

# **Expenditure forecast review State Water Corporation**

**Report to the ACCC and under Part 6  
of the Water Charge (Infrastructure)  
Rules 2010**

**Final report  
20 December 2013**



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# Executive Summary

This report presents the findings of our review of the operating (opex) and capital expenditure (capex) proposed by State Water Corporation (State Water) for the 2014-15 to 2016-17 regulatory period.

This review is an input into the Australian Competition and Consumer Commission's (ACCC) consideration of approval or determination of State Water's regulated charges for the next regulatory period. Under the Water Charge (Infrastructure) Rules, the ACCC has responsibility for approving or determining the regulated charges levied by State Water in the Murray-Darling Basin for the three-year regulatory period commencing 1 July 2014.

The process for conducting our review involves the following key stages:

- A desktop review of the draft State Water submission
- Preparation of an additional information request to State Water
- A four-day field visit to State Water in August 2013 to further our understanding of State Water's operating environment and key infrastructure and make further enquiries into details of the submission
- Detailed analysis of operating and capital expenditure forecasts including seeking of additional information from State Water
- Preparation of a draft report, which was provided to State Water on 18 October
- A workshop with State Water on 29 October to discuss the draft report
- A review of State Water's response to our draft report
- A final report provided to the ACCC (this report) for publication on its website as a public document.

Where we have not been satisfied that the levels of opex or capex proposed by State Water are prudent and efficient, we have outlined the reasons and provided recommendations on alternative forecasts. We have not been asked to review or comment specifically on the suitability of the cost allocation method to customers or tariff design however an understanding of these matters is necessary to undertake our review. Therefore we have included brief comments on these matters.

## Operating expenditure

The table below summarises the adjustments we have made to State Water's proposed opex forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

Overall, we have recommended small increases in opex compared to current levels, although not to the extent sought by State Water. Although the general scope of State Water's activities is generally unchanged, we accept that some opex increases are necessary to meet additional regulatory requirements and improve corporate systems.

**Table E1: State Water's proposed operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

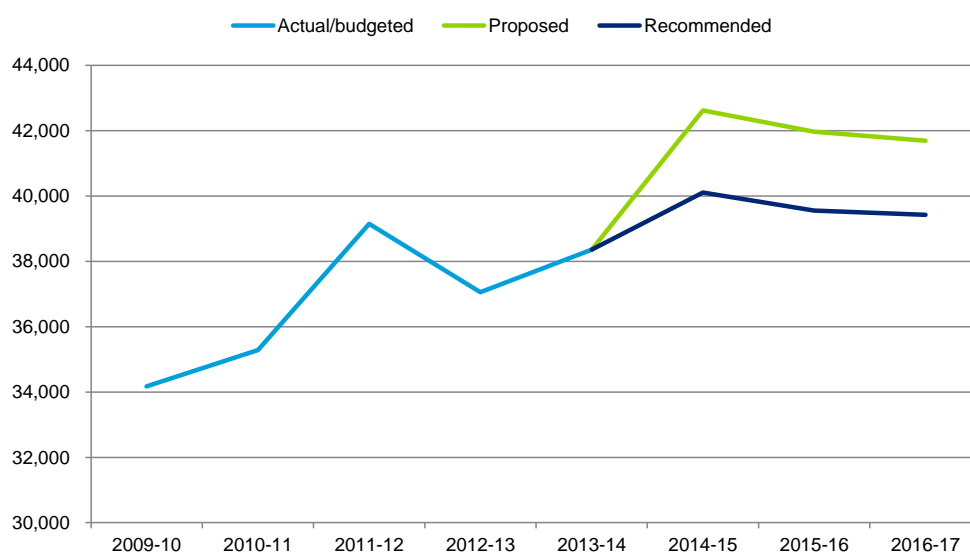
All valleys	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	37,053	38,358	42,619	41,965	41,687	<b>126,271</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-919	-765	-567	<b>-2,252</b>

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All valleys	Current period		Next regulatory period			
	2012-13	2013-14	2014-15	2015-16	2016-17	Total
Corporate and indirect costs			-248	-207	-153	<b>-608</b>
<b>Activities</b>						
Customer Support			0	0	0	<b>0</b>
Customer Billing			0	0	0	<b>0</b>
Metering and Compliance			0	0	0	<b>0</b>
Water Delivery and Other Operations			-176	-181	-212	<b>-569</b>
Flood Operations			0	0	0	<b>0</b>
Hydrometric Monitoring			0	0	0	<b>0</b>
Water Quality Monitoring			-260	-239	-239	<b>-738</b>
Corrective Maintenance			-325	-295	-298	<b>-918</b>
Routine Maintenance			-170	-170	-170	<b>-510</b>
Asset Management and Planning			0	0	0	<b>0</b>
Dam Safety Compliance			0	0	0	<b>0</b>
Environmental Planning and Protection			0	-82	0	<b>-82</b>
Insurance			0	0	0	<b>0</b>
Corporate Systems and Internal Projects			-269	-191	-206	<b>-667</b>
<b>Efficiency savings</b>			-146	-284	-419	<b>-849</b>
<b>Total adjustments (\$)</b>			<b>-2,514</b>	<b>-2,414</b>	<b>-2,264</b>	<b>-7,192</b>
<b>Total adjustments (%)</b>			<b>-6%</b>	<b>-6%</b>	<b>-5%</b>	<b>-6%</b>
<b>Recommended operating expenditure</b>			<b>40,105</b>	<b>39,551</b>	<b>39,423</b>	<b>119,079</b>
<b>Metering Service Charge efficiency saving</b>			-49	-116	-195	<b>-360</b>

The below figure shows State Water's actual and budgeted opex from 2007-08 to 2013-14, its proposed opex over the next regulatory period and our recommend opex.

**Figure E1: State Water's actual, budgeted and proposed operating expenditure and our recommended expenditure (\$2013-14, \$'000)**



Our recommended opex of \$119.1m over the 2015-17 regulatory period, or \$39.7m per annum, on average, is:

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- \$7.2m, or 6%, less than State Water's proposed opex of \$126.3m
- 7% higher than State Water's actual opex of \$37m in 2012-13.

## Capital expenditure

The table below summarises the adjustments we have made to State Water's proposed capital expenditure forecasts and as a result our recommended capital expenditure over the 2014-17 regulatory period. In general we are satisfied that estimated costs are reasonable, however we have removed some projects, reduced contingencies for the Environmental Planning and Protection program, and adjusted the timing of the program.

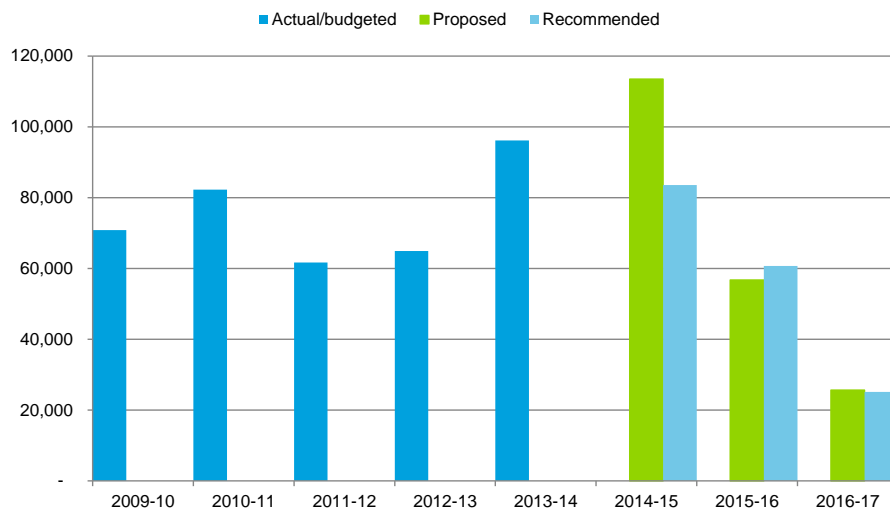
**Table E2: State Water's proposed capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	64,914	96,117	113,508	56,726	25,646	<b>195,881</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-72	-292	-94	<b>-459</b>
Oberon			-145	-470	-5,388	<b>-6,004</b>
CARMS			-4,543	-4,555	-4,555	<b>-13,653</b>
Crooked Creek Water Efficiency Project			-3,456	0	0	<b>-3,456</b>
Contingencies			-1,749	-695	-490	<b>-2,933</b>
Timing adjustments			-20,000	10,000	10,000	<b>0</b>
<b>Total adjustments (\$)</b>			<b>-29,965</b>	<b>3,988</b>	<b>-527</b>	<b>-26,504</b>
<b>Total adjustments (%)</b>			<b>-26%</b>	<b>7%</b>	<b>-2%</b>	<b>-14%</b>
<b>Recommended capital expenditure</b>			<b>83,543</b>	<b>60,714</b>	<b>25,119</b>	<b>169,376</b>

Note: The reallocation of Rydal Dam inlet and outlet works expenditure from Renewals and Replacements to Dam Safety Compliance has no net impact on State Water's proposed capex and therefore not been shown in this table.

The figure below shows State Water's actual and budgeted capex from 2007-08 to 2013-14, its proposed capex over the next regulatory period and our recommend capex.

**Figure E2: State Water’s actual, budgeted and proposed capital expenditure and our recommended expenditure (\$2013-14, \$’000)**



Our recommended capex of \$169.4m over the 2015-17 regulatory period is \$26.5m, or 14%, less than State Water’s proposed capex of \$195.9m, and 19% lower than State Water’s actual capex of \$208.9m between 2010-11 and 2012-13.

# 1 Introduction

This section outlines the rationale and scope of this review, and provides an overview of State Water Corporation.

## 1.1 Background

This review provides advice to the Australian Competition and Consumer Commission (ACCC) on the prudent and efficient costs of State Water Corporation over the next regulatory period (2014-2017) and will be an input into consideration of approval or determination of State Water's regulated charges for the next regulatory period. The legislative instrument governing the ACCC's approval or determination of regulated charges for State Water is the *Water Charge (Infrastructure) Rules 2010 (WCIR)*.

### **Water Charge (Infrastructure) Rules (WCIR)**

Under the WCIR, the ACCC has responsibility for approving or determining the regulated charges levied by State Water in the Murray-Darling Basin for the three-year regulatory period commencing 1 July 2014. Previously, the regulation of State Water was solely the responsibility of the Independent Pricing and Regulatory Tribunal (IPART).

The overarching legislation for the WCIR is the *Water Act 2007 (Cth)* (the Water Act) which, among other things, provides the Minister for the Environment (the Minister) with the role of making water charge rules.

The Water Act builds on earlier reform initiatives including the National Water Initiative (NWI) and creates new institutional and governance arrangements to address the sustainability and management of water resources in the Murray-Darling Basin (MDB). The purpose of the WCIR is to address the various issues that arise from operators having market power as natural monopoly service providers, through improving the transparency of charges and introducing a more consistent approach to pricing (across Basin jurisdictions) which promotes efficient use and investment in water infrastructure and efficiency of water markets.

The WCIR provides for the regulation of water infrastructure fees and charges levied by bulk water and irrigation infrastructure operators. The WCIR outlines a three-tiered regulatory structure for infrastructure providers, from tier 1 rules (light handed approach) to tier 2 (oversight of procedures for determining charges) and tier 3 (direct regulatory oversight of charges). The level of regulatory oversight for each operator corresponds to their ownership and size (i.e. non-member owned and/or large service providers are subject to more direct regulation). State Water falls in tier 3 as it is a large infrastructure operator that is not member owned.

The process for the determination of State Water's regulated charges, which is set out in Part 6 of the WCIR, requires State Water to submit to the regulator a pricing application ("the submission") at least 14 months prior to the commencement of the new regulatory period. The submission must set out, among other things, State Water's forecasts over the upcoming regulatory period of its operating and capital expenditure, the infrastructure service standards it expects to deliver and the regulated charges it intends to levy.

### **Review of operating and capital expenditure**

Under the WCIR (Clause 29) the ACCC must not approve the regulated charges set out in State Water's submission unless it is satisfied that, among other things, State Water's total forecast revenue for the regulatory period is reasonably likely to meet the prudent and efficient costs of providing infrastructure services in that regulatory period.

The ACCC's document *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010 (the pricing principles)* provides a high level approach to

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assessment of prudence and efficiency of operating and capital expenditure. The Pricing principles state that:<sup>1</sup>

In making an assessment of the prudent and efficient **operating expenditure** (opex) for the next regulatory period, the regulator must assess:

- *The prudence and efficiency of operating expenditure in the previous regulatory period*
- *The reasons and evidence supporting changes to service standards in the next regulatory period*
- *The reasons and evidence supporting changes to operating expenditure in the next regulatory period*
- *Reasonable productivity improvements in providing services over the next regulatory period.*

*Where relevant, a regulator must compare and take into account operating expenditure of similar businesses.*

*Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred in this period.*

In making an assessment of the prudent and efficient **capital expenditure** (capex) for the next regulatory period, the regulator must assess:

- *The prudence and efficiency of capital expenditure in the previous regulatory period (where relevant to proposed capital expenditure in the next regulatory period)*
- *The reasons and evidence supporting the commencement of new major capital expenditure projects in the next regulatory period, including whether such projects are consistent with efficient long term expenditure on infrastructure services.*
- *The reasons and evidence supporting levels of capital expenditure in the next regulatory period*
- *Whether the timeframe for delivering the proposed capital expenditure program is reasonable, having regard to the operator's delivery of major projects in the past*
- *Whether the asset management and planning framework of the operator reflects best practice.*

*Forecasts must be based on reasonable assumptions of the efficient costs likely to be incurred across the regulatory period.*

*Subject to confidentiality, any external review of an operator's proposed capital expenditure must be made public on the regulator's website.*

The ACCC has engaged Deloitte to provide an external review and advise on the prudence and efficiency of opex and capex forecasts made by State Water for the 2014-17 regulatory period. In undertaking this work we have sub-contracted some aspects of the review (including in particular the capex review) to specialist engineers Aurecon and Bird Consulting Group.

