic approach to determine P50 cost estimates for significant capital investments in the future.

The cost estimate revision has led to an increase in expenditure for all of these projects, which is due to:

- The incorporation of Westernport Water's labour cost to deliver the capital project
- More detailed allowances to address inherent and contingent risks
- Escalation (CPI only) of cost estimates to 2012-13 dollars.

Westernport Water has confirmed that the labour costs in the operating expenditure model for WP3 reflect a percentage to be allocated to capital expenditure.

It does not appear that Westernport Water has applied construction cost escalation factors beyond CPI.

5.1.3 Deliverability of the capital expenditure program

Westernport Water proposed to invest \$23.5m during WP3, which equates to an average annual capital expenditure of \$4.7m. This is less than half the actual average annual capital expenditure in the current regulatory period of \$9.7m.

Subsequent to our Draft Report, Westernport Water's forecast expenditure for WP3 has increased by \$3.3m due to incorporation of P50 cost estimates for the five largest projects.

ESC's recent Water Performance Reports^{3,4} indicate that Westernport Water has deferred or cancelled a number of projects for strategic reasons. Whilst Westernport Water has experienced delays in delivering the Candowie Upgrade Project, it has demonstrated that it is capable of delivering a capital works program in excess of that proposed for WP3.

5.2 Major projects

Table 5-1 provides an overview of the top six projects (by capital expenditure), showing the primary driver and forecast expenditure over the current and next regulatory period. We have limited our review to the top six projects (by expenditure), as they are greater than \$1m in expenditure and represent nearly 70% of the program (by expenditure).

² Evans & Peck 2008, *Best Practice Cost Estimation for Publicly Funded Road and Rail Construction; report to Department of Infrastructure, Transport, Regional Development and Local Government*

³ Essential Services Commission 2010, *Water Performance Report – Performance of urban water and sewerage businesses in 2009-10*

⁴ Essential Services Commission 2011, *Water Performance Report – Performance of urban water and sewerage businesses in 2010-11*

Table 5-1 Westernport Water top six 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		
Wastewater future - Cowes	Growth	0.55	0.76	-	3.90	2.10	7.31	31%
Cowes WWTP upgrade	Compliance	1.41	0.29	0.56	0.26	0.23	2.75	12%
IBWPP tertiary treatment - UV	Compliance	-	0.17	1.35	-	-	1.52	6%
San Remo basin cover replacement	Asset renewal	-	-	-	0.08	1.47	1.55	7%
Water main replacements	Asset renewal	0.10	0.37	0.43	0.20	0.20	1.30	6%
Candowie upgrade project	Growth	1.79	-	-	-	-	1.79	8%
Sub-Total - Top 6 Projects		3.85	1.59	2.34	4.44	4.00	16.21	69%
Other projects		2.36	1.75	0.89	1.17	1.12	7.28	
Total		6.20	3.34	3.23	5.60	5.12	23.48	
Proportion of annual expenditure		26%	14%	14%	24%	22%		

Notes: The figures in the table above reflect Westernport Water's original forecasts

5.3 Wastewater future – Cowes

5.3.1 Business proposal

This project relates to the progressive augmentation of the Cowes sewerage system to accommodate growth.

Key drivers

Westernport Water has identified growth as the primary driver for this project.

Options analysis

Westernport Water has assessed two main options for the provision of long-term wastewater services to Cowes:

- Augmentation of the existing gravity sewer system and intermediate pump station facilities (estimated at \$19.0m)
- Provision of a new regional outfall pump station and diversion of flows from east and west Cowes (estimated at \$17.0m).

Westernport Water has identified the second option (provision of a new regional outfall pump station and diversion of flows from east and west Cowes) as the preferred option. Westernport Water has recommended a staged approach to implementing this option. A consulting engineers' report supports this recommendation.

Proposed costs and timing

Cost estimates have been based on the Cowes Strategy (2004) and include 20% contingency and 18% for engineering. Costs have been increased based on CPI.

Westernport Water did not provide a P50 cost estimate for this project in their initial proposal.

Proposed timing

Westernport Water has proposed to upgrade two existing pump stations in 2013-14 and 2014-15, to address compliance risks,⁵ and construct two rising mains in 2016-17 and 2017-18, to accommodate forecast growth.

