



**Essential Services
Commission**

2013-18 Review of Water Prices

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

North East 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 North East 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, demand, proposed service standards and prices.

Deloitte has been engaged by the ESC to review the expenditure forecasts made by the 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 North East Water to the ESC
- We submitted a request for further information and prepared a number of questions for North East Water
- We visited North East Water on 12 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 North East Water regarding the Draft Report and reviewed a written response from North East 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

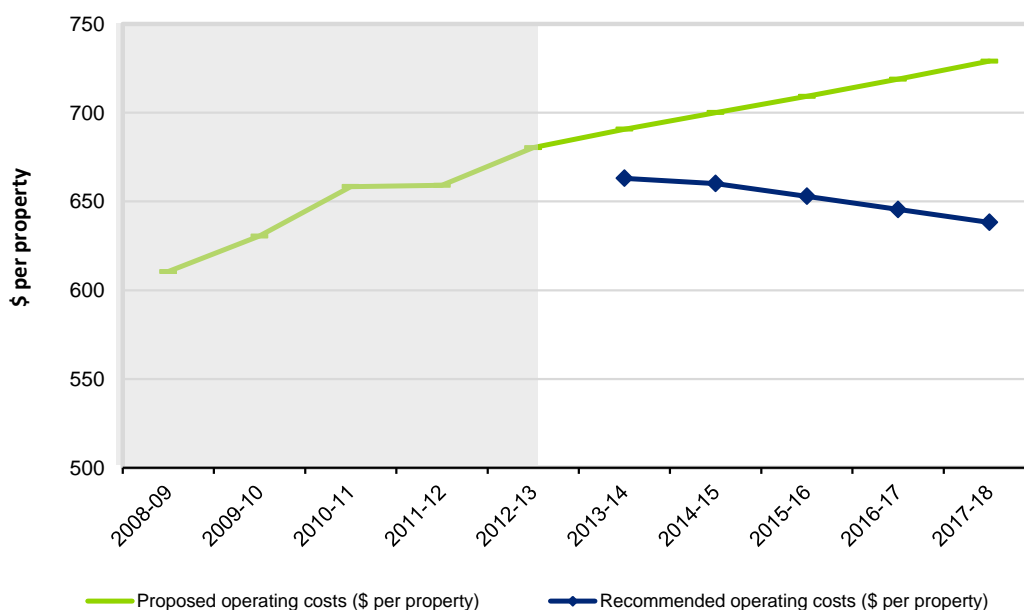
We have recommended the changes set out in the Table below to North East Water's forecast operating expenditure. Note that throughout this report, unless indicated otherwise, references to North East Water's 'forecast' or 'proposal' refer to its original September Water Plan proposal and not any subsequent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

Table E1 North East Water forecast controllable operating expenditure and recommended adjustments (\$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	
Proposed controllable operating expenditure (\$m)	30.878	33.102	33.948	34.830	35.743	36.698	174.321
Recommended adjustments							
Labour		-0.702	-1.298	-1.964	-2.657	-3.377	-9.998
Electricity		-0.453	-0.541	-0.631	-0.746	-0.866	-3.237
Defined benefits		0.194	0.189	0.183	0.179	0.174	0.918
IT		-0.319	-0.277	-0.327	-0.379	-0.433	-1.737
Operating expenditure from capital projects		-0.047	-0.013	-0.024	-0.045	-0.069	-0.198
Total recommended adjustments		-1.328	-1.941	-2.763	-3.648	-4.572	-14.252
Recommended operating expenditure		31.774	32.007	32.067	32.095	32.126	160.069

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

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

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

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

- Electricity
- Defined benefits superannuation contributions
- Operating expenditure that is required as a result of new capital expenditure projects.

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		0.134	0.176	0.222	0.251	0.282	1.066
Defined benefits		0.194	0.189	0.183	0.179	0.174	0.918
Operating expenditure from capital projects		0.172	0.266	0.282	0.287	0.294	1.302
Total		0.500	0.631	0.688	0.717	0.750	3.286

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 North East 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		31.774	32.007	32.067	32.095	32.126	160.069
Less prudent and efficient new initiatives expenditure		0.500	0.631	0.688	0.717	0.750	3.286
Recommended BAU expenditure		31.273	31.377	31.379	31.378	31.376	156.783
Adjusted BAU target	30.878	31.070	31.167	31.264	31.361	31.459	156.320
Amount above BAU target		0.203	0.210	0.115	0.017	-0.082	0.463

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, North East Water does not meet the ESC's productivity hurdle. This is mainly due to:

- Labour expenditure, which is increasing by \$6.482m in total over the 2011-12 baseline, once labour costs from new capital projects is excluded.

For North East Water to meet the productivity hurdle, a further downward adjustment of \$0.463m in total over WP3 would be required.

Capital expenditure

We have recommended changes set out in the Table below to North East Water's proposed capital expenditure.

Table E4 North East Water 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	
Water Main Replacement Program	Proposed	1.87	1.87	1.87	1.87	1.87	9.33
	Recommended	1.35	1.35	1.35	1.35	1.35	6.75
	Net change	-0.52	-0.52	-0.52	-0.52	-0.52	-2.58
Sewer Main Replacement Program	Proposed	1.38	1.38	1.38	1.38	1.38	6.90
	Recommended	1.38	1.38	1.38	1.38	1.38	6.90
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bright Water Treatment Plant	Proposed	0.16	2.26	0.77	2.34	1.34	6.86
	Recommended	0.16	2.26	0.77	2.34	1.34	6.86
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bright Off-Stream Storage	Proposed	6.82	0.00	0.00	0.00	0.00	6.82
	Recommended	6.82	0.00	0.00	0.00	0.00	6.82
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Sewer Above Ground Asset Replacements Program	Proposed	1.12	1.12	1.12	1.12	1.12	5.62
	Recommended	0.65	0.65	0.65	0.65	0.65	3.25
	Net change	-0.47	-0.47	-0.47	-0.47	-0.47	-2.37
Water Above Ground	Proposed	0.76	0.76	0.76	0.76	0.76	3.80

Capital expenditure item		Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Asset Replacements Program	Recommended	0.60	0.60	0.60	0.60	0.60	3.00
	Net change	-0.16	-0.16	-0.16	-0.16	-0.16	-0.80
Yackandandah Reclaimed Water Management	Proposed	0.09	0.52	2.33	0.52	0.00	3.46
	Recommended	0.09	0.52	2.33	0.52	0.00	3.46
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Major and Minor Plant Renewals Program	Proposed	0.60	0.60	0.60	0.60	0.60	3.02
	Recommended	0.60	0.60	0.60	0.60	0.60	3.02
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Servicing Unserviced Communities (small towns)	Proposed	1.39	1.32	0.00	0.00	0.00	2.71
	Recommended	1.39	1.32	0.00	0.00	0.00	2.71
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Wangaratta Wastewater Treatment – Stage 1 Upgrade)	Proposed	0.00	0.04	0.09	0.61	1.41	2.15
	Recommended	0.00	0.04	0.09	0.61	1.41	2.15
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Water Quality Improvement	Proposed	1.23	1.23	1.23	1.23	1.23	6.15
	Recommended	1.03	1.03	1.03	1.03	1.03	5.15
	Net change	-0.20	-0.20	-0.20	-0.20	-0.20	-1.00
Total proposed		16.18	16.39	13.61	16.57	12.29	75.04
Recommended capital expenditure		14.83	15.04	12.26	15.22	10.94	68.30
Recommended adjustments from proposed		-1.35	-1.35	-1.35	-1.35	-1.35	-6.74

Notes: The proposed figures in the table above reflect North East 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 North East 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 North East 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 North East Water's operating expenditure forecast
- Chapter 5 provides our analysis, conclusions and recommendations on key issues with respect to North East 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 North East Water on 12 November 2012
- The site visits were used to hold discussions with North East 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 North East Water.

2.1.4 Response from North East Water

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

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

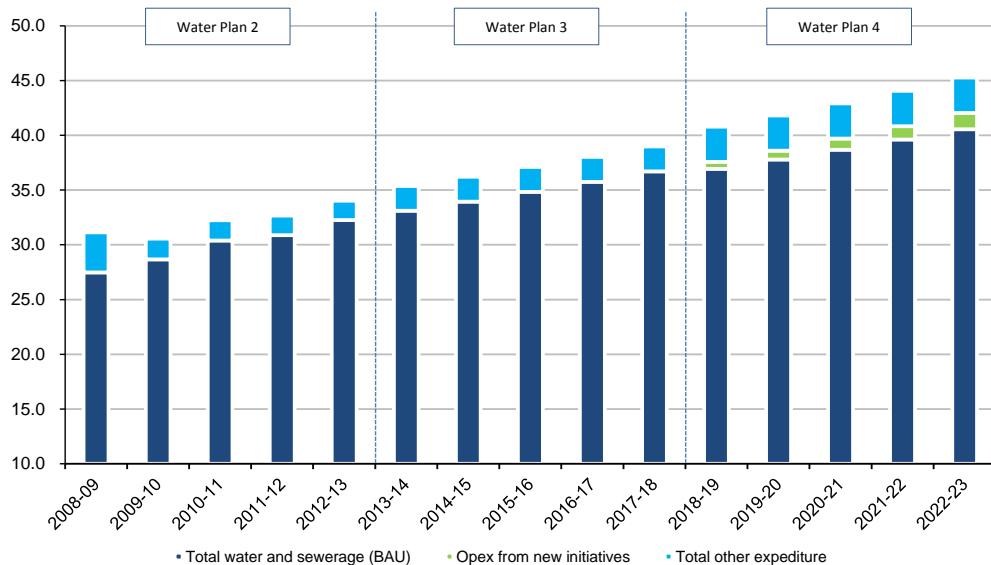
North East Water provides services to around 117,000 customers, operates 36 water treatment plants and 18 sewage treatment plants and services an area of 20,000km². Key towns served include Wodonga, Wangaratta, Benalla, and Bright.