## 1.2 Scope and approach

This chapter sets out the scope and approach of our review including:

- The State Water valleys to be included
- The nature of our advice
- Our definition of prudence and efficiency
- Considerations in assessing operating and capital expenditure

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<sup>1</sup> ACCC Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules, 2010 pp. 41-42

- The process for our review.

### 1.2.1 State Water valleys in scope

As the ACCC is responsible for approving or determining regulated charges in the 10 State Water valleys/schemes located in the MDB, our review pertains to these valleys/schemes only, which are: Gwydir, Lachlan, Murray, Murrumbidgee, Fish River, Border, Namoi, Macquarie, Peel and Lowbidgee.

The Hunter, North Coast and South Coast valleys, which are located outside of the MDB, will continue to be regulated by IPART.

### 1.2.2 Nature of advice

Our advice to the ACCC is an assessment of the prudence and efficiency of State Water forecast opex and capex for the 10 river valleys for the next regulatory period 2014-2017. Where we are not satisfied that the levels of opex or capex are prudent and efficient, we have outlined the reasons and provided recommendations on alternative forecasts.

We have not been asked to review or comment specifically on the suitability of the cost allocation method to customers or tariff design however an understanding of these matters is necessary to undertake our review. Therefore we have included brief comments on these matters.

### 1.2.3 Definition of prudence and efficiency

While the pricing principles provide valuable context to our review of prudence and efficiency, there is no specific guidance provided in the WCIR regarding the definition of prudence and efficiency.

Accordingly, we have set out below our definition of prudence and efficiency, having regard to our previous experience in conducting expenditure reviews as well as the approaches adopted previously by regulators conducting similar reviews.

A project or program of expenditure is prudent and efficient where:

- It is undertaken in order to meet or maintain service standards which are:
  - a.) Required by customers or a specific legislative requirement
  - b.) Mandated by government or regulatory requirement
- Represents the least long-term cost to the community of providing that service.

### 1.2.4 Our approach to assessing opex and capex

In our approach to assessing the prudence and efficiency of opex and capex we have had regard to some general matters as well as specific considerations requested by the ACCC.

#### General matters

We have had regard to the following questions when reviewing both opex and capex:

- Do proposed service standards or cost changes reflect additional obligations that are imposed by state or federal governments, other regulators, or improvements sought by customers?
- Do proposed service standards reflect customer requirements and willingness/ability to pay?
- Can the proposed changes in operating and capital expenditure be substantiated by supporting information?
- Is there evidence of a well-developed planning framework and processes that demonstrate forecasts have been determined over a planning horizon that extends beyond the forecast period?
- Has the planning framework and processes been applied with rigour throughout the organisation?

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- Are the activities undertaken to manage risks appropriate?
- Is the proposed program of expenditure deliverable over the forecast period?
- Does the demand for services appear reasonable?
- Is the business being managed and operated in accordance with accepted good industry practice?
- Is the assumed cost of inputs (e.g. energy, materials and labour) consistent with other independent forecasts?
- How do unit rates compare with those of similar projects or organisations?
- Where relevant, do forecasts reflect the latest and best estimates of exogenous factors such as wages growth, interest and exchange rates?
- Is the mix of internal versus contracted resources appropriate?

## Operating expenditure

In reviewing the prudence and efficiency of State Water's proposed opex, the ACCC has provided specific considerations for our review.

### ACCC Considerations

The ACCC has asked that we have regard to the following considerations in our review of opex:

- The historical levels of opex
- Any step changes in opex and justifications for these including timing of the step change
- The validity of the claimed need and drivers for opex step changes
- The soundness of the assumptions and methodology on which the cost forecasts for the forthcoming regulatory period are based
- The accuracy of opex forecasting relative to actual expenditure in previous regulatory periods
- Any changes in risk profile for the business (i.e. relating to forecast expenditure to remove previously accepted risk factors)
- Whether there is any scope for savings in forecast opex due to efficient trade-offs between capex and opex.

In addition the ACCC has requested that we assess the base levels of opex forecast by State Water for each regulated valley by considering:

- Whether forecasts reflect a reasonable expectation of future productivity improvements having regard to State Water's past opex (see below)
- Relevant industry benchmarks (where available) of opex to operate and maintain bulk water services infrastructure comparable to that managed by State Water (see below).

Specifically, we have been asked to also focus on opex step changes in each regulated valley that are likely to materially impact on required revenue and regulated prices for customers in the relevant regulated valley.

### Tools and approaches

The various 'tools' and approaches that can be used to examine operating costs include the use of benchmarking, consideration of changes compared to the 'base year' and consideration of productivity factors.

#### *Baseline year*

In assessing step changes to opex over the next regulatory period, we have considered changes from the baseline year of 2012-13. This year was considered the most appropriate as it represents the most

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recent year of actual expenditure (therefore preferred over 2013-14 budget as originally proposed by State Water) and is not likely to have been as materially affected by flooding per previous years. Our review also considered any large one-off costs in 2012-13 year that might have affected its suitability as a baseline year.

### *Benchmarking*

Aside from our experience in reviewing forecast costs for similar organisations, our approach to benchmarking has been to use publicly available data on other rural service providers from sources such as the latest *National Performance Report (NPR) rural water service providers* (National Water Commission, 2012), and annual reports. It should be noted that the NPR data is only partially audited and the application of definitions may vary between rural providers.

We have also had regard to a number of internal and proprietary data sets held by Deloitte, particularly in respect of corporate costs.

We note there are limitations of benchmarking in that it can be difficult to arrive at like with like comparisons due to differences in operating environments, services provided and definitions within the source data. Benchmarking, however, does provide a high level indication on whether a business is an outlier in comparison to other providers and therefore can highlight where there may be inefficiencies.

### *Productivity*

In our assessment of reasonable productivity improvements for State Water, we have had regard to:

- Productivity targets set by other regulators
- Movements in productivity across the economy
- Productivity achieved by State Water in the current regulatory period
- Our view of the general efficiency of State Water's operations and potential for improvements.

## **Capital expenditure**

In reviewing the prudence and efficiency of State Water's proposed capex, the ACCC has provided specific considerations for our review (see below). In our review we have focused on major capex projects (or in some cases a program of capital works made up of a group of smaller similar projects). We have also reviewed the capital planning and asset management framework to ensure that decisions to proceed with particular projects are appropriate.

### **ACCC Considerations**

The ACCC has asked that we have regard to the following considerations in our review of capex:

- The historical levels of capex
- Any step changes in capex and justifications for these including timing of the step changes
- How the capex forecasts take into account capital governance, risk management and other business processes that will apply to the assessment and approval by State Water of each project / program in the next regulatory period
- The appropriateness of the procurement method and engineering design for the capex projects / programs reviewed
- Assumptions on the timing of projects / programs and the likelihood of deferral
- The validity of the claimed need and drivers for the programs / projects
- The soundness of the assumptions and methodology on which the cost forecasts for the forthcoming regulatory period are based

- Any changes in risk profile for the business (e.g. relating to forecast expenditure to remove previously accepted risk factors)
- Any relevant benchmarks or trend analysis
- Whether there is any scope for savings in forecast capex due to efficient trade-offs between capex and opex.

In reviewing State Water's proposed capex the ACCC has also asked us to:

- Focus on new and ongoing capex programs and projects in each regulated valley that are likely to materially impact on required revenue and regulated prices for customers in the relevant regulated valley
- Consider the deliverability of State Water's total forecast capex having regard to:
  - Capex delivered by State Water in the current and previous regulatory periods
  - State Water's expected capex delivery capability in the next regulatory period.

### Major projects

As capex by nature is a one-off cost, capex projects need to be considered individually (or as a group of similar projects). In assessing capex we have focussed on the major individual projects in 'dam safety' and 'environmental protection' that comprise a significant proportion of the forecasts (i.e. those that incurred greater than \$4m in total over the regulatory period). In addition we have generally reviewed 'renewals and replacement', 'Lowbidgee capital works', 'water delivery and other operations' and 'corporate systems' as whole programs rather than focus on individual projects.

### 1.2.5 Process for review

The process for conducting our review involved the following key stages:

- A desktop review of the draft State Water submission
- Preparation of an additional information request to State Water
- A four-day field visit to State Water in August 2013 to further our understanding of State Water's operating environment and key infrastructure and make further enquiries into details of the submission
- Detailed analysis of operating and capital expenditure forecasts including seeking of additional information from State Water
- Preparation of a draft report, which was provided to State Water on 18 October
- A workshop with State Water on 29 October to discuss the draft report
- A review of State Water's response to our draft report
- A final report provided to the ACCC (this report) for publication on its website as a public document.

## 1.3 State Water

State Water is a statutory-owned water corporation that maintains, manages and operates major infrastructure to deliver bulk water to water users on New South Wales' regulated rivers. Its area of operations is defined in the *State Water Corporation Act 2004* as the whole of the state other than the area of operations of Sydney Water Corporation, Sydney Catchment Authority, Hunter Water Corporation and the areas of operation of any water supply authorities.

State Water is responsible for managing and operating 20 dams and more than 280 weirs and regulators to deliver water to over 6,000 customers in 14 regulated river systems (located across 11 valleys) along approximately 7,000 km of river. State Water is also responsible for the Fish River Liability limited by a scheme approved under Professional Standards Legislation.

Water Scheme, which was a government trading enterprise that operated as a bulk water supplier on the Fish River until 2005. State Water manages and operates an asset portfolio with a replacement value of around \$3.6 billion.

With long-term annual average water deliveries of around 4,600 GL, State Water is one of Australia's largest bulk water suppliers. While water deliveries during 2011-12 were around average, State Water's annual water deliveries fell as low as 1,110 GL during the recent drought years.

State Water is in the process of upgrading eight dams across the state to align with international dam safety standards. Of the \$127.3m of capital expenditure incurred in 2011-12, dam safety upgrades accounted for \$42.5m.

To perform its functions of capturing, storing and releasing water in rural NSW, State Water undertakes a range of supporting tasks, including:

- Customer support
- Customer billing
- Metering and compliance
- Water delivery and other operations
- Flood operations
- Hydrometric monitoring (this service is purchased from the NSW Office of Water)
- Water quality monitoring
- Corrective maintenance
- Routine maintenance
- Asset management planning
- Dam safety compliance
- Environmental planning and protection.

## 1.4 This report

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

- Chapter 2 provides our views on some general aspects of State Water's pricing application, including its proposed cost allocation methodology, the fixed and variable nature of costs, operating efficiency targets and its new operating licence
- Chapter 3 sets our views with respect to State Water's proposed opex, including our recommended opex over the next regulatory period
- Chapter 4 sets our views with respect to State Water's proposed capex, including our recommended capex over the next regulatory period.

## 2 Generic issues

### 2.1 Cost allocation

#### 2.1.1 State Water Corporation proposal

State Water's overhead costs are classified as either Corporate or Indirect costs.

##### Corporate costs

Corporate costs represent the costs of State Water's corporate business units, which are CEO group, Strategy & Governance, Corporate Affairs, Human Resources, Communication, Information Services, Finance and Business Services. These costs include salaries and wages, staff travel, vehicle costs, computing expenses, consultancy and professional advice and so on.

As corporate business units support the operation of the broader State Water business and cannot be charged to individual assets or projects, an approach to apportioning their costs across the business has been developed by State Water. As corporate costs are administrative in nature and thus cannot be capitalised, only opex projects are allocated a proportion of corporate costs. This involves allocating corporate costs to opex assets/projects on the basis of the direct salaries and wages (labour) costs charged to opex assets/projects.

This process requires the development of monthly forecasts of opex direct labour costs and total corporate costs, in order to calculate a corporate cost charge rate. For example, if direct labour costs and corporate costs are forecast to be \$1.2 m and \$0.5 m, respectively, the corporate charge rate would be 41.7% ( $\$0.5m/\$1.2m$ ). A corporate charge of 41.7 cents would then be added to each dollar of direct labour costs forecast for the month for opex assets/project, to ensure corporate costs are fully absorbed.

To account for any over- or under-recoveries caused by differences between actual and forecast direct labour costs, an adjustment is made at the end of month. For example, if there was an under-recovery of corporate costs of \$100,000 and an opex project had five per cent of direct labour costs, it would receive additional corporate costs of \$5,000.

##### Indirect costs

Indirect costs are the support costs of operational business units which support a number of projects and assets but cannot be directly charged to specific assets or projects. Rather than being allocated across the entire business as corporate costs are, the indirect costs of each business unit are allocated to projects/assets on the basis of the direct labour costs of the staff within that business unit.

For instance, the indirect costs of Metering and Compliance, which include the salaries and wages of the manager of this business unit, are allocated to those assets/projects which Metering and Compliance staff have charged direct labour costs to.