5.3.2 Analysis and recommended adjustments

The need to augment the Cowes sewerage system to address current compliance risks and accommodate growth is clear. Growth forecasts used in the project analysis (2% p.a.) are consistent with the growth forecasts in the Water Plan.

Data provided by Westernport Water indicates that forecast flows would exceed capacity after 2017, unless all proposed augmentation elements were implemented. This has been determined assuming peak wet weather flow equates to six times average dry weather flow (ADWF), which seems high. It would be expected that the ratio between peak and dry flows would decrease with the implementation of new sewerage infrastructure (i.e. new areas of development).

In our Draft Report we recommended that the construction of the proposed rising main from Heyley Avenue (\$2.1m) be deferred to WP3 given the uncertainty associated with growth forecasts and the relatively high ratio between peak and dry wastewater flows. We stated that it would be more prudent to address inflows and infiltration into the sewerage system and defer the construction.

⁵ EPA State Environment Protection Policy (SEPP) – Requirement of sewerage systems to contain flows generated during a one in five year Average Recurrence Interval (ARI) rainfall event.

In response, Westernport Water disagreed with our recommendation, citing that:

- Forecast wastewater flows will exceed capacity after 2017 unless all proposed augmentation elements are implemented.
- SCADA data available from sewer pump stations in the Cowes catchment indicates that the majority of these catchments have inflows greater than 6 x ADWF. As a design criteria adopting 6 x ADWF is common across many water corporations
- Westernport Water has considered addressing inflows and infiltration (I/I) as an alternative to undertaking the Cowes West works in 2017-18. However, their experience has been that significant time, effort and cost can be expended on I/I works with little guarantee of return. Westernport Water has an ongoing program of I/I works to support but not replace the need for future capital investment.

While we have some reservations about the inclusion of the proposed rising main from Heyley Avenue (\$2.1m) in the program due to the uncertainty of forecast growth and flows, we recognise that peak flows (6 x ADWF) have been verified with SCADA and Westernport Water has an ongoing I/I program. Accordingly we are satisfied that it is reasonable to undertaken all proposed works in WP3.

Westernport Water has also determined a P50 cost estimate for the project, in accordance with the recommendation in our Draft Report. This has led to an increase (\$1.4m) in forecast expenditure.

Recommendation

In accordance with our analysis above, we recommend we recommend that the proposed program be accepted with Westernport Water's revised (P50) forecast expenditure. This adjustment is shown in Table 5-2 below.

Table 5-2 Proposed and recommended expenditure for wastewater futures – Cowes (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Wastewater future - Cowes	Proposed	0.55	0.76	0.00	3.90	2.10	7.31
	Recommended	0.68	0.91	0.00	4.64	2.50	8.73
	Net change	0.13	0.15	0.00	0.74	0.40	1.42

5.4 Cowes WWTP upgrade

5.4.1 Business proposal

The project involves the upgrade of the Cowes wastewater treatment plant (WWTP). The key activity in the Cowes WWTP upgrade involves the conversion of the treatment process to a biological nitrogen removal (BNR) operation.

Key drivers

Westernport Water has identified compliance as the primary driver for this project. Growth has also been identified as a key driver.

Options analysis

Westernport Water has reported that increased flows and several recent events (high flows combined with low dissolved oxygen) have compromised the performance of the plant and there have been multiple breaches of its EPA licence notification limits.

Consulting engineers recently undertook a review of the plant and recommended a strategy⁶ that would cater for future growth, achieve stable operation and improve its performance. The review considered other recent engineering assessments of the plant and recommended works be undertaken over WP3 and WP4.

Proposed costs

Westernport Water used the cost estimates from the Cowes WWTP upgrade strategy to forecast expenditure.⁷ The capital cost estimates detailed in the strategy include 50% in allowances (contractor overheads and profit (10%), construction contingencies (25%) and design and documentation (15%)).⁸ Westernport Water advised that these allowances appeared reasonable and recent experience indicated that they tend to under-estimate on-costs for projects.

Westernport Water did not provide a P50 cost estimate for this project in their initial proposal.

Proposed timing

Westernport Water has planned to commence works in 2013-14 and progressively upgrade components of the plant during WP3.⁹

Westernport Water advised that an EPA works approval would be submitted in December 2012 and expected to receive approval three months after submission. Westernport Water advised that it did not foresee any delays in obtaining EPA approval.