Note that throughout this report, unless indicated otherwise, references to North East 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

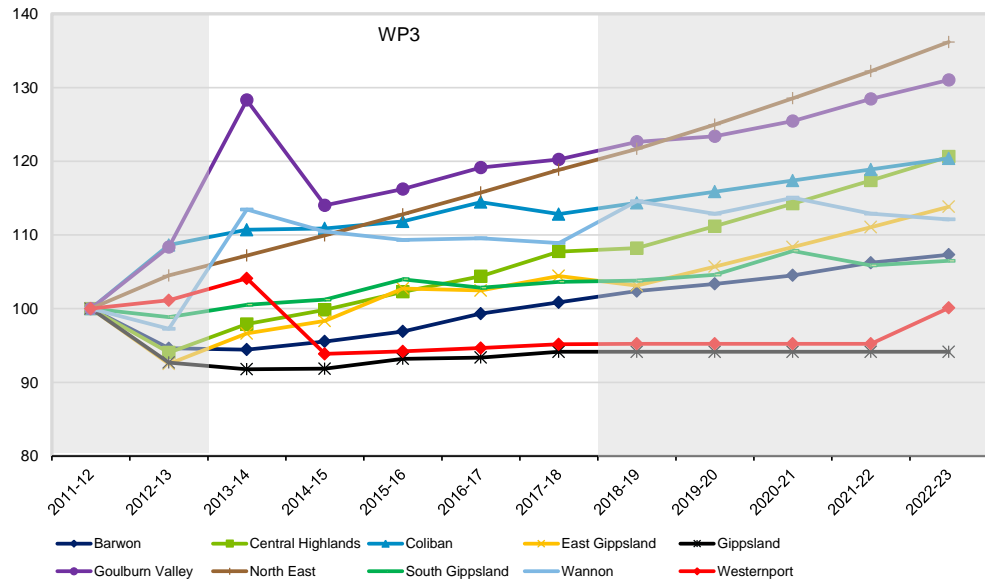
Figure 3-1 shows North East Water’s operating expenditure over the WP2, WP3 and WP4 periods. North East Water’s operating costs (excluding licence fees and the environmental contribution) are forecast to be a total of \$188.7m over WP3, which is an increase of 15.4% from WP2 (total of \$163.5m).

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



North East Water has forecast the second largest increase in operating expenditure over WP3 of the businesses we have reviewed.

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



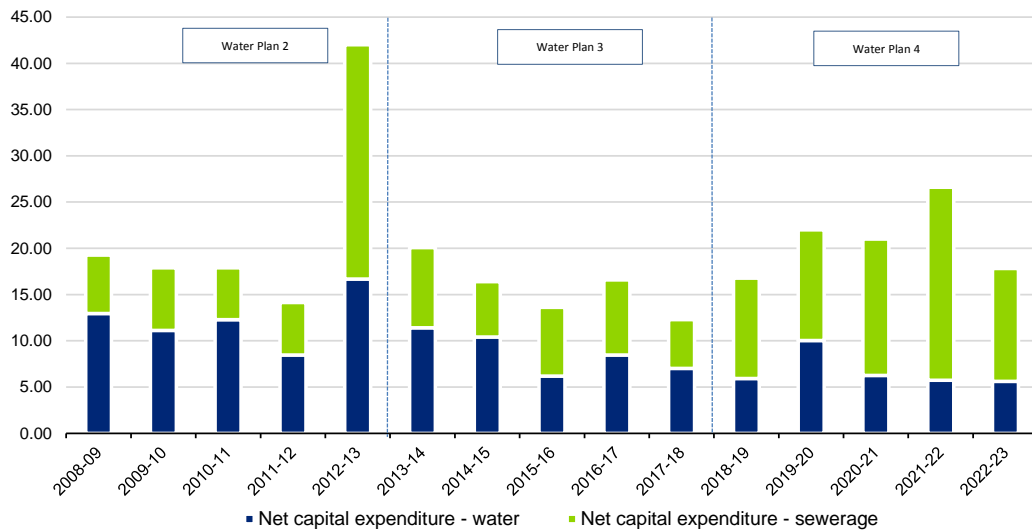
North East Water has identified that key drivers of increases in operating expenditure across WP3 as being:

- Growth in employee numbers and increased wages (4% nominal growth in wages per annum)
- Increased electricity costs resulting from the introduction of the carbon tax
- Ongoing operating expenditure resulting from capital investments.

3.2 Capital expenditure

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

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



We note that North East Water has forecast much greater capital expenditure in 2012-13 (the last year of the WP2 period) than in previous or future years. We consider it likely that a significant portion of this capital expenditure will slip into future years.

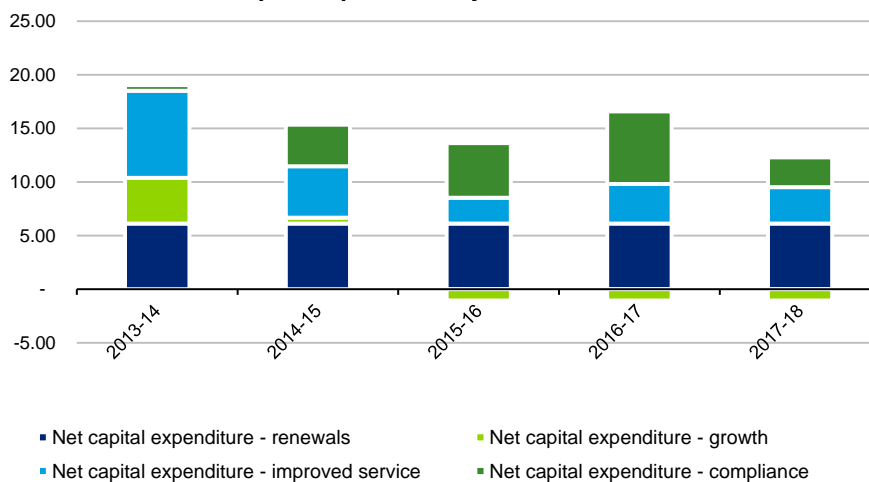
Total gross capital expenditure for WP3 is forecast to be \$78.94m which represents a 29.0% decrease on WP2 actual expenditure of \$111.19m. This includes:

- Water expenditure of \$30.92m down from \$61.50m (a decrease of 49.7%)
- Sewerage expenditure of \$25.50m down from \$49.69m (a decrease of 48.7%)

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

- Asset renewals (\$30.67m or 38.9% of total capital expenditure)
- Improved services (\$22.37m or 28.3% of total capital expenditure), including major projects such as the Bright Water Treatment Plant and Off-Stream Storage
- Regulatory compliance (\$19.00m or 24.1% of total capital expenditure).

Figure 3-4 Forecast net capital expenditure by cost driver



Note: Net growth driven capital expenditure is negative in the final three years of WP3 as North East Water has forecast customer contributions of \$1.05m per annum but no growth related capital expenditure

3.3 Key drivers and obligations

3.3.1 Government obligations

North East Water's Water Plan states that only additional ongoing operating expenditure arising from new projects has been included as a new obligation for WP3.¹ However, elsewhere in the Water Plan, North East Water has identified the following changes in Government obligations as driving increased costs:

- The introduction of the carbon tax as at 1 July 2012 is expected to lead to a significant increase in electricity costs
- Proposed revisions to the *Safe Drinking Water Regulations 2005* under the *Safe Drinking Water Act 2003* in 2015.

3.3.2 Service standards

North East Water has proposed a number of increases in targets for its service standards concerning response times for water and sewer interruptions and duration of supply interruptions

We note that despite generally outperforming the relevant WP2 targets and a significant increase in proposed expenditure on renewals (see Chapter 5), North East Water has proposed:

- To relax its targets for number unplanned water interruptions, number of customers receiving more than two water interruptions per year, and sewer blockages per 100km.
- No change to its target for customers receiving more than two sewer blockages per year.

3.3.3 Demand

Demand for water is forecast to increase by 2.6% per annum on average over the WP3 period, driven mainly by growth in residential customer numbers and use per customer.

North East Water has forecast that usage per customer will increase by 10% over the WP3 period, from 175kL to 192kL per customer, while customer numbers are expected to increase by between 1.2% and 1.4% per annum. Commercial demand is expected to remain flat and industrial demand is expected to increase by 10% per annum based on historical trends.