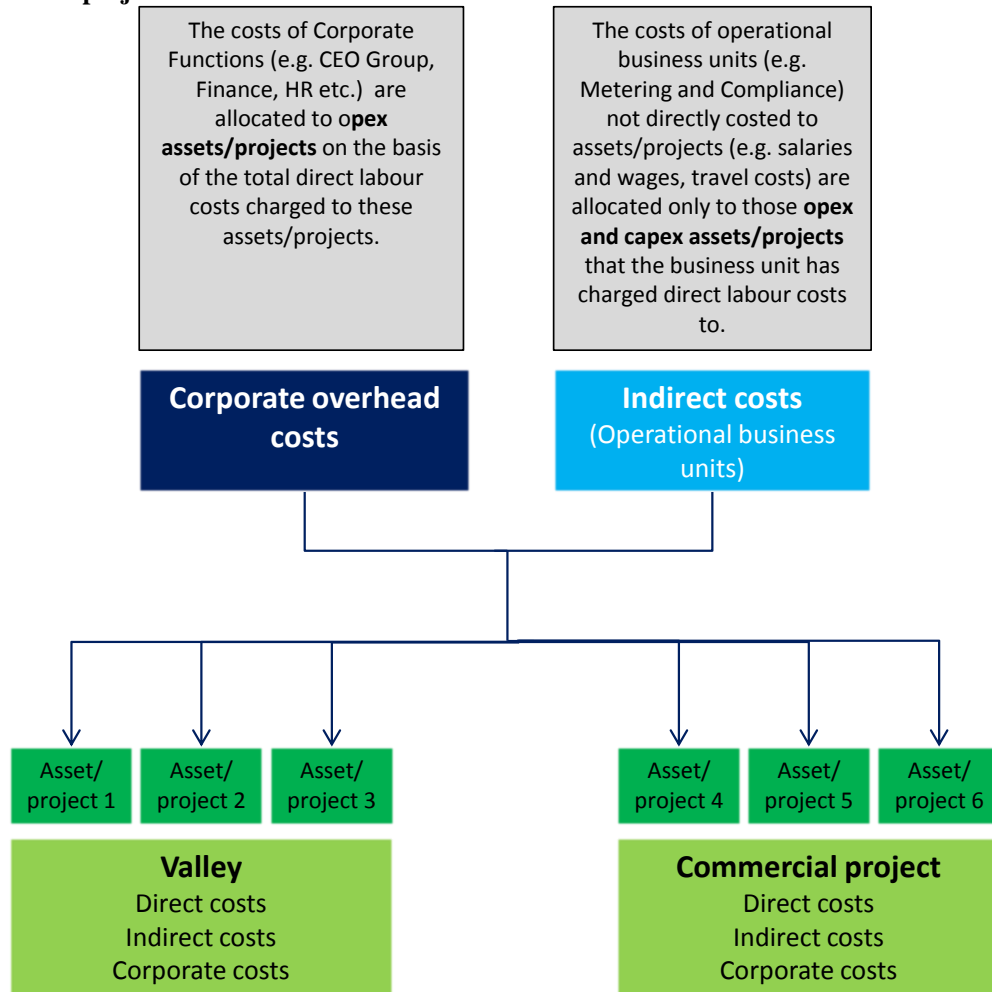
The calculation of indirect cost charge rates are similar to that outlined above for corporate costs.

##### Allocation to valleys

As explained above, both corporate and indirect costs are allocated to projects and assets within valleys on the basis of the direct labour costs charged to those projects and assets.

A simplified version of allocation of corporate and indirect costs to regulated valleys and to other parts of the business (e.g. a commercial project) is shown in the below figure.

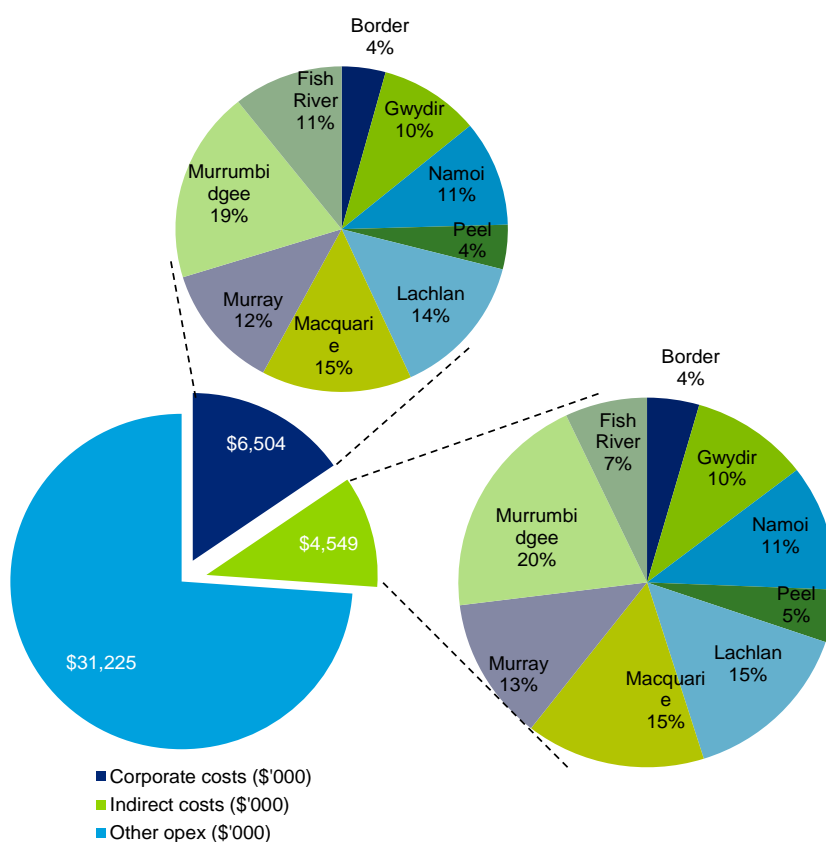
**Figure 2-1: Allocation of corporate and indirect cost to regulated and non-regulated assets/projects**



This allocation process results in the following apportionment of overhead and indirect costs in 2014-15.



**Figure 2-2: Allocation of Corporate and Indirect costs to ACCC regulated valleys in 2014-15 (\$2013-14, \$'000)**



**Table 2-1: State Water's allocation of direct salaries and wages and indirect and corporate costs to capex and opex, 2014-15**

	Direct salaries and wages	Indirect Costs	Corporate Costs	Total share of overheads
Capex	18%	19%	0%	9%
Regulated opex	61%	54%	76%	66%
Non-regulated opex	20%	27%	24%	25%

Source: State Water

### 2.1.2 Analysis

We consider State Water's approach to allocating its corporate and indirect costs using direct costed labour to be reasonable due to fact that:

- Salaries and wages account for, on average, 36% of State Water's proposed total opex over the regulatory period making it the largest cost item for the business and reflective of where State Water's effort and expense is being spent
- It aligns with approaches taken by comparable bulk water utilities such as SunWater and Goulburn-Murray Water
- It is a relatively simple approach which does not require the onerous collection of cost driver data and makes an appropriate trade-off between simplicity and accuracy

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- It does not generally result in an unequitable allocation of costs to either the regulated or non-regulated parts of the business (as demonstrated by Table 2-1).

We note, however, that there appears to be some inconsistency in State Water's approach to allocating its Corporate Systems capex between the regulated (including ACCC valleys) and non-regulated parts of the business.

Some project costs are proposed to be allocated using a 75% (regulated)/25% (non-regulated) split, which State Water advised is reflective of the allocation of opex between regulated and non-regulated activities. On the other hand, some projects appear to have been allocated solely to State Water's regulated business (100% allocation).

The following table sets out the projects which fall into each of these categories:

**Table 2-2: State Water's proposed allocation of Corporate Systems capex**

75%/25% allocation	100% allocation
Day Planner, Data Integration and Management, Data Warehouse and Business Intelligence, State Water Portal, Mobile Computing, DR/BCP, Collaboration, MP State Water Wise.	Server Software & Minor Solutions, IT Software Refresh, CARM, Hydstra Replacement, Security, Desktop Software Upgrades, Business Transformation Program, CARM Program, iSMART Program, OS GIS, CO WMAWAS - Separation and Rewrite, Contingency – iSMART

Note: State Water has not proposed capex for some projects

Source: State Water

We are of the view that allocating 100% of the costs of some projects to the regulated business may not be appropriate due to the fact that unregulated customers are likely to benefit from State Water's investment in these projects.

These projects, as well as our proposed adjustment to reflect a 75%/25% allocation (prorated to ACCC valleys), are shown in the below table. We note that State Water has accepted this adjustment. This adjustment has been allocated to valleys proportionate to proposed Corporate Systems capex in each valley.

**Table 2-3: State Water's proposed allocation of Corporate Systems capex**

Project	2014-15	2015-16	2016-17	Total
IT Software Refresh	-	1,000	-	<b>1,000</b>
Security	120	144	172	<b>436</b>
Desktop Software Upgrades	220	240	270	<b>730</b>
<b>Total</b>	<b>340</b>	<b>1,384</b>	<b>442</b>	<b>2,166</b>
<b>Total (ACCC valleys)</b>	<b>289</b>	<b>1,169</b>	<b>377</b>	<b>1,835</b>
<b>Adjusted total (75% allocation)</b>	<b>216</b>	<b>876</b>	<b>283</b>	<b>1,376</b>
<b>Adjustment</b>	<b>-72</b>	<b>-292</b>	<b>-94</b>	<b>-459</b>

Source: Deloitte analysis

## 2.2 Fixed and variable costs

### 2.2.1 State Water proposal

In 2012, State Water conducted an internal review of its operating costs in order to understand its proportions of fixed and variable costs and therefore allow it to propose a tariff structure that accurately reflects its cost structure. **Fixed costs** were defined as costs that are incurred irrespective of water delivery sales, while **variable costs** were defined as costs that may vary with variations in water delivery sales.

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This review focussed on the fixed and variable nature of State Water's operating costs over the short-term (defined by State Water as 3-5 years). It did not, however, attempt to identify opportunities for increasing the variability of costs through business improvement measures and budget management decisions, nor State Water's capability to vary its costs in response to a significant change to its operating environment and therefore water delivery volumes (e.g. a long-term drought).

The review involved a function-by-function (e.g. routine maintenance, water delivery etc.) assessment of operating costs (e.g. salaries and wages, direct materials costs etc.) to identify the proportion of fixed and variable costs within each function. Internal subject matter experts were consulted as part of this analysis.

In addition to this, State Water performed an analysis of the relationship between historical operating expenditure and water delivery sales, finding that although sales varied markedly between 2007-08 and 2011-12, operating expenditure did not.

Based on these analyses, State Water concluded that around one per cent of its operating costs are variable with respect to water delivery volumes, equating to less than \$400,000 per annum over the next regulatory period. The table below, which sets out State Water's findings with respect to each function, shows that variable cost components were identified in routine maintenance, metering and compliance, corrective maintenance, renewals and replacements and structure and other enhancements. The remaining functions were considered to comprise solely fixed costs.

**Table 2-4: State Water Corporation's fixed and variable costs by function**

Activity	Average 2007-08 - 2011-12				
	Total costs	Fixed costs	Variable costs	Fixed costs	Variable costs
	(\$)	(%)	(%)	(\$)	(\$)
31 - Routine Maintenance	9,949,456	97%	3%	9,691,406	258,050
14 - Water Delivery	6,660,550	100%	0%	6,660,550	0
33 - Dam Safety	4,341,428	100%	0%	4,341,428	0
17 - Hydrometric Monitoring	3,857,738	100%	0%	3,857,738	0
32 - Asset Management	3,689,491	100%	0%	3,689,491	0
12 - Metering & Compliance	3,373,094	99%	1%	3,340,536	32,558
30 - Corrective Maintenance	1,665,769	97%	3%	1,618,267	47,502
19 - Direct Insurance	1,058,651	100%	0%	1,058,651	0
34 - Environmental	794,493	100%	0%	794,493	0
98 - Corporate Systems	562,503	100%	0%	562,503	0
18 - Water Quality Monitoring	534,345	100%	0%	534,345	0
11 - Customer Billing	467,756	100%	0%	467,756	0
10 - Customer Support	432,934	100%	0%	432,934	0
50 - Renewal-Replacement	331,341	91%	9%	282,215	49,126
16 - Flood Operations	250,015	100%	0%	250,015	0
51 - Structures & Other Enhancements	21,449	93%	7%	17,466	3,984
15 - Water Transfers	7,877	100%	0%	7,877	0
<b>Total regulated opex</b>	<b>37,992,590</b>	<b>99%</b>	<b>1%</b>	<b>37,601,370</b>	<b>391,220</b>

Source: State Water

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Due to the significant operational differences between the Fish River Water Scheme and the rest of State Water's regulated business, a separate analysis of this scheme's cost structure was undertaken, finding that variable costs accounted for around 11% of FRWS operating costs. These variable cost components are:

- Electricity costs, which are associated with a number of pumping stations required to transfer water to storages when needed
- Chemical costs, which are required to clarify and filter water delivered to some of the scheme's customers
- Corrective maintenance costs, which relate to the maintenance requirements of the scheme's pipeline infrastructure.

For comparative purposes, State Water highlighted the outcomes of a review of SunWater's cost structure performed by Indec Consulting in October 2011, which was commissioned by the Queensland Competition Authority as part of its 2012-2017 price review. This review concluded that for SunWater's bulk water supply business, an appropriate fixed to variable ratio ranges from 96 per cent fixed to four per cent variable, and 89 per cent fixed to 11 per cent variable, and recommended a ratio of 93 per cent fixed to seven per cent variable.

Importantly, Indec's approach took into account SunWater's ability to vary selected processes and sub-activities during periods of fluctuating water demand, which is noted as being more likely to be material in water distribution than bulk water supply. As stated earlier, an assessment of State Water's ability to apply similar management approaches was not within the scope of its review, marking a key difference between the two analyses.

## 2.2.2 Analysis

We consider State Water's approach to determining its fixed and variable costs, which included consulting with internal subject matter experts and examining historical data, to be reasonably sound. While the review found a particularly low proportion (<1%) of variable operating costs, excluding FRWS, this is not surprising for a bulk water delivery business with no pumping costs.

We also consider the cost structure of SunWater's bulk water delivery business to be a valid benchmark to compare State Water's cost structure against. Accordingly, Indec's views in relation to SunWater's cost structure support State Water's findings with respect to its variable costs.

Furthermore, in March 2013, Frontier Economics assessed the internal analysis undertaken by State Water of its cost structure as part of a broader strategic consultancy. Although Frontier Economics noted that further work could be undertaken to support the view that salaries and wages costs are fixed in the short term, State Water's analysis was generally accepted.