5.4.2 Analysis and recommended adjustments

In our Draft Report we recommended that this project be removed from the capital expenditure program until there is greater certainty regarding augmentation requirements. We concluded that on the balance of evidence provided, and more importantly the current licence conditions, the proposed upgrade to the Cowes WWTP did not appear to be clearly justified, and it was not reasonable for Westernport Water customers to pay for capital works that may not be required. More specifically:

- The information provided in the project proposal indicated that compliance has been achieved at Cowes WWTP in recent years (2009 – 2012), however compliance would be unlikely under indicative future EPA licence discharge conditions (for the year 2021). The future licence conditions include the introduction of several nitrogen related parameters
- A scientific study of the Cowes WWTP ocean discharge found that the discharge currently does not comply with EPA Policy¹⁰ with respect to toxicity, marine ecosystem protection or water quality objectives. However, the inclusion of mixing zone extending at least 100m from the point of discharge would enable the discharge to comply with the Policy.

In response, Westernport Water disagreed with our recommendation, citing that:

- Deferring the project would mean that Licence conditions, plant performance and growth would not be addressed, which would not be acceptable to the EPA
- While overall flows were down due to drought conditions between June 2006 and February 2010 they have since returned to pre-drought levels and are forecast to increase in line with the growth being experienced on Phillip Island

⁶ CEE 2012, *Cowes WWTP – Upgrade Strategy 2012 - 2021*

⁷ Westernport Water 2012, *Project proposal – Cowes Wastewater Treatment Plant Upgrade*, p.5

⁸ CEE 2012, *Cowes WWTP – Upgrade Strategy 2012 - 2021*

⁹ Westernport Water 2012, *Project proposal – Cowes Wastewater Treatment Plant Upgrade*, p.5

¹⁰ EPA State Environment Protection Policy (SEPP) Waters of Victoria (WoV)

- The Project Proposal clearly states that plant performance deteriorates when flows in excess of 6 ML/d are experienced. This has led to multiple breaches of the EPA Notification Limits. In addition, Westernport Water are still in breach of the SEPP requirements for discharges to ocean
- The 100m mixing zone would only be allowed by the EPA provided that Westernport Water shows evidence that it is undertaking works that would allow the zone to be reduced or removed. This is the essence of the Works Approval process that Westernport Water is currently undertaking with the EPA
- Recent work on additional storages at the King Road WWTP indicates that this can be an expensive option and could potentially cost more than the proposed approach. Westernport Water has considered addressing inflows and infiltration (I/I) and has an ongoing program of I/I works to support, but not replace the need for future capital investment. Peak flow storage or works to reduce I/I would not address the existing compliance issues.

Westernport Water has provided additional information that demonstrates the Cowes WWTP did not meet its EPA licence conditions in 2011-12 and that it has applied for an EPA Works Approval to upgrade the treatment plant. We are satisfied that Westernport Water is proposing to upgrade the Cowes WWTP to address an existing compliance risk and the project is required.

Subsequent to our Draft Report, Westernport Water has determined a P50 cost estimate for the project, which has led to an increase (\$0.25m) in forecast expenditure.

Recommendation

In accordance with our analysis above, we recommend that the proposed project be accepted with Westernport Water's revised (P50) forecast expenditure. This adjustment is shown in Table 5-3 below.

Table 5-3 Proposed and recommended expenditure for Cowes WWTP upgrade (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Cowes WWTP upgrade	Proposed	1.41	0.29	0.56	0.26	0.23	2.75
	Recommended	1.51	0.30	0.67	0.29	0.24	3.00
	Net change	0.10	0.01	0.11	0.03	0.01	0.25

5.5 IBWPP tertiary treatment - UV

5.5.1 Business proposal

This project relates to the installation of a ultra-violet (UV) disinfection system to supplement the current Ian Bartlett water purification plant (IBWPP) treatment process.

Key drivers

Westernport Water has identified compliance as the primary driver for this project. There is a need to address the pathogen risk (giardia and cryptosporidium) in drinking water.

Options analysis

Westernport Water has indicated that an assessment of ozone, granulated activated carbon and UV disinfection processes to address the pathogen risk (giardia and cryptosporidium) of drinking water supplied by the IBWPP has been undertaken. UV disinfection process was identified as the preferred option.