¹ North East Water (2012), *Water Plan 2013-14 to 2017-18*, p.24

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.

North East Water undertook an expenditure reduction initiative in the second half of 2011-12, which was initiated in response to the reduction in sales volumes to December 2011 and forecast through to June 2012.

While North East Water achieved reductions in a number of areas of operating expenditure, we also note that there were a number of increases, and at an aggregate level, 2011-12 expenditure was higher than 2010-11. Furthermore, we would expect that a number of the efficiencies achieved by North East Water would be able to be maintained on an ongoing basis. Therefore, we have not made any adjustments to North East Water's 2011-12 baseline operating expenditure.

Table 4-1 below shows North East Water's proposed BAU for 2011-12 which is then growth and productivity adjusted for the WP3 years according to the methodology in the ESC's template.

Table 4-1 North East Water 2011-12 BAU and growth adjusted forecast (\$m, 01/01/2013)

Operating expenditure item	Actual	Water Plan forecast				
	2011-12	2013-14	2014-15	2015-16	2016-17	2017-18
Actual BAU	30.878					
Deloitte adjustments to BAU	0.000					
Deloitte adjusted BAU target	30.878	31.070	31.167	31.264	31.361	31.637

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 BAU operating expenditure for the WP3 period.

In the remainder of this chapter we assess the individual items of expenditure that North East 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 4-1 to obtain a view on whether or not North East Water is meeting the ESC's productivity hurdle.

This approach ensures that our assessment of North East 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 North East Water's 'original' forecasts reflect forecasts contained in its Water Plan of September 2012. References to North East Water's 'revised' forecasts reflect adjustments proposed by North East Water in response to our Draft Report.

4.2.1 Labour costs

Business proposal

North East Water's EBA runs until 29 August 2014, and provides for wage increases of 4.25% per annum in nominal terms (or \$34 a week, whichever is greater). North East Water has advised that its proposed labour expenditure is based on:

- Assumed wage increases of 4% per annum in real terms from 2012-13, based upon the nominal increase provided for in the EBA and an additional amount for banding increments
- An increase of 3 FTEs from 2011-12 levels.

North East Water's labour cost and FTE forecasts are set out in the table below.

Table 4-2 North East 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	13.790	16.018	16.653	17.319	18.011	18.732
Number of FTEs	147.3	157.0	157.0	157.0	157.0	157.0
Cost per FTE (\$'000)	93.6	102.0	106.1	110.3	114.7	119.3

In response to our draft report, North East Water proposed to apply a real growth factor of 0.9% from 2015-16 to account for growth (based on average costs to service customers and expected customer growth of 614 properties per year).

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 North East Water's proposed labour expenditure, we have undertaken the following steps:

- Applied a 4.25% per annum nominal increase in wages from 2011-12 to August 2014, as set out in North East Water's EBA
- Applied a 2.75% per annum nominal increase (i.e. 0% real increase) in wages from August 2014 for the rest of the WP3 period
- Allowed for an increase of 3 FTEs in 2012-13, which we consider reasonable (North East Water's WP3 FTE numbers also reflect an additional 7 FTEs above the 2011-12 actual FTE numbers due to 7 vacancies as at 2011-12).

We do not consider that North East Water's revised proposal for a real growth factor of 0.9% p.a. is consistent with advice from the Victorian Government as set out in our *Overview* document. Increases in operating expenditure related to new capital projects are discussed in section 4.2.6 below, and in our view adequately account for customer growth.

Our revised labour expenditure and recommended adjustments are set out in Table 4-3.

Table 4-3 North East 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	13.790	16.018	16.653	17.319	18.011	18.732
Recommended adjustments		-0.702	-1.298	-1.964	-2.657	-3.377
Revised labour expenditure		15.316	15.355	15.355	15.355	15.355

4.2.2 Electricity costs

North East Water has 25 large and 255 small sites. As with most other businesses it has used Procurement Australia to source its energy needs.

North East Water's forecast electricity expenditure increases from \$2.0m in 2011-12 to \$3.1m in 2017-18. This increase is purely price driven – it has assumed that the volume of electricity purchased will remain at 2011-12 levels across WP3.

Table 4-4 North East Water electricity forecasts (\$m, 01/01/2013)

	Actual	Water Plan forecast					
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Large sites	1.451	1.873	1.935	2.031	2.133	2.240	2.352
Small sites	0.514	0.627	0.648	0.680	0.714	0.750	0.787
Total	1.965	2.500	2.582	2.711	2.847	2.989	3.139
% Change	2.2%	27.2%	3.3%	5.0%	5.0%	5.0%	5.0%

In our Draft Report, and 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 North East Water. We used this quote, combined it with known changes in network tariffs, and made certain assumptions as set out in the *Overview* document, in order to recalculate North East Water's forecasts for large sites. In our Draft Report we reviewed North East Water's forecasts, found them to be reasonable, and made no change.

Overall our Draft Report reduced North East Water's electricity forecast by \$3.064m.

In response to the Draft Report North East Water reduced its electricity forecast from \$15.056m to \$12.700m and:

- Identified that Deloitte did not take into account the cost of GHG offsets

- Accepted Deloitte's large site forecast
- Despite Deloitte accepting its small site forecast, sought higher costs in line with the PA quote.

We have considered North East Water's response to our Draft Report and:

- For large sites, we have updated the forecast to reflect our new assumption about energy prices during the PA quote period (i.e. that prices are constant in nominal and not real terms)
- For small sites, used the PA quote as sought by NEW, but made the projections using our standard assumptions regarding network and energy prices.

We have not included the cost of green energy in the forecasts because North East Water has not justified this expenditure through a commercial cost-benefit analysis, as sought by the ESC in its Guidance Paper.

The net effect is that we have reduced our forecast of electricity costs across WP3 from \$12.0m in our Draft Report to \$11.8m in this Final Report.

Table 4-5 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 cost	2.103	2.725	2.861	3.004	3.154	3.312
Recommended adjustments		-0.453	-0.541	-0.631	-0.746	-0.866
Recommended electricity cost		2.272	2.320	2.373	2.408	2.446

4.2.3 Defined benefits superannuation costs

North East Water's proposal

North East Water has identified a liability of \$1.965m as a result of its requirement to make an additional defined benefit superannuation contribution (including contribution tax) to Vision Super. North East Water advised that this liability was accrued in 2011-12 and it has proposed to pay the full amount in 2012-13 as a once-off operating expenditure item. Therefore North East Water has not included any future expenditure forecasts for this item in the WP3 period.

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 North East Water's expenditure forecasts for WP3 to account for payments being made over 15 years at 5.75%, as set out in the table below.

Table 4-6 North East 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	0.000	0.000	0.000	0.000	0.000
Recommended adjustments		0.194	0.189	0.183	0.179	0.174
Revised superannuation payment		0.194	0.189	0.183	0.179	0.174

4.2.4 Chemicals

North East Water's proposal

North East Water has forecast chemical costs as being flat across WP3, as shown in the table below.

Table 4-7 North East 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	0.885	1.037	1.037	1.037	1.037	1.037
Increase on previous year	-20.2%	0.0%	0.0%	0.0%	0.0%	0.0%

North East Water has advised that:

- The reduction in chemicals expenditure in 2011-12 from 2010-11 levels was due to reduced volumes arising from a cooler and wetter summer
- While there is a significant increase proposed for 2012-13 from 2011-12 levels (17.2%), forecast expenditure for 2013-14 and onwards has not increased from the 2011-12 budget allocation, and is slightly below the actual 2010-11 expenditure
- Changes in expenditure are purely volume related.

Analysis and recommended adjustments

We also note that North East Water has identified efficiencies in chemical costs in 2011-12 arising from its expenditure reduction initiative, which involved reducing the typical buffer of chemicals on hand and mitigating risks by ensuring suppliers had adequate stores available in case of emergency.

While we consider that some of these operating efficiencies should be able to be carried forward into the WP3 period, overall we consider that North East Water's proposed expenditure is reasonable.

4.2.5 IT

North East Water's proposal

North East Water has forecast a significant increase in IT costs from 2011-12 to 2013-14, and then annual increases of around 2% across WP3, as shown in the table below.

Table 4-8 North East Water proposed IT 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 IT expenditure	2.100	2.557	2.605	2.655	2.707	2.761
Increase on previous year	7.7%	1.8%	1.9%	1.9%	2.0%	2.0%

North East Water has advised that the increase in IT expenditure from 2011-12 to 2013-14 is largely due to:

- An upgrade of the GIS
- Increased licence fees
- A reinstatement of software development costs that were reduced in the expenditure reduction initiative undertaken in the second half of 2011-12

North East Water has advised further that future increases relate to increases under the EBA.

Analysis and recommended adjustments

North East Water has provided detailed information supporting an increase of around \$0.126m in licence fees, therefore we recommend an allowance for this additional expenditure in WP3.

The increase in IT wages from 2011-12 to 2012-13 of approximately 2.2% is broadly in line with our expectations of wage increases and therefore we consider this appropriate. Consistent with our recommendations on labour costs above, we recommend no additional increases to North East Water's IT expenditure across the WP3 period to allow for increases under the EBA.