## 2.3 Operating efficiency targets

### 2.3.1 State Water proposal

As discussed in section 3.3, State Water has set annual efficiency targets equal to its forecast of real wage increases, resulting in a proposed efficiency savings of 1.3 per cent over the 2014-17 regulatory period. State Water plans to achieve these savings through a number of means, including redundancies, business system improvements, WHS improvements, encouraging employee leave, controlling travel and overtime and EBA negotiations.

State Water's proposed efficiency savings are set out in the table below.

**Table 2-5: State Water's proposed efficiency savings, 2014-2017 (\$2013-14, \$'000)**

All valleys	Next regulatory period			Total
	2014-15	2015-16	2016-17	
Proposed operating expenditure	42,278	41,624	41,346	125,247
Projected real wage increase	453	544	583	1,581
<b>Proposed efficiency saving</b>	<b>1.1%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>1.3%</b>

Source: State Water

### 2.3.2 Efficiency savings in the current regulatory period

#### 2010 IPART determination

In 2009, IPART engaged Atkins Cardno to assess the prudence and efficiency of State Water's proposed expenditure from 2010-11 to 2013-14.

As part of this, Atkins Cardno set efficiency targets for State Water on the basis of two different types of efficiency savings that the business could reasonably be expected to achieve:<sup>2</sup>

- Continuing efficiency, which relates to the increased productivity derived from process innovation and new technology that all well performing businesses should achieve (e.g. restructuring functions).
- Catch-up efficiency, which represents efficiency required to catch-up from an agency's current position to that of the "frontier" utility or "benchmark" utility (e.g. improvements in operational processes such as maintenance, customer operations and water delivery).

Atkins Cardno estimated a continuing efficiency target of 0.8% per annum for State Water, which was reportedly consistent with the efficiency targets it set for the NSW urban water businesses and Hunter Water in 2004 and 2008, respectively.

An annual catch-up efficiency target of 0.6% in the first year, and 1.2% for subsequent years, was recommended based on Atkins Cardno's understanding of operational processes across other utilities. Its assessment was based on identified improvements to processes and business opportunities which would generate efficiencies in future years to enable State Water to move towards a "frontier utility".

Taken together with State Water's proposed efficiency savings, this resulted in the following net efficiency savings recommended by Atkins Cardno, which were accepted by IPART:

**Table 2-6: Atkins Cardno recommended efficiency savings, 2011-2015 price review**

	2011	2012	2013	2014	2015
Continuing efficiency (%)	0.8	0.8	0.8	0.8	0.8
Catch up efficiency (%)	0.6	1.2	1.2	1.2	1.2
Total efficiency (%)	1.4	1.8	2	2	2
<b>Cumulative total efficiency (%)</b>	<b>1.4</b>	<b>3.2</b>	<b>5.2</b>	<b>7.2</b>	<b>9.2</b>
<i>Cumulative efficiency proposed by State Water (%)</i>	0.6	2	4.1	5.9	5.9
<b>Net efficiency to be applied (%)</b>	<b>0.8</b>	<b>1.2</b>	<b>1.1</b>	<b>1.3</b>	<b>3.3</b>

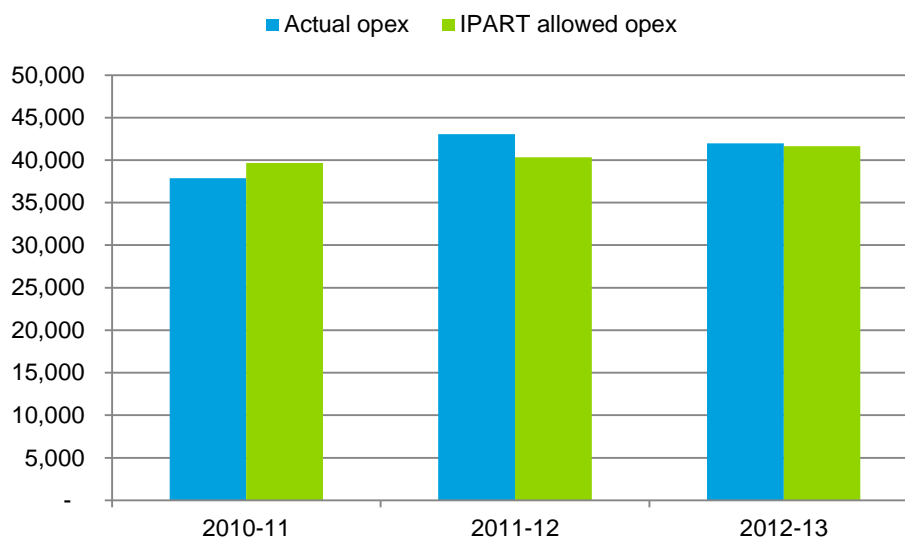
Source: WS Atkins International (Australia) Limited (Atkins), in association with Cardno (Queensland) Pty (Cardno) (2009) *Strategic Management Overview and Review of Operating and Capital Expenditure of State Water Corporation 2009*, p. 92, November 2009

<sup>2</sup> WS Atkins International (Australia) Limited (Atkins), in association with Cardno (Queensland) Pty (Cardno) (2009) *Strategic Management Overview and Review of Operating and Capital Expenditure of State Water Corporation 2009*, pp. 91-92, November 2009

## State Water's performance

State Water's performance against the expenditure benchmarks set by IPART for the 2010-2013 regulatory period are shown in the below figure.

**Figure 2-3: State Water's actual vs. IPART allowed opex**



Source: State Water

State Water's expenditure has varied over the three years of the current period; while its opex in 2010-11 was less than the expenditure set by IPART, in 2011-12 and 2012-13 it exceeded the allowable opex, particularly so in 2011-12.

State Water provided the following explanatory comments regarding these outcomes:

- In 2010-11, actual opex was lower than IPART expenditure as drought conditions allowed for cost reductions in some areas (e.g. reduction in dam surveillance, dam safety compliance etc.)
- In 2011-12, opex increased to more normal levels, and above IPART expenditure, as the weather returned to more normal conditions
- In 2012-13, a \$600,000 write-off associated with a weir was incurred which was attributable to opex.

Despite the above factors, State Water's actual aggregate opex over the current period (2010-11 to 2012-13) has been very similar to IPART's allowed opex, with actual opex of \$122.9m compared with allowed expenditure of \$121.7m.

State Water also attributed this performance to developing budgets on the basis of IPART allowed expenditure, as well as improving its budgeting processes (e.g. establishing a budget expenditure review panel).

### 2.3.3 Analysis

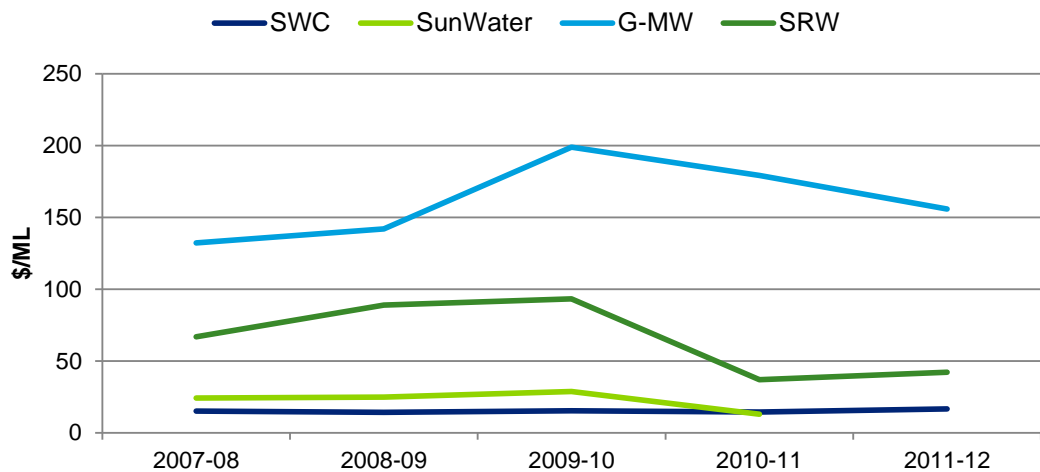
#### Benchmarking

We conducted some high level benchmarking of opex for regulated river systems against other similar rural water bulk service providers (Goulburn Murray Water (G-MW), SunWater and Southern Rural Water (SRW)). We used information from the latest *National Performance Report rural water service providers 2011-12* (National Water Commission, 2013). We normalised opex against the volume of water delivered and against the length of regulated river systems.

The purpose of the benchmarking exercise is to provide a high level indication of any outlying utility results and, if there are any outlying utilities, prompt further investigation as to the reasons for those results. Furthermore, it must be noted, that the following benchmarking is not comparing the performance of the various utilities as there are many factors affecting performance that cannot be accounted for in this exercise. Moreover, the rural NPR data is not audited and is still in the process of developing consistent definitions across all rural providers. Therefore we have not relied heavily on the benchmarking analysis in our review, and the following results must be interpreted with caution.

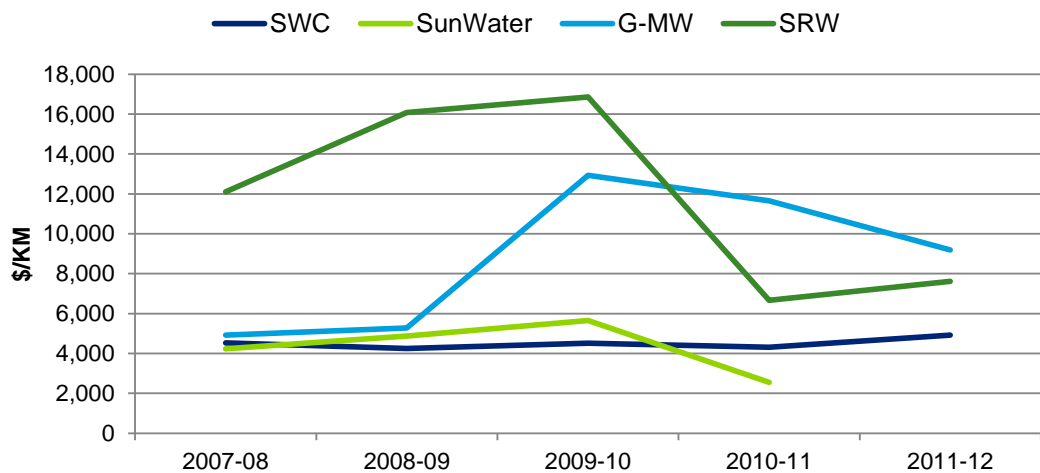
The below figures demonstrate that State Water (shown in the charts as SWC) is not an outlier in comparison to its peer utilities in terms of operating expenditure for regulated river services. Both its opex per ML of water delivered (averaged between 2007-08 and 2011-12) and opex per kilometre of regulated river are lower than its comparator utilities over much of the time series. The exception was in 2010-11, when SunWater’s opex per km of regulated river was around 41% lower than State Water’s, and opex per ML of water delivered was around the same for both businesses due to SunWater’s regulated river opex decreasing substantially from \$18.4m to \$8.3m in 2010-11.

**Figure 2-4: Opex per five-year average ML of water delivered, 2007-08 to 2011-12**



Source: National Water Commission (2013) *National Performance Report 2011-12: Rural water service suppliers*, March 2013

**Figure 2-5: Opex per kilometre of regulated river, 2007-08 to 2011-12**



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Source: National Water Commission (2013) *National Performance Report 2011-12: Rural water service suppliers*, March 2013

### Other price determinations

A number of price determinations for other water utilities have been made recently, including SunWater, Goulburn-Murray Water, Sydney Catchment Authority and Sydney Water. To the extent these organisations and their operating environment are comparable, the efficiency applied by their price regulators form a useful benchmark to compare State Water's proposed efficiency targets against.

Table 2-7 shows the efficiency savings applied to these organisations' proposed operating expenditure. Note that these efficiency savings are attributed to ongoing productivity improvements and do not include one-off cost savings identified by regulators.

**Table 2-7: Efficiency savings applied to other water businesses**

Organisation	Regulator	Regulatory period	Efficiency saving applied (p.a.)
SunWater	QCA	2012-13 to 2016-17	Non-direct opex: 1.5% Direct opex: 0.75%
G-MW	ESC	2013-14 to 2016-17	1%
SCA	IPART	2012-13 to 2015-16	0.30%
Sydney Water	IPART	2012-13 to 2015-16	2012-13: 1.75% 2013-14 onwards: 2.25%
<b>Average</b>			<b>1.26%</b>

Source: QCA, ESC and IPART Final Decisions

This analysis shows that the annual efficiency savings applied by regulators ranged from 0.3% for SCA to 2.25% for Sydney Water, with an average annual efficiency saving of 1.26%.

### 2.3.4 Recommendations

State Water's opex over the current regulatory period broadly demonstrates that it has met the allowed opex by IPART, which reflected both the 'catchup' and 'continuing' efficiency gains set out in Table 2-6.

Bearing in mind the above benchmarking and actual expenditure outcomes, and aside from our recommended expenditure reductions in particular areas (including wages - see Chapter 3) we have not identified any high-level or systemic matters that suggest there is a significant efficiency gap that State Water needs to catch up.

We are confident, however, of State Water's ability to continue to make efficiency savings over the 2014-17 regulatory period. While State Water has proposed efficiency savings equal to its projection of real wage increases, these projections are, in our view, based on an excessively high forecast of nominal wage growth.

Accordingly, we recommend that an efficiency saving of 1 per cent per annum be applied to State Water's controllable opex (less other adjustments), as shown in the table below

This efficiency saving, which adds to \$0.85m over the regulatory period, is consistent with efficiency savings applied to comparable bulk water businesses in recent price determinations and with good business practice.