Proposed costs

Westernport Water has forecast expenditure on cost estimated detailed in the functional design report prepared by consulting engineers, GHD. Westernport Water has made a reduction to the allowance made for contingencies and project management, and the UV system.

Westernport Water did not provide a P50 cost estimate for this project in their initial proposal.

Proposed timing

Forecast expenditure indicates that planning and design would be completed in 2014-15 and installation completed by 2015-16.

5.5.2 Analysis and recommended adjustments

Westernport Water has a no tolerance risk appetite of the delivery of non-safe drinking water to the community and there is a clear need for an additional barrier to address the pathogen risk (giardia and cryptosporidium) of drinking water supplied by the IBWPP is clear. UV disinfection is a typical disinfection process used in tertiary treatment to provide an additional barrier and address this type of risk.

Subsequent to our Draft Report, Westernport Water has determined a P50 cost estimate for the project, which has led to an increase (\$0.6m) in forecast expenditure.

Recommendation

We recommend that proposed expenditure for the IBWPP tertiary treatment - UV project be accepted with Westernport Water's revised (P50) forecast expenditure. This adjustment is shown in Table 5-4 below.

Table 5-4 Proposed and recommended expenditure for IBWPP tertiary treatment - UV (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
IBWPP tertiary treatment - UV	Proposed	0.00	0.17	1.35	0.00	0.00	1.52
	Recommended	0.00	0.10	2.06	0.00	0.00	2.15
	Net change	0.00	-0.07	0.71	0.00	0.00	0.63

5.6 San Remo basin cover replacement

5.6.1 Business proposal

This project relates to the replacement of the San Remo basin liner and cover.

Key drivers

Westernport Water has identified asset renewal as the primary driver for this project.

The San Remo basin is Westernport Water's main drinking water storage in the distribution system and has been identified as a critical asset. A significant leak was recently noticed through the basin liner, which highlighted a fracture in the liner at the inlet pipe connection flange. Westernport Water would be required to take the basin out of service if the liner failed. Westernport Water would not be able to meet the peak seasonal demand in the event of any failure of the San Remo Basin.

Options analysis

Westernport Water has not provided a formal option analysis. However, Westernport Water has referred to the initial design option report conducted by GHD in 1999. Westernport Water indicated that this report highlighted different options for liner and cover material including permanent cover. The liner and fixed cover option was estimated to be \$1.7m (in 1999 dollars).

Westernport Water stated that the option selected would cost \$1.7m to supply and install, and indicated that similar liner material has exhibited premature failures across the water industry over the last eight years.

Westernport Water indicated that liner material has improved and new liner products contain reinforced high-density polyethylene (HDPE), which have longer design life.

Proposed costs

Westernport Water advised that forecast expenditure has been based on a 'ballpark' quote from Colorado Lining International. Westernport Water has also made an allowance contingencies (approximately 20%) and project management (approximately 2%).

Westernport Water did not provide a P50 cost estimate for this project in their initial proposal.

Proposed timing

The San Remo basin liner and cover replacement has been scheduled for commencement in 2016-17 and completion in 2017-18.

5.6.2 Analysis and recommended adjustments

The San Remo basin is a critical asset in their drinking water supply system and there is a clear need to maintain this asset. Westernport Water has elected to replace the existing liner and cover with a more robust product, which is a sound approach. Westernport Water has scheduled project completion for the final year of WP3, which offers the flexibility of bringing the project forward if required.

Subsequent to our Draft Report, Westernport Water has determined a P50 cost estimate for the project, which has led to an increase (\$0.6m) in forecast expenditure.

Recommendation

We recommend that proposed expenditure for the water renewals/replacement program be accepted with Westernport Water's revised (P50) forecast expenditure. This adjustment is shown in Table 5-5 below.

Table 5-5 Proposed and recommended expenditure for San Remo basin cover replacement (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
San Remo basin cover replacement	Proposed	0.00	0.00	0.00	0.08	1.47	1.55
	Recommended	0.00	0.00	0.00	0.11	2.09	2.20
	Net change	0.00	0.00	0.00	0.03	0.62	0.66

5.7 Water main replacements

5.7.1 Business proposal

This program relates to the replacement of water mains.

Key drivers

Westernport Water has identified asset renewal as the primary driver for this project. Other drivers identified include improvement in service and compliance.