However, we note that despite the expenditure reduction initiative (discussed in section 4.1, above), North East Water's IT expenditure increased by 7.7% in 2011-12. This followed increases of 23.9% and 7.9% in 2009-10 and 2010-11 respectively. Information provided by North East Water on the expenditure reduction initiative does not include any details about reductions in IT costs.

In our draft report, we noted that we did not consider that North East Water's proposed increases in operating expenditure related to software development, GIS and other activities had been adequately justified and recommend their removal from WP3 operating expenditure.

In response to our draft report, North East Water provided additional details on a number of once off and ongoing IT expenditure items it considered are required for meeting customer expectations for service delivery and customer contact, including:

- Business system conversions (Access to web-based) – \$0.035m once off
- System maintenance and GIS management – \$0.020m p.a.
- Risk management software – \$0.020m once off
- Aerial photography updates and contour acquisitions – \$0.280m once-off.

Based on the information provided by North East Water, we agree that these items are prudent investments in business improvements or risk management, and have therefore recommended their inclusion in North East Water's forecasts.

The following table summarises our recommended adjustments for IT expenditure.

Table 4-9 North East Water IT 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 IT expenditure	2.100	2.557	2.605	2.655	2.707	2.761
Recommended adjustments		-0.319	-0.277	-0.327	-0.379	-0.433
Revised IT expenditure		2.238	2.328	2.328	2.328	2.328

4.2.6 Operating expenditure from new capital projects

Business proposal

North East Water has forecast additional operating expenditure requirements from a number of new capital projects for WP3. The following table sets out the proposed projects and associated operating expenditure.

Table 4-10 North East Water proposed operating expenditure from capital expenditure (\$m, 01/01/2013)

Project	Water Plan forecast				
	2013-14	2014-15	2015-16	2016-17	2017-18
Whitfield - Water Treatment Upgrade	0.040	0.041	0.043	0.044	0.046
Tungamah - Wastewater Treatment System	0.047	0.052	0.058	0.063	0.070

Project	Water Plan forecast				
	2013-14	2014-15	2015-16	2016-17	2017-18
Glenrowan - Wastewater Treatment System	0.046	0.048	0.051	0.054	0.057
Oxley - Wastewater Treatment System	0.037	0.041	0.046	0.051	0.057
Milawa - Wastewater Treatment System	0.021	0.024	0.027	0.029	0.032
Moyhu - Wastewater Treatment System	0.000	0.040	0.045	0.049	0.053
Corryong - Water Treatment Plant Upgrade	0.029	0.033	0.036	0.040	0.046
Total	0.220	0.279	0.306	0.332	0.363

The majority of the additional operating expenditure proposed by North East Water relates to labour (\$0.74m, or 49.3% to the total across WP3) and electricity (\$0.34m or 22.6%), with maintenance, chemicals and other items making up the remainder.

Analysis and recommended adjustments

North East Water has provided business cases for the projects outlined in Table 4-10, with the preferred solutions supported by options analyses and risk assessments. Our review of the Moyhu project, as one of North East Water's major capital projects, is set out in Chapter 5. North East Water has also obtained approval (including some funding assistance for the capital component of the works) from DSE for the Oxley, Milawa, Glenrowan and Tungamah projects.

With respect to the timing of expenditure, we have accepted North East Water's proposals, noting that most of the projects are already under construction, with the exception of the Glenrowan project. North East Water has advised that this project is currently before VCAT and is therefore likely to be delayed beyond the scheduled starting date of July 2013. Accordingly, we have recommended that the forecast operating expenditure for this project be pushed back one year, to commence in 2014-15.

We have also made the following recommendations with respect to adjustments to the quantum of expenditure proposed by North East Water:

- A reduction in forecast electricity expenditure to ensure consistency with our recommended electricity price increases set out above and in the *Overview* document
- A reduction in labour cost forecasts for consistency with our recommended wage rate increase set out above and in the *Overview* document
- Adjusting some of the forecasts of maintenance expenditure, such that maintenance is consistent across the life of the project – North East Water has applied increases to maintenance expenditure across the WP3 period, apparently related to increases in connection rates. However, in our view, the overall maintenance requirements of the systems are unlikely to vary materially with connection rates once the project is complete.

The following table sets out our recommended operating expenditure for the proposed capital projects based on these adjustments.

Table 4-11 Recommended North East Water operating expenditure from capital expenditure (\$m, 01/01/2013)

Project	Water Plan forecast				
	2013-14	2014-15	2015-16	2016-17	2017-18
Whitfield - Water Treatment Upgrade	0.040	0.040	0.041	0.041	0.041
Tungamah - Wastewater Treatment System	0.046	0.047	0.050	0.052	0.052
Glenrowan - Wastewater Treatment System	0.000	0.046	0.048	0.048	0.049

Project	Water Plan forecast				
	2013-14	2014-15	2015-16	2016-17	2017-18
Oxley - Wastewater Treatment System	0.037	0.040	0.043	0.045	0.047
Milawa - Wastewater Treatment System	0.021	0.022	0.023	0.024	0.025
Moyhu - Wastewater Treatment System	0.000	0.038	0.041	0.043	0.045
Corryong - Water Treatment Plant Upgrade	0.029	0.033	0.036	0.036	0.036
Total	0.172	0.266	0.282	0.287	0.294

North East Water's proposal and our recommended adjustments are set out in the table below.

Table 4-12 North East Water operating expenditure from capital projects (\$m, 01/01/2013)

Operating expenditure item	Actual 2011-12	Water Plan forecast				
		2013-14	2014-15	2015-16	2016-17	2017-18
Proposed operating expenditure from capital projects	0.000	0.220	0.279	0.306	0.332	0.363
Recommended adjustments		-0.047	-0.013	-0.024	-0.045	-0.069
Revised operating expenditure from capital projects		0.172	0.266	0.282	0.287	0.294

4.3 Summary of recommended adjustments

Recommended operating expenditure

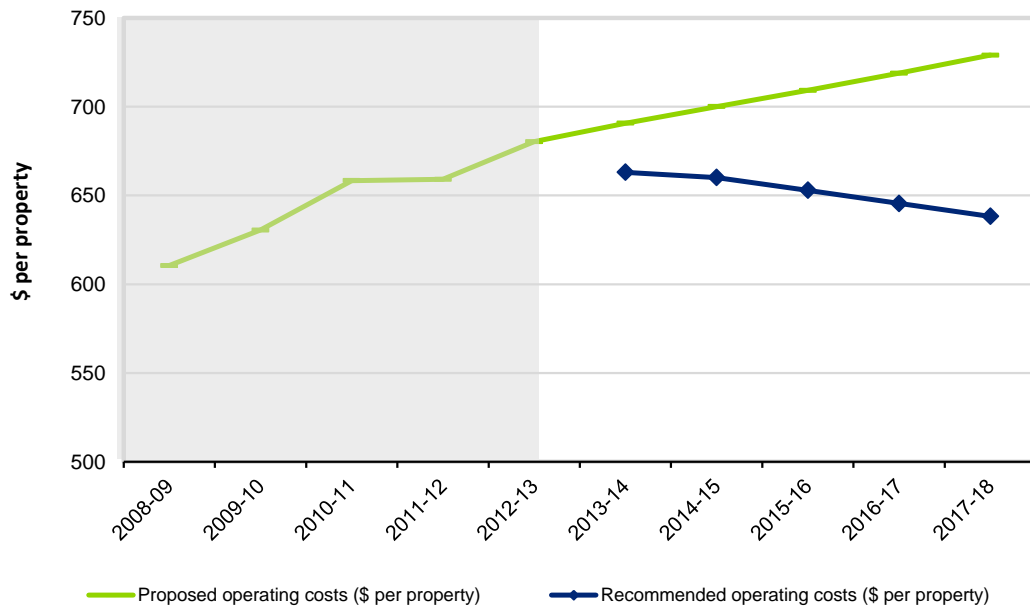
Table 4-13 provides a summary of our recommended adjustments to North East Water's operating expenditure proposal for WP3.

Table 4-13 North East Water forecast controllable operating expenditure and recommended adjustments (\$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	
Proposed controllable operating expenditure (\$m)	30.878	33.102	33.948	34.830	35.743	36.698	174.321
Recommended adjustments							
Labour		-0.702	-1.298	-1.964	-2.657	-3.377	-9.998
Electricity		-0.453	-0.541	-0.631	-0.746	-0.866	-3.237
Defined benefits		0.194	0.189	0.183	0.179	0.174	0.918
IT		-0.319	-0.277	-0.327	-0.379	-0.433	-1.737
Operating expenditure from capital projects		-0.047	-0.013	-0.024	-0.045	-0.069	-0.198
Total recommended adjustments		-1.328	-1.941	-2.763	-3.648	-4.572	-14.252
Recommended operating expenditure		31.774	32.007	32.067	32.095	32.126	160.069

Figure 4-1 below compares our recommended operating expenditure for North East Water (on a per connection basis) with North East Water's proposal.

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



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

- Electricity
- Defined benefits superannuation contributions
- Operating expenditure that is required as a result of new capital expenditure projects.