**Table 2-8: Deloitte recommended efficiency savings (\$2013-14, \$'000)**

	2014-15	2015-16	2016-17	Total
Regulated opex	42,619	41,965	41,687	<b>126,271</b>
Uncontrollable items				
Hydrometric monitoring	3,994	3,994	3,994	<b>11,983</b>
Insurance	1,378	1,378	1,378	<b>4,134</b>
Controllable opex	37,247	36,593	36,315	<b>110,154</b>
Salaries and wages	-21,461	-21,461	-21,461	<b>-64,383</b>
Other adjustments	-1,201	-1,158	-1,125	<b>-3,484</b>
<b>Controllable opex less other adjustments and salaries and wages</b>	<b>14,585</b>	<b>13,973</b>	<b>13,729</b>	<b>42,287</b>
<b>Cumulative efficiency saving (\$)</b>	<b>-146</b>	<b>-284</b>	<b>-419</b>	<b>-849</b>
<b>Cumulative efficiency saving (%)</b>	<b>-1%</b>	<b>-2%</b>	<b>-3%</b>	<b>-2%</b>

Source: State Water; Deloitte analysis

## 2.4 Other issues

### 2.4.1 New operating licence

Opex and capex forecasts need to be sufficient for regulated entities to meet their service obligations. State Water's operating licence sets out the objectives, obligations and conditions State Water must adhere to and meet in carrying out its functions over the five years to 30 June 2018. State Water's current operating licence came into effect on 1 July 2013 after being reviewed by IPART. In conducting this review, which occurs in five-year intervals to ensure the licence sets out appropriate objectives, obligations and conditions, IPART:

- Reviewed State Water's functions
- Explored the regulatory framework of the function
- Gave consideration to the appropriateness of the current operating licence conditions within this regulatory framework
- Gave consideration to whether other instruments regulate the functions of State Water to achieve its objectives
- Conducted a cost benefit analysis (CBA) for each change it proposed.

The primary changes resulting from this review are the:

- Implementation and certification by 2018 of Asset Management and Environmental Management Systems (EMS)
- Removal of flood management related obligations
- Removal of the obligation to maintain Memorandum of Understandings
- Review of the list of conferred functions
- Removal of the obligation to maintain a Community Consultative Committee (CCC)
- Inclusion of conditions related to the provision of information to Local Water Utilities
- Clarification of State Water's role with regards to water metering.

While some of these changes are linked to proposed increased in opex in some activities (e.g. the implementation of an EMS), in our view they are not expected to significantly affect State Water's required expenditure.

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This is because the new licence has not resulted in substantial changes to State Water's operating environment, such as its method of water delivery or its customer base. Further, while the new licence has created a number of new obligations, it has also removed some obligations for State Water (listed above), which might reasonably be expected to offset each other to an extent.

## 2.4.2 Operating expenditure cycle

A key element of our approach to reviewing State Water's opex is to define a base level of expenditure, as set out in section 3.1, and then to understand what increments or decrements in expenditure are required going forward in order to deliver new or changed service outcomes. This provides transparency about the approximate cost of changed service outcomes and their effects on prices.

The concept of developing 'baseline' level of expenditure is that it is the level of expenditure necessary to provide a defined level of service. Implicit is the assumption that the actual activities undertaken by a business from year to year to deliver services will change and there will be a number of once-off areas of expenditure in any one year that are not required every year. For example, a water utility may be required to update documentation in one year, prepare a water quality monitoring strategy in another, and do a number of once-off repairs in another year. That is, there will be a number of inclusions and exclusions from year to year associated with the normal ebb and flow of work requirements and changes in the industry and wider business environment.

As examples, one-off projects undertaken by State Water in 2011-12 which may not be immediately repeated in the near future include:

- A maintenance improvement project in 2011-12, which involved conducting a reliability centred maintenance analysis of State Water's physical infrastructure assets in order to develop a defensible maintenance program<sup>3</sup>
- The development of revised project management guidelines and associated project management documentation during 2011-12<sup>4</sup>
- A revaluation of non-current assets in accordance with accounting standards and a NSW Government policy paper, commencing in 2011-12 and due for completion in June 2013<sup>5</sup>
- Detailed state-wide mapping of surface water and groundwater meters and the processed involved in meter readings in 2010-11 and 2011-12 to improve efficiency and time management<sup>6</sup>
- To prepare for portfolio risk assessments in 2011-12, during 2010-11 hydrology models were developed for all State Water dams, and its dam break models were updated<sup>7</sup>
- A number of projects during 2010-11 to bring asset management systems up to best practice standard:<sup>8</sup>
  - Valuation policy
  - Asset disposal policy and procedures
  - Asset data management policy and procedures manual
  - Identification of asset data attribute requirements for land, buildings and weirs.

<sup>3</sup> State Water (2012) *Annual Report 2011-12*, p. 21

<sup>4</sup> Ibid, p. 21

<sup>5</sup> Ibid, p. 21

<sup>6</sup> Ibid, p. 23

<sup>7</sup> Ibid, p. 38

<sup>8</sup> Ibid, p. 38

Businesses often identify once-off increases in expenditure which are added to base level expenditure, however seldom do they identify cost reductions or once-off increases in base year spending. Our position is that these once-off increases should not generally require specific increases in opex where they are not linked to the delivery of new or changed service outcomes or unless they are material and a compelling case has been made for additional expenditure. Accordingly, there are a number of instances throughout this report where we have recommended removal of some opex on the basis that some proposed 'one-off' expenditure drivers proposed by State Water are likely to be offset by reductions in opex in other parts of the business.

# 3 Assessment of operating expenditure

## 3.1 Baseline (2012-13) expenditure

Our approach to assessing State Water’s proposed operating expenditure over the 2014-17 regulatory period is to define an efficient level of expenditure (the ‘baseline’) to compare with proposed expenditure. 2012-13 expenditure of \$37.3m has been used as the baseline as actual opex data was available for this year (as opposed to State Water’s proposal to use budgeted figures for 2013-14).

To ensure the baseline of \$37.3m represents both an efficient level of expenditure and is reflective of ‘normal’ operating conditions, we removed any material once-off items that were incurred in 2012-13 and added back any material items that are normally incurred but were not in 2012-13. These resulted in the removal of radio tower lease costs that have been incurred by State Water since 2007, but only recognised in 2012-13. This adjustment has been reflected in 2012-13 opex throughout the report.

Table 3-1 sets out State Water’s actual 2012-13 opex, the adjustments we made to determine our baseline, and State Water’s proposed expenditure over the regulatory period.

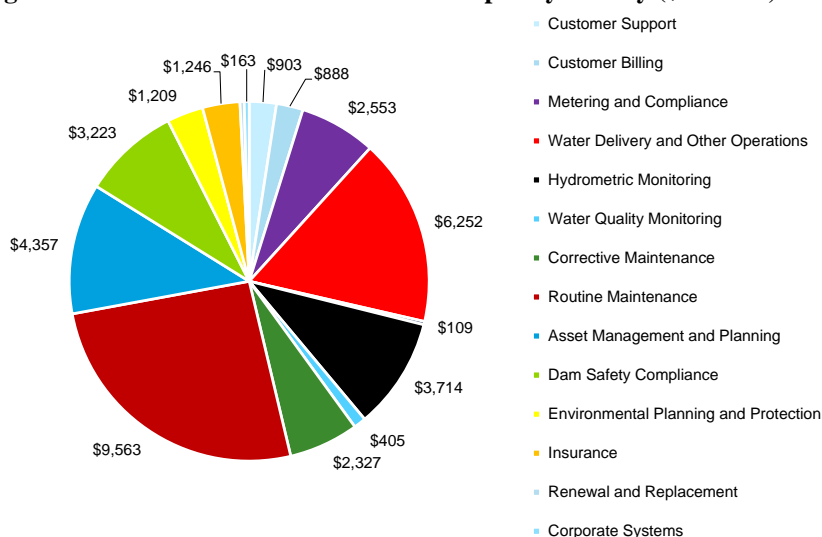
**Table 3-1: State Water actual 2012-13 opex, Deloitte baseline opex and State Water proposed opex (\$2013-14, \$’000)**

All valleys	Actual	Next regulatory period			Total
	2012-13	2014-15	2015-16	2016-17	
Actual expenditure	37,270				
Deloitte adjustments					
<i>Radio tower lease costs</i>	-217				
Deloitte baseline	37,053				
State Water proposed expenditure		42,619	41,965	41,687	<b>126,271</b>

Source: State Water; Deloitte analysis.

These adjustments result in baseline opex of \$37.1m, which has been disaggregated by activity in the below figure:

**Figure 3-1: State Water’s 2012-13 baseline opex by activity (\$2013-14, \$’000)**



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Source: State Water; Deloitte analysis.

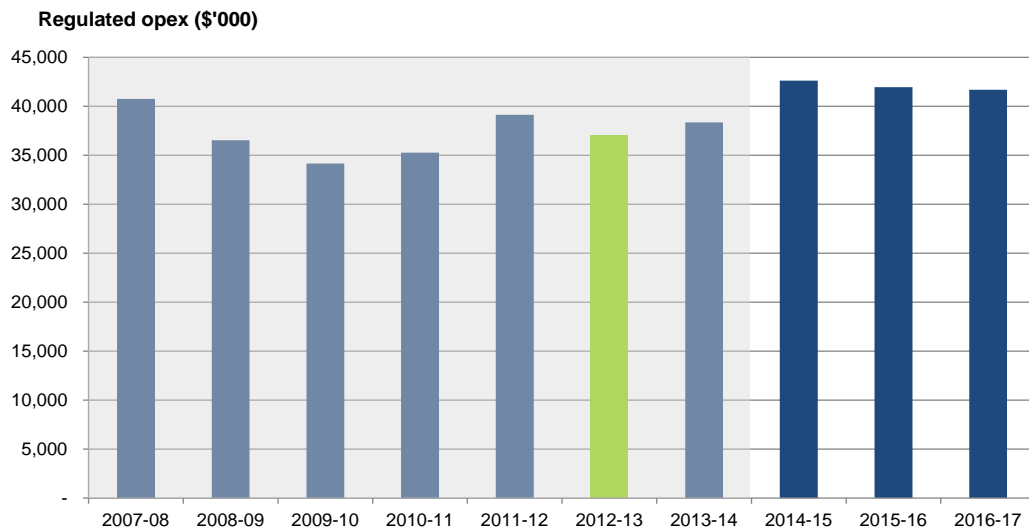
### 3.2 Summary of forecast operating expenditure

Figure 3-2 shows State Water’s historical and budgeted operating expenditure from 2007-08 to 2013-14 and its forecast expenditure over the upcoming regulatory period. Expenditure in each valley is also shown over the same time period.

Note that throughout this report, unless indicated otherwise, references to State Water’s ‘total’ expenditure refer to regulated expenditure in MDB valleys/schemes only.

State Water has forecast operating expenditure of \$125.2m over the three years of the regulatory period. This compares with actual and budgeted expenditure of \$111.2m between 2011-12 and 2013-14.

**Figure 3-2 State Water actual and forecast operating expenditure, by valley (\$2013-14, \$m)**



Source: State Water

On average, State Water’s proposed annual opex over the regulatory period is \$42.1m, a 14% increase over the base year (2012-13) opex of \$37.1m. Table 3-2 demonstrates that this increase is largely driven by forecast growth in:

- Metering and Compliance costs
- Water Delivery and Other Operations costs
- Water Quality Monitoring costs
- Routine Maintenance costs
- Corporate Systems costs.

The drivers of these cost increases are discussed further throughout this chapter.

**Table 3-2: State Water actual and proposed opex by activity (\$'000, \$2013-14)**

Activity	2012-13		2014-15 to 2016-17 average		Change	
	\$	% of total	\$	% of total	\$	%
Customer Support	903	2.44%	523	1.24%	-380	-42%
Customer Billing	888	2.4%	827	2.0%	-61	-7%
Metering and Compliance	2,553	6.9%	3,451	8.2%	898	35%
Water Delivery and Other Operations	6,252	16.9%	8,551	20.3%	2,299	37%
Hydrometric Monitoring	3,714	10.0%	3,994	9.5%	280	8%
Water Quality Monitoring	405	1.1%	867	2.1%	462	114%
Corrective Maintenance	2,327	6.3%	2,529	6.0%	202	9%
Routine Maintenance	9,563	25.8%	10,591	25.2%	1,029	11%
Asset Management and Planning	4,357	11.8%	3,494	8.3%	-862	-20%
Dam Safety Compliance	3,223	8.7%	3,551	8.4%	327	10%
Environmental Planning and Protection	1,209	3.3%	1,561	3.7%	351	29%
Insurance	1,246	3.4%	1,378	3.3%	132	11%
Renewal and Replacement	141	0.4%	0	0.0%	-141	-100%
Corporate Systems	163	0.4%	773	1.8%	610	374%
<b>Total opex</b>	<b>37,053</b>	<b>100%</b>	<b>42,090</b>	<b>100%</b>	<b>5,037</b>	<b>14%</b>

Source: State Water; Deloitte analysis.

The major drivers of the increases identified by State Water in comparison to the baseline include:

- Inclusion of Lowbidgee as a regulated valley
- Increased hydrometric services costs from the New South Wales Office of Water (NOW)
- The rollout of the NSW Metering Program
- Increase in insurance premiums
- Significant upgrades to ICT systems
- The implementation of an Environmental Management System
- The need undertake a number of large five and ten year scheduled tasks which have fallen behind in the current regulatory period due to flooding impacts and other higher priority works (e.g. MDBA obligations and delivering capital works)

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- New compliance obligations created by the *Public Health Act 2010* (NSW).

### 3.3 Operating expenditure items

#### 3.3.1 Salaries and wages

Salaries and wages costs (including superannuation, annual leave etc.) account for a significant proportion of State Water’s cost base. Salaries and wages include:

- Direct salary and wages operating costs
- Corporate and indirect salary and wages operating costs (discussed also in section 3.3.2)
- Salary and wages operating costs associated with non-ACCC valleys
- Salary and wages costs that are capitalised.