Program description

The project proposal provided by Westernport Water stated that the objectives of the project were to replace:

- Old CICL water mains (which had passed their service life) in Dalyston and Corinella, which have experienced increasing number of bursts
- Corinella supply main, which has been identified as a critical asset.

Correspondence with Westernport Water indicated that forecast expenditure was also based on:

- The replacement of a section of Hobas water main (\$0.07m) adjacent to San Remo bridge
- A nominal allowance (\$0.2m p.a.) in 2016-17 and 2017-18 for as yet unidentified renewals/replacements.

This information has not been provided formally in a project proposal to date.

Proposed costs and timing

Westernport Water has provided a breakdown of the cost estimate for the replacement of CICL water mains in Dalyston and Corinella, and stated that costs have been based on recently completed water main renewal projects. Cost estimates have included an allowance for contingencies and project management (approximately 22% in total).

Forecast expenditure indicates the replacement of CICL will occur from 2012-13 to 14-15.

Westernport Water indicated that there was no planned capital expenditure allocated for water mains replacement in WP2. However, failures in 2011-12 and 2012-13 led to two water mains replacement projects at a total cost of \$0.51m. On this basis, Westernport Water has allocated \$0.2m p.a. in 2016-17 and 2017-18 as an allowance for similar unexpected water mains replacement projects.

Westernport Water did not provide a P50 cost estimate for this program in their initial proposal.

5.7.2 Analysis and recommended adjustments

It is recognised that Westernport Water intends to shift towards a more planned renewal/replacement program that would be progressively developed during WP3 as condition and criticality assessments are undertaken. However, there appears to be a disconnect between works proposed under this program and Westernport Water's recently completed Water Asset Management Plan.

The focus of the proposed water mains replacement program in WP3 appears to be on the replacement of CICL water mains. However, a prioritised approach for their replacement has not been identified in the asset management plan. Instead, the asset management plan has identified the replacement of AC water mains with a diameter greater than 225 mm as a priority, estimating a renewal budget of \$0.7m from 2014-15 to 2015-16

In our Draft Report we recommended removing forecast expenditure associated with the replacement of a section of HOBAS water main (\$0.07m) and nominal allowance (\$0.2m p.a.) in 2016-17 and 2017-18. We made this recommendation on the basis that there was insufficient supporting documentation and it was difficult to support forecast expenditure that was not clearly articulated in a project proposal (business case) or consistent with a plan or strategy.

In response, Westernport Water did not agree with our recommendation, citing that:

- Potential issues around AC pipes has been recognised by the Australian water industry (refer WSAA Investigation project – Management of Asbestos Cement Pipes Oct 12)
- Their Water Asset Management Plan has identified that 225 mm AC water mains circa 1962 are a strategic priority. However, there is insufficient performance or condition data currently available to be able to prioritise the renewal / replacement of these assets. As such no specific replacement programs were developed for the 225 mm AC mains although a general allowance of \$0.2m p.a. in 2016-17 and 2017-18 was made based on their WP2 experience
- The allowance (\$0.07m) for replacement of a section of HOBAS main is a legacy operational issue from a previous burst that has not yet been addressed. The HOBAS pipe in question connects a section on the San Remo Bridge to a section on Phillip Island. This pipe is currently not in use until these works are completed.

Subsequent correspondence with Westernport Water has highlighted that 3 km of AC water mains (> 225 mm) will exceed their 50-year effective service life by 2013. Westernport Water has adopted the standard that all pipelines have an effective life of 50 years except for MSCL pipes, which have an 80-year life.

We are satisfied that an allowance (\$0.07m) for the replacement of a section of HOBAS water main is reasonable. However, we do not believe it is reasonable to include a nominal allowance (\$0.2m p.a.) for the replacement of AC water mains based on experience of unplanned expenditure in WP2. We acknowledge that 3 km of AC water mains (> 225 mm) will exceed their 50-year effective service life by 2013, however we also recognise that other water businesses have applied a less conservative effective service life for AC water mains (> 150 mm).

Recommendation

In accordance with our analysis above, we recommend:

- The nominal allowance (\$0.2m p.a.) in 2016-17 and 2017-18 for as yet unidentified renewals/replacements be excluded from the forecast expenditure for this program
- Adopting Westernport Water's revised (P50) forecast expenditure.

This adjustment is shown in Table 5-6 below.