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 4-14 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		0.134	0.176	0.222	0.251	0.282	1.066
Defined benefits		0.194	0.189	0.183	0.179	0.174	0.918
Operating expenditure from capital projects		0.172	0.266	0.282	0.287	0.294	1.302
Total		0.500	0.631	0.688	0.717	0.750	3.286

Note: Electricity encompasses carbon price impacts.

Table 4-15 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 4-1) to obtain a view on whether or not North East Water's operating expenditure, following our adjustments, meets the ESC's productivity hurdle.

Table 4-15 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		31.774	32.007	32.067	32.095	32.126	160.069
Less prudent and efficient new initiatives expenditure		0.500	0.631	0.688	0.717	0.750	3.286
Recommended BAU expenditure		31.273	31.377	31.379	31.378	31.376	156.783
Deloitte adjusted BAU target	30.878	31.070	31.167	31.264	31.361	31.459	156.320
Amount above BAU target		0.203	0.210	0.115	0.017	-0.082	0.463

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, North East Water does not meet the ESC's productivity hurdle. This is mainly due to:

- Labour expenditure, which is increasing by \$6.482m in total over the 2011-12 baseline, once labour costs from new capital projects is excluded.

For North East Water to meet the productivity hurdle, a further downward adjustment of \$0.463m in total over WP3 would be required.

5 Capital expenditure

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

5.1.1 Capital expenditure planning

North East Water's capital expenditure planning processes and documentation are well designed and based on detailed analysis of each project proposal. Using a 10 year planning horizon, each project is scoped initially using a standard business case template and then rationalised using a risk assessment framework. The water plan program portfolio is then prioritised using a value-based index and alternative scenarios are tested using a sensitivity analysis.

The following capital planning systems/documents were reviewed and are up-to-date:

- NEW's Risk Management Framework, updated August 2012
- WP3 CAPEX – Major Projects, Project Justification, October 2012
- WP3 CAPEX – Major Projects, Project Scoping Documents, October 2012
- WP3 CAPEX Program Development, October 2012
- Each separate system has its own water and sewerage planning documents which are updated every five years, the latest update being 2012
- Water Supply Demand Strategy, updated June 2012.

The Regulatory Audit on Asset Management conducted in 2011 identified a number of improvement opportunities at North East Water, particularly in completing asset management strategies and maintenance plans in preparation for WP3. North East Water has since completed four separate asset management strategies for the 2008-2013 period, covering below-ground and above-ground water and sewer assets.

During 2012, the North East Water Board adopted Asset Performance as a priority Strategic Initiative. Asset replacement programs and expenditure forecasts are now developed in advance of water plan periods and are reviewed annually to service priority replacements and escalated risks.

North East Water's current Asset Management System is due for an upgrade. The business case for a new system has been written and is to be presented to the Board in late 2012. Other key projects for delivery ahead of WP3 are:

- Completion of the Aquamark project – benchmarking, best practice workshops, performance improvement opportunities identified and planned
- Asset and asset systems data review – quality, purpose and accuracy
- Cultural change – embedding an asset management culture within the organisation

We support these new asset management initiatives and believe that they will significantly increase the accuracy of priority replacements and expenditure forecasts in future periods.

5.1.2 Cost estimation and escalation

North East Water has provided P50, P5 and P95 cost estimates for each project in its capital program, however the probabilistic cost estimation methodology appears to have been misinterpreted and applied incorrectly.

Concept or preliminary design estimates have been used to develop unit rates for line items. Unit rates have been based on rates used in similar past projects. The concept or preliminary design estimate has then been used as the P50 cost estimate without any probabilistic factors applied. One contingency allowance, which is generally 15-30% depending on the project maturity, is applied to the total design estimate to arrive at the final P50 estimate.

For P5 and P95 estimates, minimum and maximum contingency levels have been set, typically 15% below for P5 and 20% above unit rates for P95.

No software has been used to develop the P50, P5 and P95 cost estimates. Calculations have been completed in an excel spreadsheet.

North East Water has not applied any capital cost escalation factors to develop its capital expenditure program.

5.1.3 Deliverability of the capital expenditure program

North East Water has proposed to invest \$75.04m during the next Water Plan, which equates to an average annual capital expenditure of \$15.00m. This is less than the actual average annual capital expenditure in the current regulatory period of \$22.20m. We note that the expenditure profile is relatively smooth and the proposed size of the capital program appears to be within the scope of that which has been previously delivered.

North East Water's past performance in capital project delivery has been reviewed as part of the last two ESC performance reports in 2009-10, 2010-11 and 2011-12. Past project delivery is below average, with six out of seven projects delayed and one project cancelled between 2009-10 and 2011-12.

Also, during the last regulatory period, North East Water deferred ten projects (\$29.80m) into WP3. Some projects were re-prioritised after a risk based review, however others were delayed for various reasons such as delays confirming requirements with EPA, site selection delays and contract award delays.

Past delivery performance has been taken into account when reviewing the staging of major projects in North East Water's capital portfolio. The staging of 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 expenditure), showing the primary driver and forecast expenditure over the current and next regulatory period.

Table 5-1 North East 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		
Water Main Replacement Program	Asset Renewal	1.87	1.87	1.87	1.87	1.87	9.35	12.5%
Sewer Main Replacement Program	Asset Renewal	1.38	1.38	1.38	1.38	1.38	6.90	9.2%
Bright Water Treatment Plant, storage expansion & temporary treatment plant	Compliance	0.16	2.26	0.77	2.34	1.34	6.87	9.2%
Bright Off-Stream Storage	Growth	6.82	0.00	0.00	0.00	0.00	6.82	9.1%
Sewer Above Ground Asset Replacements Program	Asset Renewal	1.12	1.12	1.12	1.12	1.12	5.60	7.5%
Water Above Ground Asset Replacements Program	Asset Renewal	0.76	0.76	0.76	0.76	0.76	3.80	5.1%
Yackandandah Reclaimed Water Management	Compliance	0.09	0.52	2.33	0.52	0.00	3.46	4.6%
Major and Minor Plant Renewals Program	Asset Renewal	0.06	0.06	0.06	0.06	0.06	3.00	4.0%
Servicing Unserviced Communities (small towns)	Compliance	1.39	1.32	0.00	0.00	0.00	2.71	3.6%
Wangaratta Wastewater Treatment - Stage 1 Upgrade	Compliance	0.00	0.04	0.09	0.61	1.41	2.15	2.9%
Subtotal - Top 10 Projects		13.65	9.33	8.38	8.66	7.94	50.66	67.5%
Other projects		2.53	7.06	5.23	7.91	4.35	24.38	32.5%
Total		16.18	16.39	13.61	16.57	12.29	75.04	
Proportion of total expenditure		22%	22%	18%	22%	16%		

Notes: Proposed expenditure figures reflect North East Water's original forecasts

5.3 Water Main Replacement Program

5.3.1 Business proposal

North East Water has a rolling asset management program used to maintain and replace ageing or failed water mains. North East Water has proposed an average spend of \$1.87m per annum for the WP3 period, compared with an historical average spend of \$0.85m per annum in the WP2 period.

Key drivers

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

North East Water has advised that a large percentage of its water mains are approaching the end of their useful lives, asset conditions have deteriorated, and this risk may limit the ability to maintain service levels.

Expenditure has increased from WP2 to accommodate a more proactive water main replacement program. Traditionally this program has only included expenditure for reactive works.

Program description

The water main asset management strategy is based on the following principles:

- Replace all AC pipes when service life has reached sixty years
- Replace all pipes with a theoretical condition grading five, using pipe deterioration curve and probability of failure based on condition grading table
- Replace all pipes calculated as extremely high risk using the water network criticality model
- Review all pipes and consider replacement when the failure threshold has been reached
- Program replacements in a prioritised order using the water network criticality model as the driver²

Proposed costs and timing

The program costs were developed using an estimated replacement cost for different types of water main diameters and materials. The replacement cost estimates were based on past experience and allowed for overhead costs and contingency. Contingency was included because North East Water has found that even with historical information the actual cost to replace a water main varies depending on the specific site constraints and market conditions.

The total replacement value was then reduced by 15% by North East Water's Capital Development Committee to align with budgetary constraints set by the Board. Expenditure is evenly spread over the WP3 period.

5.3.2 Analysis and recommended adjustments

Drivers

North East Water has designed its WP3 water main replacement program predominantly using theoretical asset lives. Asset conditions, performance and/or historical maintenance data have also been considered, however North East Water's Asset Management System is still being developed and current estimates are not based on information with a high degree

² North East Water (2012), *Water Mains Replacement Strategy 2014-2018*, October 2012

of accuracy. Current water asset information is stored in a GIS database and 'live asset data' from the field is not yet available.

The key driver of the reactive portion of the water main replacement program is to replace any water main that has experienced three or more failures in a 12 month period.

The key driver of the proactive portion of the water main replacement program is to replace all AC and concrete mains when they reach an asset life of 60 years. High risk trunk mains with a theoretical condition grade 5 have also been identified using the asset criticality model and included in the program based on risk and probability of likely failure.