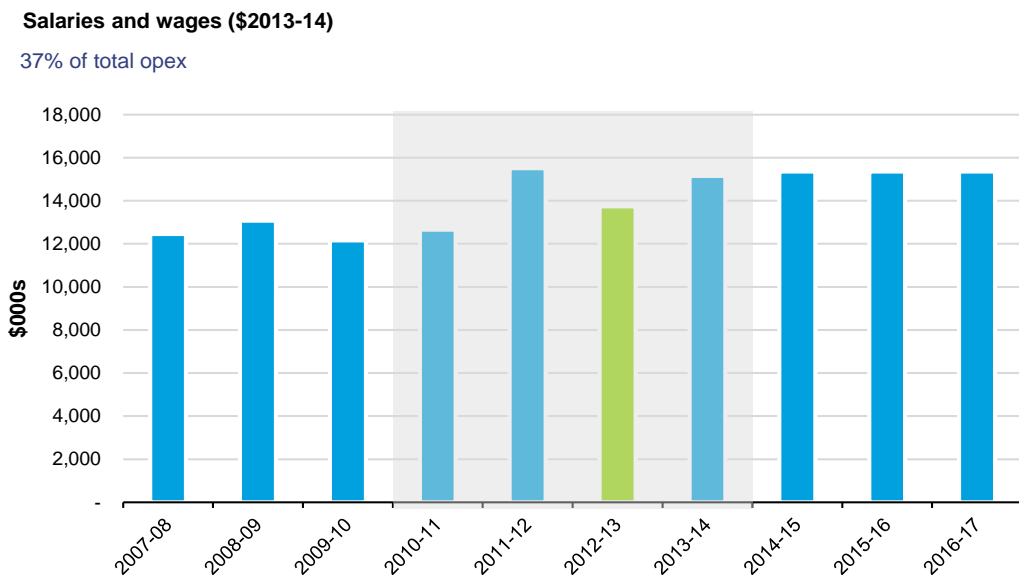
#### State Water proposal

State Water’s proposed direct salaries and wages opex over the next regulatory period is \$45.9m or, on average, \$15.3m per year. This is an increase of 10% compared to direct salaries and wages of \$14m in 2012-13.

We understand the increase in salaries and wages in 2011-12 was largely driven by the introduction of new performance-based compensation arrangements.

Direct salaries and wages opex represents 37% of total operating expenditure over the regulatory period, with indirect salaries and wages taking this total to over 50% of operating expenditure.

**Figure 3-3: State Water’s direct actual, budgeted and proposed salaries and wages opex (\$2013-14, \$’000) for ACCC valleys**



Source: State Water

State Water has developed its forecast of salaries and wages by taking 2013-14 as the baseline year and assuming no real change in total salaries and wages costs from 2013-14 to 2016-17. State Water intends to achieve this through offsetting any real increases in wage rates and on-costs with labour related efficiencies. State Water’s projected nominal increases in salaries and wages are based on:

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- 4.2% nominal wage increase per year, which is equal to the average of the last 10 years ABS NSW public sector hourly rates index
- Commonwealth Government mandated superannuation increases of 0.25% in 2014-15 and 0.5% thereafter.

State Water proposes a wages forecast increasing by only 2.5% per annum in nominal terms and that in order to remain within this cap, it will achieve efficiencies through:

- WHS improvements to minimise injury and Workers Compensation costs
- Employee leave taking to reduce Annual and Long Service Leave liability
- Controlling employee travel and overtime
- The negotiation of the 2015 Enterprise Agreement to deliver a conservative wage increase that complies with NSW Wages Policy
- ‘Freezing’ FTE numbers from 2013-14 through to 2016-17.

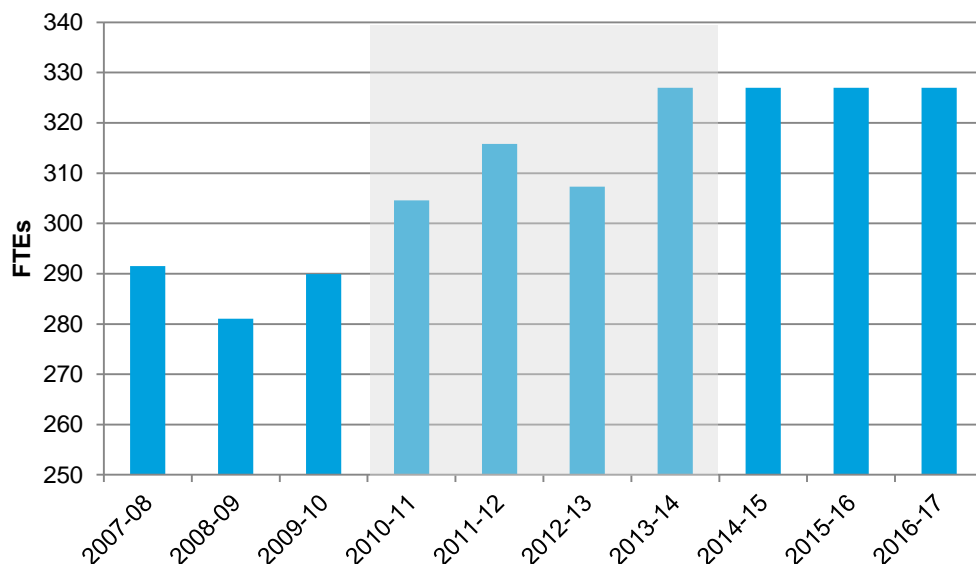
### Analysis

Salaries and wages forecasts are generally a function of the number of FTEs plus the forecast movements in wages and salaries. Accordingly, in assessing State Water’s proposed salaries and wages increases we have had regard to FTE numbers, general wage and inflation movements, as well as the NSW public sector wages policy.

### FTEs

Total FTEs (including direct and non-direct staff, IPART valleys and non-regulated parts of the business) are forecast to increase by 20 in 2013-14. State Water suggests this increase will occur as it reduces its vacancy rate to a more sustainable level.

**Figure 3-4: State Water’s total FTEs, 2007-08 to 2016-17**



Source: State Water

In our view the need for the significant increase in State Water’s FTEs is not apparent as with only minor exceptions:

- State Water’s obligations, as set out in its licence, have not increased materially
- Its customer base and general sphere of operations is relatively static

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- It is not apparent that State Water has been failing to meet its service standard requirements in the past.

This is not to suggest that additional staff will not be required in specific areas. However, as with any business responding to changes in the general business environment, technology and other factors it is not unreasonable to suggest that State Water can change its mix of staff over time such that its total FTEs remain largely unchanged.

Accordingly, we do not consider there is a case for a growth in FTEs as proposed by State Water.

### General wage and inflation movements

Wages growth in the economy is currently weak. Deloitte Access Economics' July 2013 *Business Outlook* noted that the current pace of wage growth is the lowest registered since the GFC. Removing the wage slowdown during the GFC, current wage growth is the weakest since the early 2000s.

Deloitte Access Economics' forecast of wage growth over the regulatory period, which is shown in the table below, suggests that economy-wide wage growth is expected to recover and be in the order of 3.6-4.1% over the next regulatory period. However this is still less than the 4.5-4.75% nominally forecast by State Water (including superannuation and before its proposed efficiencies are factored in). Given its forecast inflation of 2.6-2.8%, Deloitte Access Economics projects real wage growth in order of 1-1.4% over the next regulatory period.

**Table 3-3: Deloitte Access Economics forecast of real wage growth (% change)**

	Current period		Next regulatory period		
	2012-13	2013-14	2014-15	2015-16	2016-17
Wage Price Index	3.3	3	3.6	3.9	4.1
Consumer Price Index	2.3	2.4	2.6	2.8	2.7
Real wage growth	1.0	0.6	1.0	1.1	1.4

Source: Deloitte Access Economics (2013) *Business Outlook*, p. 61, September 2013

State Water's forecast also includes mandated superannuation increases of 0.25% in 2014-15 and 0.5% thereafter. The new Coalition Government's superannuation policy does not include such increases, with the Government stating its intention to freeze superannuation contributions at 9.25%.<sup>9</sup> The increases associated with mandatory superannuation increases forecast by State Water are therefore not likely to eventuate.

### The NSW Public Sector Wages Policy

The NSW Public Sector Wages Policy (Wages Policy) aims to maintain the real value of public sector wages over the medium term in line with the mid-point of the Reserve Bank of Australia (RBA) target range for inflation (2.5%). In particular, the Wages Policy states that "*public sector employees may be awarded increases in remuneration or other conditions of employment that do not increase costs by more than 2.5 per cent per annum.*"<sup>10</sup>

This policy was amended in April 2012 to extend its application to State Owned Corporations, including State Water Corporation. State Water considers that for the purposes of setting wage increases, a base year of expenditure set at 2011-12 had been agreed with the NSW Government.<sup>11</sup> While individual employees can be awarded nominal wage increases of greater than 2.5% per year, this must be offset by efficiency savings (e.g. redundancies, reductions in overtime and allowances, etc.) to ensure no change in total salaries and wages from 2011-12 levels.

<sup>9</sup> *The Coalition's Policy for Superannuation*, September 2013

<sup>10</sup> NSW Department of Premier and Cabinet (2012) *NSW Public Sector Wages Policy 2011 – Updated April 2012*

<sup>11</sup> [http://www.dpc.nsw.gov.au/announcements/ministerial\\_memoranda/2012/m2012-04](http://www.dpc.nsw.gov.au/announcements/ministerial_memoranda/2012/m2012-04) last accessed 5 September 2013

Importantly, the Wages Policy applies to State Water's *total* wages bill, not just the direct salaries and wages shown in Figure 3-4. State Water's total wages bill includes not only the opex direct salaries and wages shown in Figure 3-3, but also the salaries and wages charged to:

- IPART-regulated valleys
- Unregulated activities
- Capex projects
- Corporate and indirect costs (discussed in section 3.3.2).

As shown by Table 3-4, to achieve alignment with the Wages Policy, State Water's total annual salaries and wages would need to be around \$0.9m lower than the level proposed in each year of the next regulatory period (not taking into account other employee related costs, some of which are included in the policy's scope).

### Recommended adjustments

Given the static nature of State Water's business and relatively weak conditions in the Australian labour market, we do not consider there is compelling evidence that State Water's:

- FTEs should be higher than those employed during 2012-13
- Salaries and wages expenditure should increase across the regulatory period by more than the real wage growth set out in Table 3-3.

Our recommended total salaries and wages is therefore a function of our view of an efficient number of FTEs combined with Deloitte Access Economics' forecast of real wage growth:

**Table 3-4: Deloitte analysis of State Water's total salaries and wages (\$2013-14, \$'000)**

	Current period				Next period			Total
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	
<b>State Water proposal</b>								
Total salaries and wages	34,205	38,113	36,118	38,991	38,991	38,991	38,991	<b>116,973</b>
FTEs	305	316	307	327	327	327	327	
Average salaries and wages per FTE	112.3	120.7	117.5	119.2	119.2	119.2	119.2	
<b>Deloitte analysis</b>								
FTEs	305	316	307	307	307	307	307	
Average salaries and wages per FTE	112.3	120.4	117.3	118.1	119.3	120.5	122.2	
Total salaries and wages	34,196	38,039	36,047	36,294	36,648	37,040	37,545	<b>111,233</b>
<i>Recommended adjustment</i>					-2,343	-1,951	-1,446	<b>-5,740</b>
<b>Distribution of salaries and wages</b>								
ACCC regulated salaries and wages								
Direct					39.2%	39.2%	39.2%	<b>39%</b>
Indirect					10.6%	10.6%	10.6%	<b>11%</b>
Other salaries and wages (IPART valleys,					50.2%	50.2%	50.2%	<b>50%</b>

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	Current period				Next period			Total
	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	
capex, unreg. opex)								
<b>Distribution of adjustment</b>								
Regulated direct salaries and wages					-919	-765	-567	-2,252
Regulated indirect salaries and wages					-248	-207	-153	-608
Other (IPART valleys, capex, unreg. opex)					-1,176	-979	-726	-2,880

Source: Deloitte Access Economics (2013) *Business Outlook September 2013*, p.61, September 2013; Deloitte analysis.

Based on the distribution of salaries and wages across the ACCC-regulated and other parts of the business, this translates to adjustments of \$2.3m and \$0.6m to direct and indirect salaries and wages, respectively, and a recommended level of direct salaries and wages that is:

- Around 7% higher in real terms than base year expenditure
- Based on a total salaries and wages bill that is around 3% lower than, and therefore consistent with, the NSW Wages policy.

**Table 3-5: State Water's proposed direct Salaries and Wages operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	13,594	15,121	15,295	15,295	15,295	45,884
Recommended adjustments			-919	-765	-567	-2,252
Recommended expenditure			14,376	14,530	14,728	43,633

Source: Deloitte analysis

We also note that a proportion of State Water's labour costs are capitalised, although we have not been able to reconcile the total amount capitalised with the labour amounts capitalised in individual projects. As a result of these reconciliation issues, we are concerned that State Water's proposed capex estimates may be overstating its capitalised labour costs. We understand the ACCC is further pursuing this issue.

Note also that as we have already assessed wages and salaries in this section and made necessary adjustments to ensure prudence and efficiency, where State Water has proposed additional FTE in individual activities we have not made further adjustments. We consider that as State Water's total FTEs will remain unchanged, any staff increases in one activity will need to be offset by decreases in another activity.

We note, however, that the expenditure data provided to us has generally not been granular enough to allow us to identify the salaries and wages components of individual expenditure items. This means where we have recommended the removal or reduction of individual expenditure items that contain salaries and wages, there is potential for some "double counting" to occur. We consider it unlikely that any double counting will be material as we have in most cases recommended the removal or reduction of expenditure items that are in non-labour. Furthermore, we have not applied our recommended efficiency saving to labour costs.