Table 5-6 Proposed and recommended expenditure for water main replacement (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Water main replacements	Proposed	0.10	0.37	0.43	0.20	0.20	1.30
	Recommended	0.15	0.48	0.52	0.00	0.00	1.15
	Net change	0.05	0.11	0.09	-0.20	-0.20	-0.15

5.8 Candowie upgrade project

5.8.1 Business proposal

This project relates to carryover expenditure required to complete the Candowie dam upgrade project.

Key drivers

Westernport Water has identified growth as the primary driver for this project.

Project description, costs and timing

The Candowie upgrade project was approved in WP2 and is currently under construction. Forecast expenditure in WP3 (\$1.79m) includes an allowance that has been made for carryover associated with the Candowie Upgrade project. A breakdown of this is provided below.

- An allowance of \$1.37m has been allocated for delays to the spillway upgrade (\$1.18m) and the outlet tower (\$0.19m)
- An allowance of \$0.42m that represents the contingency amount for the Candowie upgrade project.

Westernport Water indicated that forecast expenditure is consistent with the existing contract and contingency allowances.

Forecast expenditure has indicated that the project will be completed in 2013-14.

5.8.2 Analysis and recommended adjustments

As discussed in section 4.2.7, Westernport Water allocated \$0.60m to operating expenditure for the relocation of a council road as part of the Candowie upgrade project. Whilst it may be appropriate to treat this as operating expenditure under Australian Accounting Standards, we believe it should be treated as capital expenditure from a regulatory perspective.

We have therefore removed this cost from operating expenditure, and added it to capital expenditure for the Candowie upgrade project. Given that this is a carryover project we have not undertaken further analysis of forecast expenditure associated with this proposal.

Recommendation

We recommend increasing capital expenditure by \$0.60m, which represents a re-allocation of operating expenditure to capital expenditure. This adjustment is shown in Table 5-7 below.

Table 5-7 Proposed and recommended expenditure for Candowie upgrade project (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Candowie upgrade project	Proposed	1.79	0.00	0.00	0.00	0.00	1.79
	Recommended	2.39	0.00	0.00	0.00	0.00	2.39
	Net change	0.60	0.00	0.00	0.00	0.00	0.60

5.9 Summary of our recommendations

Our recommendations on adjustment to Westernport Water's capital expenditure forecast over the WP3 are outlined below in Table 5-8.

Table 5-8 Westernport 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		
Wastewater future - Cowes	Proposed	0.55	0.76	0.00	3.90	2.10	7.31
	Recommended	0.68	0.91	0.00	4.64	2.50	8.73
	Net change	0.13	0.15	0.00	0.74	0.40	1.42
Cowes WWTP upgrade	Proposed	1.41	0.29	0.56	0.26	0.23	2.75
	Recommended	1.51	0.30	0.67	0.29	0.24	3.00

Capital expenditure item	Water Plan forecast					Total WP3	
	2013-14	2014-15	2015-16	2016-17	2017-18		
	Net change	0.10	0.01	0.11	0.03	0.01	0.25
IBWPP tertiary treatment - UV	Proposed	0.00	0.17	1.35	0.00	0.00	1.52
	Recommended	0.00	0.10	2.06	0.00	0.00	2.15
	Net change	0.00	-0.07	0.71	0.00	0.00	0.63
San Remo basin cover replacement	Proposed	0.00	0.00	0.00	0.08	1.47	1.55
	Recommended	0.00	0.00	0.00	0.11	2.09	2.20
	Net change	0.00	0.00	0.00	0.03	0.62	0.66
Water main replacements	Proposed	0.10	0.37	0.43	0.20	0.20	1.30
	Recommended	0.15	0.48	0.52	0.00	0.00	1.15
	Net change	0.05	0.11	0.09	-0.20	-0.20	-0.15
Candowie upgrade project	Proposed	1.79	0.00	0.00	0.00	0.00	1.79
	Recommended	2.39	0.00	0.00	0.00	0.00	2.39
	Net change	0.60	0.00	0.00	0.00	0.00	0.60
Total proposed		6.20	3.34	3.23	5.60	5.12	23.48
Recommended capital expenditure		7.08	3.53	4.14	6.20	5.95	26.90
Recommended adjustments from proposed		0.88	0.20	0.91	0.60	0.83	3.42

Notes: The proposed figures in the table above reflect Westernport Water's original forecasts

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.