We note that despite more than doubling expenditure on water mains replacements, North East Water has proposed to relax its service standard target for unplanned water supply interruptions (per 100km) from the current five year average of 10.80 to 14.00 for WP3.

While North East Water has experienced an increase in unplanned water supply interruptions (per 100km) in 2011-12, with an increase from 11.30 to 14.80, it is not clear that this represents a persistent trend. The 2011-12 result was heavily influenced by a single event (failure of a main supply valve in the Myrtleford reticulation system leading to loss of supply to a large section of the town).

Recommendation

In our draft report, we noted that with the exception of the high-risk assets identified by North East Water (high risk trunk mains and galvanised iron pipes) we held the view that North East Water's proposed increase in expenditure had not been adequately justified by current trends in performance or proposed service standards.

As outlined in our *Overview* document, we consider that a more rigorous analysis of asset performance and the expected improvement in service from investment in proactive replacements is required to justify the change in approach.

In response to our draft report North East Water provided additional information on several significant high-risk assets that had been flagged for delivery in WP3, amounting to an additional \$1.2m over the WP3 period. With respect to these additional assets, we consider that North East Water's expenditure allowance should include the following assets, which have been identified as high-risk:

- Wangaratta Philipson St
- Tallangatta Raw Water Main
- Mount Beauty High Plains Road.

Capital expenditure for these mains amounts to an additional \$0.64m above the total amount recommended in our draft report.

In summary, we recommend that North East Water's expenditure on the Water Main Replacement Program be reduced to the historical average, with an additional allowance to replace high-risk trunk mains and galvanised iron pipes. This adjustment is shown in Table 5-2 below.

Table 5-2 Proposed and recommended expenditure for Water Main Replacement Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Water Main Replacement Program	Proposed	1.87	1.87	1.87	1.87	1.87	9.33
	Recommended	1.35	1.35	1.35	1.35	1.35	6.75
	Net change	-0.52	-0.52	-0.52	-0.52	-0.52	-2.58

5.4 Sewer Main Replacement Program

5.4.1 Business proposal

North East Water has a rolling asset management program used to monitor, maintain and replace ageing or failed sewer mains. North East Water has proposed an average spend of \$1.38m per annum for the WP3 period, compared to an historical average spend of \$1.15m per annum in the WP2 period.

Key drivers

The key driver of the program is asset renewal. North East Water has advised that a large percentage of its sewer mains are approaching the end of their useful lives, asset conditions have deteriorated, and this risk may limit the ability to maintain service levels.

North East Water has further advised that expenditure has increased from WP2 to accommodate a more proactive sewer main replacement program. Traditionally this program has only included expenditure for reactive works.

Program Description

The sewer main asset management strategy is based on the following principles:

- CCTV inspection and reports are conducted annually for the purposes of monitoring and assessing pipe and manhole conditions
- All pipes and manholes identified as extremely high risk shall be included in the annual CCTV inspection and condition assessment program
- All pipes which have surpassed their assigned service life and have been assessed as extremely high risk shall be rehabilitated or replaced
- Rehabilitate or replace all pipes when the asset performance failure threshold has been reached
- Prioritise the replacement order of sewer mains and manholes in accordance with the results produced by the sewer network criticality model³

Proposed costs and timing

The program consists of a combination of cyclical sewer main rehabilitation/replacement, receiving manhole rehabilitation, annual CCTV sewer main monitoring and sewer rising main improvement opportunities.

The costs were developed using an estimated replacement cost for different types of sewer main diameters and materials. The replacement cost estimates were based on past experience and allowed for overhead costs and contingency. Contingency was included because North East Water has found that even with historical information the actual cost to replace a sewer main varies depending on the specific site constraints and market conditions. Expenditure is evenly spread over the WP3 period.

5.4.2 Analysis and recommended adjustments

Drivers

North East Water has designed its long-term sewer main replacement program predominantly using theoretical asset lives, however a large majority of mains prioritised for the WP3 program are rated as high-risk assets. We recognise that asset conditions, performance and/or historical maintenance data have also been considered, however North

³ North East Water (2012), *Sewer Main Asset Management Strategy 2014 – 2018*, October 2012

East Water's Asset Management System is still being developed and current estimates are not based on information with a high degree of accuracy. Current sewer asset information is stored in a GIS database and 'live asset data' from the field is not yet available.

We also note that despite proposing a 21.41% increase in expenditure for WP3, all of North East Water's proposed sewerage service standards are either staying the same or declining.

North East Water's sewerage service performance appears to have improved during WP2, except for an unusual result in 2011-12 when 38 customers experienced more than 3 blockages in one year. The average performance over the second regulatory period before 2011-12 was zero customers experiencing more than 3 blockages in one year. North East Water has proposed to relax this service standard for WP3 to 30.

Sewerage blockages (per 100km) have decreased each year from 12.00 in 2008-09 to 9.21 in 2011-12. This improvement has been attributed to changed environmental conditions. North East Water has proposed to relax this service standard for WP3 to 12.00.

Recommendation

In our draft report, we noted that with the exception of the high-risk assets identified by North East Water, we were of the view that North East Water's proposed increase in expenditure had not been adequately justified by current performance trends or proposed service standards. As outlined in our Overview document, we consider that a more rigorous analysis of asset performance and the expected improvement in service from investment in proactive replacements is required to justify the change in approach. Therefore, we recommended that North East Water's expenditure on the Sewer Main Replacement Program be reduced to the historical average of \$1.15m per annum.

In response to our draft report, North East Water provided additional information on several significant high-risk assets that had been flagged for delivery in WP3 which have been identified as high-risk. Capital expenditure for these assets amounts to an additional \$1.15m above the total amount recommended in our draft report.

While we have some reservations about the linkage between North East Water's WP3 sewer main replacement program and current performance trends, we recommend that expenditure remain unchanged on the basis of evidence that the program has been prioritised to replace high-risk assets with a strong likelihood of failure.

As outlined in our *Overview* document, we advise North East Water to implement a more rigorous analysis of sewer asset performance and the expected improvement in service from investment in proactive replacements in the future.

Table 5-3 Proposed and recommended expenditure for Sewer Main Replacement Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Sewer Main Replacement Program	Proposed	1.38	1.38	1.38	1.38	1.38	6.90
	Recommended	1.38	1.38	1.38	1.38	1.38	6.90
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.5 Bright Water Treatment Plant

5.5.1 Business proposal

The Bright Water Treatment Plant upgrade (\$6.87m) involves the construction of a new clear water storage, associated upgrade works to comply with the existing Safe Drinking Water Regulations and a temporary treatment plant.

The key driver of this project is compliance. The water supply source for Bright, Porepukah and Wandiligong will change location to the new Bright Off-Stream storage site to ensure reliability of supply. This change gives North East Water an opportunity to relocate its treatment facilities as the existing Bright Water Treatment Plant has reached capacity and the risks of drinking water quality non-compliance are high.

5.5.2 Analysis and recommended adjustments

North East Water has taken a prudent approach to addressing the existing capacity limitations and drinking water quality risks at the existing water treatment plant by proposing to relocate the facility to the new Off-Stream Storage site. The existing water treatment plant contains a single treatment barrier and moving to the new site will ensure a multiple barrier approach and ensure that North East Water is in compliance with the existing Safe Drinking Water Regulations.

The relocated treatment plant may prove to have sufficient operational capacity for water supply and defer the need for a new permanent DAFF plant. North East Water has taken a prudent approach by proposing to install a temporary plant rather than construct a permanent plant which may not be required.

Due to the nature of the site, the Bright Off-Stream Storage project will need to be substantially completed before construction can begin on the new WTP. This staging requirement is appropriately reflected in the proposed capital program.

While we have some reservations about the project, we have not recommended any changes to the expenditure or timing proposed by North East Water.

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

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Bright Water Treatment Plant	Proposed	0.16	2.26	0.77	2.34	1.34	6.87
	Recommended	0.16	2.26	0.77	2.34	1.34	6.87
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.6 Bright Off-Stream Storage

5.6.1 Business proposal

The Bright Off-Stream Storage project (\$6.82m) involves the construction of a new 520ML earthen storage near Bright which will allow the harvesting of water during high flow periods and remove the need for river extractions during critical low flow periods.

The key driver of this project is growth. A new Off-Stream Storage is required to increase the reliability of the supply for Bright, Porepukah and Wandiligong. Bright experiences large demands during peak periods and this is forecast to increase in the future. The storage location has been chosen to maximise the use of gravity for the town supply which will also alleviate existing non-compliance issues at the treatment plant.

5.6.2 Analysis and recommended adjustments

The Bright Off-Stream Storage project has experienced lengthy delays due to complications with the site selection in 2011-12. The project budget has also undergone a number of revisions to account for an increase in the storage size from 360ML to 520ML and additional pipeline lengths due to selection of a more remote location.

Project stakeholders have recently approved the preferred site and the land has been re-zoned. The project will now proceed to the tendering stage with contract award and construction commencement proposed for February 2013. The engineering design report completed by GHD estimates a 12 month construction period which is aligned with the staging in the capital program for 2013-14.

There is significant pressure to complete this project as soon as possible so that the Bright water treatment plant upgrade works can commence. Given that all planning approvals have been received, a 12 month construction period is possible for a project of this size.