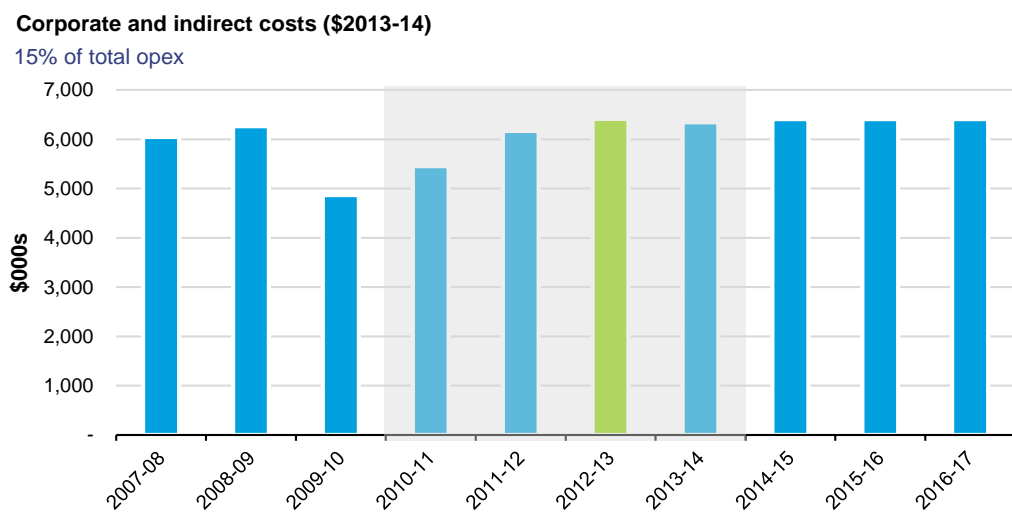
### 3.3.2 Corporate and indirect costs

#### State Water proposal

As outlined in section 2.1, State Water’s overhead costs are classified as corporate and indirect costs, which have been forecast by State Water as \$31.2m over the next regulatory period or, on average, \$10.4m per year. This is a reduction of 1% compared to overhead costs of \$10.5m in 2012-13.

State Water’s proposed overhead costs represent 25% of total operating expenditure over the regulatory period.

**Figure 3-5: State Water’s actual, budgeted and proposed corporate and indirect costs (\$2013-14, \$’000)**



Source: State Water

#### Analysis

While State Water’s proposed Corporate and Indirect costs are largely similar to its 2012-13 costs, employee related costs (e.g. salaries and wages, annual leave, workers compensation insurance etc.), account for around 59% of State Water’s overhead and indirect costs.

Accordingly, our view of an efficient level of salaries and wages (as discussed in the previous section) requires a reduction in the salaries and wages component of corporate and indirect overhead costs of approximately \$0.6m over the regulatory period.

#### Recommended adjustments

**Table 3-6: State Water’s proposed Corporate and Indirect costs operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	10,529	10,269	10,386	10,386	10,386	31,158
Recommended adjustments			-248	-207	-153	-608
Recommended expenditure			10,138	10,179	10,233	30,550

Source: Deloitte analysis

## 3.4 Operating expenditure activities

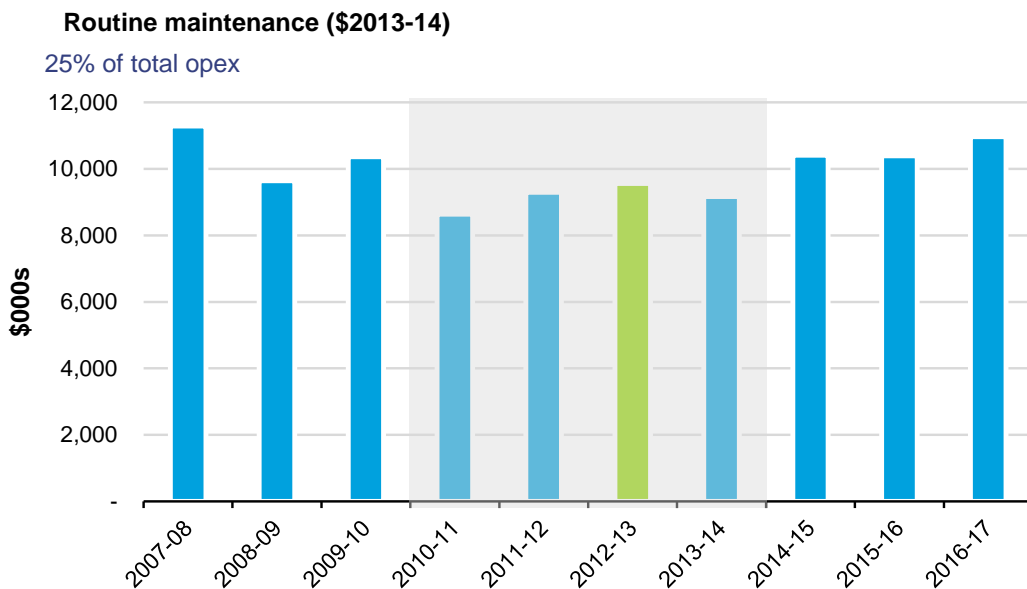
### 3.4.1 Routine maintenance

State Water defines routine maintenance as maintenance activity performed before breakdown to optimise life-cycle costs whilst taking account of work health safety requirements and maintenance audit recommendations. These activities are undertaken on a pre-determined frequency and not in response to asset failures or investigations.

#### State Water proposal

State Water’s proposed routine maintenance represents 25% of State Water’s annual operating expenditure and is the single largest contributor to State Water’s total operating costs (by activity).

**Figure 3-6: State Water’s actual, budgeted and proposed routine maintenance opex (\$2013-14, \$’000)**



Forecast routine maintenance expenditure is:

- Slightly higher (8%) than average annual expenditure for routine maintenance since 2007-08 and 16% higher than average annual expenditure in recent years (since 2010-11)
- Relatively consistent in the first two years of the next regulatory period with an increase (6%) in the final year.

State Water has proposed the largest opex increases in the Murray, Macquarie, Murrumbidgee and Lowbidgee valleys over the next regulatory period.

#### Analysis

We consider State Water’s approach to routine maintenance to be consistent with good practice. State Water has applied a top-down and bottom-up approach to forecasting routine maintenance expenditure, where decision-making follows a logical process and is supported by detailed data gathered in the field. Its strategic approach is guided by its Asset Maintenance Management Policy (2012) and supported by the 2013 Total Asset Management Plan (TAMP) and individual Asset Management Plans. Routine maintenance expenditure items in the Asset Management Plans are derived from data in State Water’s Facilities Maintenance Management System (FMMS).

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State Water's FMMS is used to schedule and record routine maintenance activities on a site-by-site basis. State Water appears to have invested significant effort into improving the use of this system in recent years, recording greater than 90% utilisation of the system in 2012-13. This approach allows for a sound and traceable basis to develop future routine maintenance budgets.

State Water advised that routine maintenance activities are generally scheduled and completed at repeated frequencies according to the manufacturer's service guidelines and maintenance procedures that have evolved over the life of the asset.

The frequency of maintenance activities can range from monthly through to ten years, depending on the activity. It is therefore appropriate to benchmark forecast expenditure against recent expenditure over multiple years, where the utilisation of the FMMS is higher. On this basis we have benchmarked forecast maintenance expenditure against historical expenditure since 2010-11, not expenditure in 2012-13 alone.

State Water is seeking to improve its maintenance scheduling by embarking on a maintenance improvement project, which involves conducting reliability centred maintenance (RCM) analysis of its infrastructure assets.

The RCM approach is relatively new and has only been applied to three assets (dam, weir and a lock). Whilst implementation is only on a pilot scale at this stage, early indications are that historical frequencies are generally consistent with the RCM analysis results at these sites. Full implementation of this approach will provide data to support a more defensible program of maintenance and will be a key input to achieving certification with ISO55001 by 30 June 2018, a requirement of its Operating Licence.

State Water is also working towards a more standardised approach to routine maintenance to improve consistency and redundancy in the business. This will also place the business in a stronger position to achieve certification with ISO55001 by 30 June 2018.

Routine maintenance scheduling is undertaken at least annually and forecast expenditure is detailed in Asset Management Plans, which are reviewed annually. Given this review frequency, it is reasonable to expect that unplanned corrective maintenance activities would reset the schedule for affected routine maintenance activities.

State Water is forecasting an increase in routine maintenance expenditure in the next regulatory period. State water advised that this is primarily due to:

- The need undertake a number of large five and ten year scheduled tasks which have fallen behind in the current regulatory period due to flooding impacts, other higher priority works (e.g. MDBA obligations and delivering capital works), and staff vacancies
- The need to increase routine maintenance activities to maintain assets to the required level
- Inclusion of iSMART maintenance in routine maintenance since 2011-12 instead of water delivery expenditure
- Improved allocation of routine maintenance expenditure.

The justification and supporting data provided for increased routine maintenance expenditure in the Macquarie, Murrumbidgee and Lowbidgee valleys appears reasonable, as we accept the improved allocation of expenditure has led to increases and some catch up maintenance is required which cannot be undertaken within existing resources.

State Water advised that the increase in routine maintenance expenditure in the Murray valley is due to major (five and ten-year) maintenance activities in the Menindee Lakes and the need for additional staff to ensure that assets can be maintained to the required level. Whilst it is reasonable that expenditure is required to undertake major routine maintenance activities, we do not believe there was sufficient evidence provided to support State Water's claim that assets in the Murray valley are not being maintained to the required level (i.e. evidence that service obligations were not being met).

Accordingly, we have reduced annual expenditure in the Murray valley by \$0.17m per annum over the next regulatory period.

### Recommended adjustments

The table below sets the adjustments we have made to State Water’s proposed expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-7: State Water’s proposed routine maintenance operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	9,563	9,167	10,409	10,396	10,969	<b>31,774</b>
Deloitte adjustments			-170	-170	-170	<b>-510</b>
Recommended expenditure			10,239	10,226	10,799	<b>31,264</b>

### 3.4.2 Corrective maintenance

State Water describes corrective maintenance as non-routine maintenance that is performed when a problem occurs that hinders the ability of the structure to provide the designed function, or simply due to a breakdown.

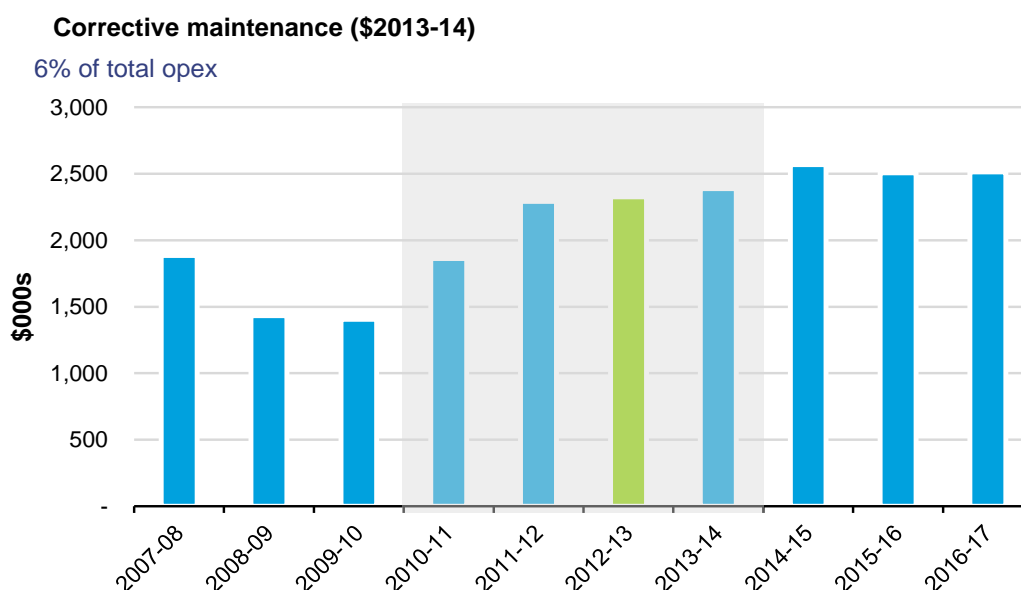
Corrective maintenance:

- Is intended to restore a failed asset to an operational condition within the tolerances and service requirements established for in-service operation
- May require an investigation to determine the most effective approach to fixing the problem and to ensure that the problem does not reoccur on a regular basis.

### State Water proposal

State Water’s proposed corrective maintenance opex represents 6% of forecast operating expenditure over the next regulatory period.

**Figure 3-7: State Water’s actual, budgeted and proposed corrective maintenance opex (\$2013-14, \$’000)**



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Corrective maintenance expenditure is forecast to be 17% more than recent historical average expenditure (since 2010-11). For reasons outlined in the routine maintenance section, we believe it is reasonable to benchmark forecast maintenance expenditure against historical expenditure since 2010-11, not expenditure in 2012-13 alone.

There is a slight decline in forecast corrective maintenance expenditure from the start to the end of the next regulatory period.

Increases in forecast corrective maintenance expenditure are greatest in the Macquarie, Fish River, Lachlan and Lowbidgee valleys over the next regulatory period.

State Water's current practice for allocating corrective maintenance budget is to rely on historical expenditure at each site.

## Analysis

Forecasting corrective maintenance expenditure can be difficult as it is contingent upon unplanned incidents requiring maintenance expenditure, which can be driven by a range of environmental factors such as floods, landslides or other general breakdowns.

Given the level of uncertainty associated with activity, we consider using historical expenditure at each site to forecast corrective maintenance expenditure is a reasonable approach.

State Water's proposed corrective maintenance expenditure is approximately 20% of total maintenance costs (routine + corrective). Whilst this is consistent with recent years, corrective maintenance expenditure should not necessarily increase with routine maintenance expenditure.