We have not recommended any changes to the expenditure or timing proposed for this project.

Table 5-5 Proposed and recommended expenditure for Bright Off-Stream Storage (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Bright Off-Stream Storage	Proposed	6.82	0.00	0.00	0.00	0.00	6.82
	Recommended	6.82	0.00	0.00	0.00	0.00	6.82
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.7 Sewer Above Ground Asset Replacements Program

5.7.1 Business proposal

North East Water has a rolling asset management program used to monitor, maintain and replace ageing or failed above ground sewer assets. North East Water has proposed an average spend of \$1.12m per annum for the WP3 period.

Key drivers

The key driver of the program is asset renewal. North East Water has advised that a large percentage of its above ground sewer assets are approaching the end of their useful lives, asset conditions have deteriorated, and this risk may limit the ability to maintain service levels.

Program Description

North East Water's water above ground asset management strategy sets out the program methodology which involves a three tiered approach to determining the need for replacement, renewal or continued maintenance.

The process for determining the need to renew, replace or maintain water above ground assets may have a fixed or premature starting point. A fixed starting point is when the useful life of an asset has expired. A premature starting point can occur when any one or more of the qualifying criteria is met: i.e., useful life expired, economic option, total failure, sustainability option, option redundant, capacity intolerant, technology redundant. In any case the review process measures, evaluates and prioritises options based on asset criticality.⁴

⁴ North East Water (2012), *Waste Water Above Ground Asset Replacements Strategy 2014 – 2018*, September 2012

Proposed costs and timing

The costs were developed using an estimated replacement cost for different types of above ground sewer assets. The replacement cost estimates were based on past experience and allowed for overhead costs. A single contingency allowance of 12% has been applied to the total program value.

In addition to the normal program of works, North East Water identified \$2.23m in additional projects to be included in the above ground sewer asset replacement program, with nominal costs included for proactive replacement of sewerage pump stations, decommissioning redundant waste water sites and miscellaneous replacements at the West Wodonga Waste Water Treatment Plant site

5.7.2 Analysis and recommended adjustments

We are of the view that North East Water's proposed increase in expenditure has not been adequately justified by current performance trends or proposed service standards. In particular, it appears as though the proposed expenditure for the program is largely determined with reference to asset lives, rather than clear evidence of asset criticality.

Asset conditions, performance and/or historical maintenance data have been considered, however strategy notes that condition assessments have been limited and are at an early stage of development.

We support North East Water's approach to identifying specific assets and asset classes that it considers need to be targeted in the WP3 program, however, further information on the criticality of these assets is required.

We recommend that North East Water's expenditure on the Sewer Above Ground Asset Replacement Program be reduced to the historical average of \$0.65m per annum. This adjustment is shown in Table 5-6 below.

Table 5-6 Proposed and recommended expenditure for Sewer Above Ground Asset Replacements Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Sewer Above Ground Asset Replacements Program	Proposed	1.12	1.12	1.12	1.12	1.12	5.60
	Recommended	0.65	0.65	0.65	0.65	0.65	3.25
	Net change	-0.47	-0.47	-0.47	-0.47	-0.47	-2.35

5.8 Water Above Ground Asset Replacements Program

5.8.1 Business proposal

North East Water has a rolling asset management program used to monitor, maintain and replace ageing or failed above ground water assets, which include mechanical, electrical, measuring, civil, structural, buildings and other assets. North East Water has proposed an average spend of \$3.79m per annum on the Water Above Ground Asset Replacements Program for the WP3 period.

Key drivers

The key driver of the program is asset renewal. North East Water has advised that a significant percentage of its above ground water assets are approaching (or have exceeded) the end of their useful lives.

Program Description

North East Water's Water Above Ground Asset Management strategy sets out the program methodology which involves a three tiered approach to determining the need for replacement, renewal or continued maintenance.

The process for determining the need to renew, replace or maintain water above ground assets may have a fixed or premature starting point. A fixed starting point is when the useful life of an asset has expired. A premature starting point can occur when any one or more of the qualifying criteria is met: i.e., useful life expired, economic option, total failure, sustainability option, option redundant, capacity intolerant, technology redundant. In any case the review process measures, evaluates and prioritises options based on asset criticality.⁵

Proposed costs and timing

North East Water has designed its WP3 above ground water asset replacement program based on historical program cost and made an extra allowance for proactive replacement of electrical switchboards. Budgets proposed for the WP3 period are based on recent average annual expenditure for water assets. North East Water has noted that the proposed budget of \$3.79m for the WP3 period is less than the approved budget of \$4.50m for the WP2 period.

5.8.2 Analysis and recommended adjustments

We are of the view that North East Water's proposed increase in expenditure has not been adequately justified by current performance trends or proposed service standards. In particular, it appears as though the proposed expenditure for the program is largely determined with reference to asset lives, rather than clear evidence of asset criticality.

We recommend that North East Water's expenditure on the Water Above Ground Asset Replacement Program be reduced to the historical average of \$0.60m per annum. This adjustment is shown in Table 5-7 below.

Table 5-7 Proposed and recommended expenditure for Water Above Ground Asset Replacements Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Water Above Ground Assets Replacement Program	Proposed	0.76	0.76	0.76	0.76	0.76	3.80
	Recommended	0.60	0.60	0.60	0.60	0.60	3.00
	Net change	-0.16	-0.16	-0.16	-0.16	-0.16	-0.80

5.9 Yackandandah Reclaimed Water Management

5.9.1 Business proposal

North East Water's 2010 Wastewater Strategy identified that the current 32ML winter storage at Yackandandah has insufficient capacity to manage 90th percentile wet years and needs to be increased. For North East Water to become compliant with the discharge requirements outlined in its existing EPA Corporate License, the winter storage capacity is required to increase to 60ML.

⁵ North East Water (2012), *Water Above Ground Asset Replacements Strategy 2014-2018*, September 2012

The preferred option for Yackandandah (\$3.46m) involves the purchase of an additional 35 hectares of irrigation area, construction of a new maturation lagoon, decommissioning of the existing lagoon, a new rising 4.5km rising main to potential irrigation sites proposed within the Yackandandah Wastewater System Plan 2010 and a pump station to ensure delivery of the required irrigation flows.

5.9.2 Analysis and recommended adjustments

Based on the information provided by North East Water, we have confirmed that the key driver for this project is compliance. North East Water conducted non-routine discharge of treated wastewater to the Yackandandah Creek under Section 30A of the Environmental Protection Act (1970) during the period August 18 to December 16, 2011.

North East Water has undertaken a detailed analysis of the project to determine the most efficient solution to comply with existing obligations. Provisional land areas and winter storage sizes have been based on preliminary analysis, and will require further confirmation throughout project's detailed design stages.

Construction is proposed for 2015-16 which allows sufficient time for further planning investigations and detailed design. An appropriate contingency of 20% has been allowed for given the maturity of this project.

We have not recommended any changes to the expenditure or timing proposed for this project.

Table 5-8 Proposed and recommended expenditure for Yackandandah Reclaimed Water Management (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Yackandandah Reclaimed Water Management	Proposed	0.09	0.52	2.33	0.52	0.00	3.46
	Recommended	0.09	0.52	2.33	0.52	0.00	3.46
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.10 Major and Minor Plant Renewals Program

5.10.1 Business proposal

North East Water has a rolling corporate expenditure program to allow for major and minor plant renewals. The key drivers of this program are to maintain existing service levels and to reduce corporate operating costs.

This expenditure generally consists of forecast vehicle and construction machinery replacement costs.

North East Water has proposed an average spend of \$0.60m per annum for the WP3 period, compared with an historical average spend of \$1.57m per annum in the WP2 period. This reduction has been influenced by a decrease in forecast vehicle replacement costs.

5.10.2 Analysis and recommended adjustments

A detailed breakdown of this expenditure has been provided by North East Water. No unusual items are present in the detailed breakdown. Cost estimates are based on the historical costs.

We have not recommended any changes to the expenditure or timing proposed for this project.

Table 5-9 Proposed and recommended expenditure for Major and Minor Plant Renewals Program (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Major and Minor Plant Renewals Program	Proposed	0.60	0.60	0.60	0.60	0.60	3.02
	Recommended	0.60	0.60	0.60	0.60	0.60	3.02
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.11 Servicing Unserviced Communities (small towns)

5.11.1 Business proposal

This project involves the construction of a new sewerage system (\$2.71m) for the township of Moyhu. The key driver is the identification of Moyhu as a priority town under the State Government's Small Towns Water Quality Fund, determined by the Department of Sustainability and Environment.

Wastewater services in Moyhu are currently provided by individual on-site treatment facilities, predominantly ageing septic tanks. Discharges from Moyhu's septic tanks, along with the township's sullage discharges, pose both public health and environmental risks, as well as having a negative impact (visual, odour) on the amenity of the township.

Moyhu has received a grant of \$1m to implement the project leaving the balance to be shared by the Rural City of Wangaratta (RCoW), North East Water and the Moyhu community. The estimated remaining cost for North East Water in WP3 is \$2.71m.

Low pressure and modified gravity reticulation options were both considered and evaluated by North East Water and Wangaratta City Council. The options modelling identified the modified gravity reticulation network as the preferred option, since costs for the low pressure system were estimated to be 60% higher due to mechanical maintenance requirements.

5.11.2 Analysis and recommended adjustments

The need for North East Water to provide sewerage services to the township of Moyhu is clear based on correspondence with the DSE. This project has been scoped using a business case in 2010 and detailed analysis of options in later years. North East Water has chosen the most efficient engineering solution based on the topography of the township and estimated operational costs.

The project is now ready to proceed to the detailed design and community consultation stage, which is appropriately reflected by the staging proposed in the capital program. An appropriate contingency of 20% has been allowed for given the maturity of this project.

We have not recommended any changes to the expenditure or timing proposed for this project.

Table 5-10 Proposed and recommended expenditure for Servicing Unserviced Communities (small towns) (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Servicing Unserviced Communities (small towns)	Proposed	1.39	1.32	0.00	0.00	0.00	2.71
	Recommended	1.39	1.32	0.00	0.00	0.00	2.71
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.12 Wangaratta Wastewater Treatment – Stage 1 Upgrade

5.12.1 Business proposal

Wangaratta Wastewater Treatment Plant has a number of infrastructure renewal and operational improvement needs to alleviate existing discharge compliance issues and support long-term Class C treatment. Key issues include lack of septage receival unit, under capacity inlet works, DAF renewal needs and urgent need for desludging work.

The proposed expenditure for WP3 is \$2.15m, with construction expected to be completed during the final year of WP3. The proposed works are for Stage 1 of a preferred long term option to move towards full re-use/elimination of the routine river discharge.

A range of wastewater management options have been previously considered for the Wangaratta Wastewater Treatment Plant. These options, and various combinations, have been re-assessed with consideration of the concurrent drivers for environmental compliance and infrastructure renewal.

5.12.2 Analysis and recommended adjustments

The selected option demonstrates that North East Water is committed to reducing the environmental risk and complying with its existing EPA Corporate License by increasing the reliability of the treatment standard, while maintaining satisfactory operation and performance of existing processes.

North East Water is acting prudently by withholding any commitment to a higher upgrade until there is sufficient evidence to do so. The scope of renewal works have been based on preliminary analysis, and will require further confirmation throughout project's detailed design stages. An appropriate contingency of 20% has been allowed for given the maturity of this project.

We have not recommended any changes to the expenditure or timing proposed for this project.

Table 5-11 Proposed and recommended expenditure for Wangaratta Wastewater Treatment – Stage 1 Upgrade (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Wangaratta Wastewater Treatment – Stage 1 Upgrade)	Proposed	0.00	0.04	0.09	0.61	1.41	2.15
	Recommended	0.00	0.04	0.09	0.61	1.41	2.15
	Net change	0.00	0.00	0.00	0.00	0.00	0.00

5.13 Water Quality Improvement Projects

5.13.1 Business proposal

In addition to the Top 10 Major Projects, we have also considered a collection of water quality improvement projects proposed by North East Water.

North East Water has forecast to spend \$6.18 in WP3 to meet existing and future Safe Drinking Water Regulations. The projects will be implemented at 12 separate sites across the region and within 14 separate projects.

The majority of the proposed works involve the addition of multiple barriers at treatment plants to comply with the existing Safe Drinking Water Regulations. However, two projects contain an additional allowance in preparation for the 2015 changes to the Safe Drinking Water Regulations.

The proposed expenditure for water quality improvement projects in WP3 are listed in Table 5-12 below:

Table 5-12 Water Quality Improvement Projects proposed for WP3 (\$m, 01/01/2013)

Township	Project	Cost
Beechworth	Optimise coagulation	0.501
Bright	Multiple barriers	0.600
Eskdale		
Moyhu	Multiple barriers	0.427
Walwa		
Goorambat	Multiple barriers	0.316
Harrietville	Multiple barriers	0.602
Mount Beauty	Reservoir works	0.125
Oxley	Multiple barriers	0.692
Wahgunyah	Multiple barriers	1.153
Wangaratta	Multiple barriers	0.551
Wodonga	Pre-alkalinity	0.165
Water Distribution Compliance		0.501
Water System Improvements		0.551
Total proposed expenditure for water quality improvement		6.184

5.13.2 Analysis and recommended adjustments

We have reviewed correspondence from the Department of Health to North East Water dated 3 August, 2012 which offers support for the proposed projects at Beechworth, Bright, Eskdale, Goorambat, Harrietville, Mount Beauty, Moyhu, Oxley, Wahgunyah, Walwa, Wangaratta and Wodonga water treatment plants. It was noted by DoH that these projects will address existing water quality risks through the construction of additional treatment barriers. In our view, these works are essential to meet the existing Safe Drinking Water Regulations and are justifiable.

In our draft report, we noted that based on the information provided by North East Water, it appeared that the Water Distribution Compliance and Water System Improvement projects had been designed in anticipation of the 2015 changes to the Safe Drinking Water Regulations. 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.

Subsequent to our draft report, North East Water provided more information on the Water Distribution Compliance and Water System Improvement projects. The expenditure is also required for the installation of instrumentation equipment, flexibility to adapt to change during extreme weather conditions and trialling new treatment technologies. However, upon reviewing the additional information provided by North East Water we remain of the view that

these allowances are not required to meet existing compliance obligations, but rather appear to have been identified as a contingency based on uncertainty about future conditions.

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. We also recommend removal of other expenditure made in anticipation of uncertain future operating conditions. This adjustment includes the removal of expenditure proposed for the Water Distribution Compliance and Water System Improvement projects. This adjustment is shown in Table 5-13 below.

Table 5-13 Proposed and recommended expenditure for Water Quality Improvement Projects (\$m, 01/01/2013)

		2013-14	2014-15	2015-16	2016-17	2017-18	Total WP3
Water Quality Improvement	Proposed	1.23	1.23	1.23	1.23	1.23	6.15
	Recommended	1.03	1.03	1.03	1.03	1.03	5.13
	Net change	-0.20	-0.20	-0.20	-0.20	-0.20	-1.02

5.14 Summary of our recommendations

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

Table 5-14 North East 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		
Water Main Replacement Program	Proposed	1.87	1.87	1.87	1.87	1.87	9.33
	Recommended	1.35	1.35	1.35	1.35	1.35	6.75
	Net change	-0.52	-0.52	-0.52	-0.52	-0.52	-2.58
Sewer Main Replacement Program	Proposed	1.38	1.38	1.38	1.38	1.38	6.90
	Recommended	1.38	1.38	1.38	1.38	1.38	6.90
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bright Water Treatment Plant	Proposed	0.16	2.26	0.77	2.34	1.34	6.86
	Recommended	0.16	2.26	0.77	2.34	1.34	6.86
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Bright Off-Stream Storage	Proposed	6.82	0.00	0.00	0.00	0.00	6.82
	Recommended	6.82	0.00	0.00	0.00	0.00	6.82
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Sewer Above Ground Asset Replacements Program	Proposed	1.12	1.12	1.12	1.12	1.12	5.62
	Recommended	0.65	0.65	0.65	0.65	0.65	3.25
	Net change	-0.47	-0.47	-0.47	-0.47	-0.47	-2.37
Water Above Ground Asset Replacements Program	Proposed	0.76	0.76	0.76	0.76	0.76	3.80
	Recommended	0.60	0.60	0.60	0.60	0.60	3.00
	Net change	-0.16	-0.16	-0.16	-0.16	-0.16	-0.80
Yackandandah Reclaimed Water	Proposed	0.09	0.52	2.33	0.52	0.00	3.46
	Recommended	0.09	0.52	2.33	0.52	0.00	3.46

Capital expenditure item		Water Plan forecast					Total WP3
		2013-14	2014-15	2015-16	2016-17	2017-18	
Management	Net change	0.00	0.00	0.00	0.00	0.00	0.00
	Proposed	0.60	0.60	0.60	0.60	0.60	3.02
Major and Minor Plant Renewals Program	Recommended	0.60	0.60	0.60	0.60	0.60	3.02
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Servicing Unserviced Communities (small towns)	Proposed	1.39	1.32	0.00	0.00	0.00	2.71
	Recommended	1.39	1.32	0.00	0.00	0.00	2.71
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Wangaratta Wastewater Treatment – Stage 1 Upgrade)	Proposed	0.00	0.04	0.09	0.61	1.41	2.15
	Recommended	0.00	0.04	0.09	0.61	1.41	2.15
	Net change	0.00	0.00	0.00	0.00	0.00	0.00
Water Quality Improvement	Proposed	1.23	1.23	1.23	1.23	1.23	6.15
	Recommended	1.03	1.03	1.03	1.03	1.03	5.15
	Net change	-0.20	-0.20	-0.20	-0.20	-0.20	-1.00
Total proposed		16.18	16.39	13.61	16.57	12.29	75.04
Recommended capital expenditure		14.83	15.04	12.26	15.22	10.94	68.30
Recommended adjustments from proposed		-1.35	-1.35	-1.35	-1.35	-1.35	-6.74

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.