Whilst a net increase in corrective maintenance has been forecast for the next regulatory period, expenditure is forecast to decline slightly (\$0.06m) over this period. This is based on an average 2% reduction in corrective maintenance across each valley and reflects anticipated reduction in unplanned corrective maintenance from maintenance scheduling improvements gained through programs such as RCM and improved utilisation of FMMS.

State Water advised that its forecast increase in corrective maintenance expenditure in the next regulatory period is primarily due to:

- An allowance for an increase likelihood of floods, and hence corrective maintenance, as storages are much higher when compared to the commencement of the last determination.
- Valve replacement program in the Fish River scheme due to the findings of a maintenance audit in 2012-13. State Water has commenced a valve replacement program to replace or refurbish the stop valves, pressure release valves and the scour valves. The program is expected to run over the next five to seven years. The cost of each valve is capitalised, but there are numerous valves to be replaced which result in the total cost of the program being \$0.2m per annum.
- Improved allocation of corrective maintenance expenditure into the future.

While State Water has forecast an increase in corrective maintenance expenditure in the Macquarie valley to make an allowance for an increased likelihood of floods, the magnitude of the allowance has not been quantified. It is expected that any increase in corrective maintenance expenditure would be offset by decreased expenditure in routine maintenance, due to reduced access and hence opportunity to undertake routine maintenance. On this basis, we recommend no net increase in maintenance expenditure in the Macquarie valley, and have adjusted forecast corrective maintenance expenditure from \$2.0m to \$1.5m, as it represents the historical average in the current regulatory period (2010-11 to 2012-13).

It is acknowledged that there has been a misallocation between routine and corrective maintenance expenditure in the Lachlan valley since 2007-08 due to operator error. However, given that routine maintenance expenditure is forecast to increase in the next regulatory period it is not reasonable that corrective maintenance expenditure increases as well. Accordingly, we recommend reducing corrective maintenance expenditure in the Lachlan valley from \$0.42m to \$0.26m, to reflect the

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historical average in current regulatory period (2010-11 to 2011-12, 2012-13 has been excluded as it is considered to be an outlier).

The need for the valve replacement program in the Fish River scheme appears reasonable as it is based on findings from a maintenance audit in 2012-13 and detailed in the Fish River Asset Management Plan. However, we consider that such work is simply part of the normal ebb and flow of work requirements and that there are likely to be offsetting reductions elsewhere in State Water's expenditure program. Accordingly we have adjusted State Water's corrective maintenance program for Fish River from \$1.29m to \$0.93m to reflect the historical average expenditure in current regulatory period (2010-11 to 2012-13).

**Table 3-8: State Water's proposed corrective maintenance operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	2,327	2,388	2,568	2,507	2,513	<b>7,587</b>
Deloitte adjustments			-325	-295	-298	<b>-918</b>
Recommended expenditure			2,243	2,212	2,215	<b>6,669</b>

### 3.4.3 Water delivery and other operations

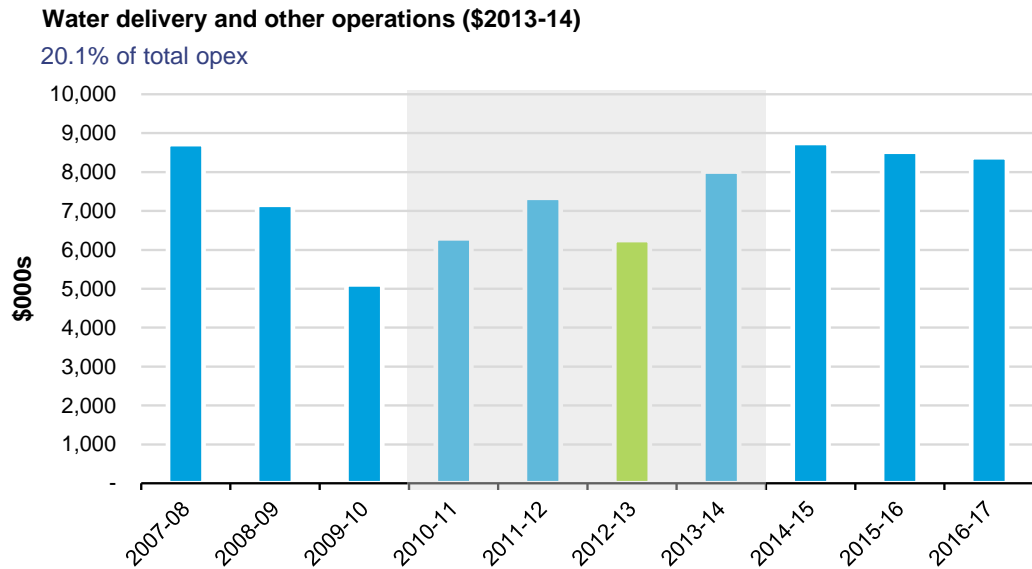
Water Delivery and other operations (Water delivery) is responsible for:

- Managing the release of water from storages to meet regulatory and customer demand
- Analysis of weather patterns, river flows and crop demands (through complex river models in each valley – to manage releases to meet customers and environmental needs)
- Daily operational activities at dam sites and weirs – adjusting flows and recording data.
- Managing storages during floods to mitigate flood impacts, especially at gated storages
- Managing the customer service committee meetings providing updated reports to customers
- Assisting with the planning of environmental flow events
- Compliance reporting
- Supplying and treating water for the Fish River Water Supply Scheme.

#### State Water proposal

State Water's total forecast water delivery opex for the next regulatory period is \$25.6m (or an average \$8.5m per year) which is 20% of total opex. This represents a significant (37%) increase from the 2012-13 baseline of \$6.3m.

**Figure 3-8: State Water’s actual, budgeted and proposed water delivery and other operations opex (\$2013-14, \$’000)**



State Water has attributed the large increase in costs over the next regulatory period primarily to:

- The inclusion of Lowbidgee as a regulated valley
- Reallocation of indirect ICT costs
- New ICT costs associated with CARM and iSMART
- Increased costs in Fish River
- Discretionary projects
- Upgrading of flood and operations and maintenance manuals.

**Lowbidgee**

Lowbidgee was previously an unregulated valley with customers in the region paying an annual fee based on a property based charge. The area was under recovering costs, however, resulting in the decision to incorporate it into the regulated business. State Water proposes that bringing Lowbidgee into the regulated business will add around \$0.23m of water delivery opex per year to the regulated business from 2014-15, based on historical opex for the valley.

**Reallocation of indirect ICT costs**

From 2013-14, around \$0.79m<sup>12</sup> of opex for ICT and data services management costs, including the cost of network connections to NOW, will be allocated directly to Water Delivery. These costs were previously indirect costs that were spread across the broader business.

**New ICT costs**

From 2013-14, opex associated with the implementation of iSMART (\$0.5m) and CARM in Murrumbidgee (\$0.3m) will be charged to Water Delivery, increasing costs by around \$0.8m<sup>13</sup> per annum. State Water proposes that these costs reflect the additional resources required to implement

<sup>12</sup> Includes costs allocated to IPART-regulated valleys

<sup>13</sup> Includes costs allocated to IPART-regulated valleys

these two systems. In particular, State Water proposes that implementing CARM will require the operation of both the old and new river management systems, increasing the workload of staff.

### Fish River costs

Fish River Water Supply (FRWS) is a bulk raw water and treated water piped supply scheme. State Water has advised that opex associated with the management of the system is higher than other valleys due to greater management requirements and input costs of the pipeline and treatment systems.

The table below shows that State Water has forecast an increase in FRWS opex of around \$0.29m, or 35%, in 2013-14, after which opex is expected to remain relatively steady. This proposed increase is based on a return to long-term average supply volumes of 10,551 ML (from 78% of average supply in 2012-13), with commensurate increases in electricity and chemical costs.

**Table 3-9: State water proposed opex, FRWS (\$2013-14, \$'000)**

	2012-13	2013-14	2014-15	2015-16	2016-17
FRWS opex	817	1,106	1,039	1,044	1,075

Source: State Water

State Water advised that it had already sold 3,273 ML in the first 16 weeks of the 2013-14 which, based on a straight-line forecast forward, equates to annual sales of 10,639 ML (not taking into account the upcoming summer months, during which sales are typically highest).

### Discretionary projects

State Water's opex forecasts also include costs associated with a number of discretionary projects requested by Customer Service Committees, which sum to around \$1.26m over the regulatory period.

**Table 3-10: Discretionary water delivery project costs (\$2013-14, \$'000)**

	2014-15	2015-16	2016-17
Macquarie – investigations	200	200	200
Lachlan gauging station	17	17	17
Lachlan – flood panel	5	5	5
Lachlan – investigations	50	50	50
Murrumbidgee – Yanco Creek investigation	125	125	0
Murrumbidgee – Bundigerry Creek investigation	100	100	0
<b>Total</b>	<b>497</b>	<b>497</b>	<b>272</b>

A brief description of the three largest projects is provided below.

#### *Macquarie – investigations*

There are a number of discretionary projects that were considered by the Macquarie Cudgong Customer Service Committee (CSC) in March 2013, however we understand from State Water that the CSC believed that further investigation was warranted before it was in position to endorse these. Therefore \$0.2m per year was set aside for investigations into project costs and benefits.

#### *Murrumbidgee – Yanco Creek investigation*

This project is for investigation work into the construction of a regulator on Yanco Creek and to raise Yanco Weir(s) to provide an on-stream storage. These works would aim to further reduce operational surplus at both Darlot on the Yanco Creek system as well as at Balranald on the Murrumbidgee.

#### *Murrumbidgee – Bundigerry Creek investigation*

This project is for investigation work into the project costs and benefits of establishing two en-route storages to minimise losses and/or capture and reuse off allocation water. The project benefits include improved level of service in terms of timing and volume of delivery, water savings by capturing and reusing river off allocation water, improved State Water river operations through better management

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of supply to Murrumbidgee Irrigation and the flow on of better management of operations to the rest of the valley.

### **Manual updates**

In November 2011, State Water was requested by the Dam Safety Committee to undertake a review of the spillway gate operation procedures for its gated dams in light of floods at Wivenhoe Dam, Queensland. Following an initial review in 2011-12, State Water identified a need to update its operation and maintenance manuals, including its flood manuals, which are over 10 years old. State Water also advised that the manual updates have been identified as a high-risk internal audit auction.

Accordingly, State Water's propose to update manuals for all State Water owned dams at a cost of \$0.5m per annum for each year of the regulatory period.

State Water also noted that since its submission, it had received and assessed tenders from contractors to carry out the manual updates. State Water advised that in light of this information, its revised estimate of the manual update costs is approximately \$460,000, consisting of contractor costs of \$300,000 and internal project management costs of \$160,000.

## **Analysis**

### **Lowbidgee**

State Water proposes that bringing Lowbidgee into the regulated business will add around \$0.23m of water delivery opex per year to the regulated business from 2014-15. The \$0.23m is lower than the last year of actuals of \$0.27m (2011-12) and the 2012-13 budget of \$0.28m. Therefore State Water anticipates water delivery costs to decrease slightly for Lowbidgee. Accordingly, water delivery opex for Lowbidgee appears prudent and efficient.

### **Reallocation of indirect ICT costs**

We consider State Water's decision to reallocate its indirect costs to Water Delivery to be reasonable.

### **New ICT costs**

The capex associated with the Murrumbidgee CARM Pilot has been financed through Government funding, and will be delivered before the next regulatory period. Accordingly, we accept inclusion of opex associated with Murrumbidgee CARMs in the program.

As discussed in section 4.5.2, we consider iSMART expenditure to be prudent and efficient because:

- The approach used to calculating the operational efficiency gains (labour cost savings based on less maintenance callouts and overtime etc.) appears to be logically constructed and reasonable
- iSMART is integral to other aspects of State Water's business transformation program (e.g. Business Intelligence, Murrumbidgee CARMs)
- Installation of modern telemetry equipment is consistent with good industry practice
- Implementation of the project is significantly progressed, with State Water already having invested much of the project budget.

### **Fish River costs**

We accept State Water's assumption that the volume of water supplied to FRWS is likely to increase over the regulatory period to long-term average demand, due to a bounce back in demand from the recent wet conditions.

In relation to electricity costs, we note that recent electricity price rises in NSW have generally been above CPI, and have occurred due to a range of factors including increases in distribution and transmission charges and the inclusion of the carbon price from 1 July 2012.

In relation to network charges, NSW distributors (Essential Energy is largely responsible for State Water's electricity supply) are due to submit proposals to the AER for the next regulatory period to 30

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June 2019 (including a 'transitional' year 2014-15) in 2014. Transgrid, the NSW transmission system owner, also has a regulatory path that expires on 30 June 2014. The electricity network price path to cover State Water's 2014-15 to 2016-17 regulatory period is therefore unknown.

However, from our extensive work in the electricity industry we understand that the NSW distribution businesses, both individually and through Networks NSW, are strongly focussed on improving efficiency and reducing costs. A levelling off in demand for electricity is also likely to decrease augmentation capital expenditure. Low interest rates (and hence a low WACC) in addition to changes to the electricity regulatory regime may also place downward pressure on electricity prices.

Together, these factors suggest it is reasonable to expect that future electricity distribution network price increases in NSW are likely to be lower than in recent years. Indeed we note that Essential Energy has recently undertaken that it will "limit network price increases to CPI or less for the next six years therefore no real increase in prices are expected."<sup>14</sup> We also note that Essential Energy's average distribution prices fell by 1.75% on 1 July 2013.

Less information is available on potential future changes in Transgrid's prices, although the 'X factor' for Transgrid in 2013-14 provided for a 5.61% increase in transmission costs.

On the retail side, we note that the new Commonwealth Government is targeting to remove the carbon price from 1 July 2014, which will reduce retail prices.

In relation to chemical costs, we note that chemical prices have been rising at above the CPI in recent years. However, cost increases for many chemicals are due to higher energy costs (the chlor-alkali production process is energy intensive). Hence, we do not consider it reasonable to forecast future real increases in chemical costs.

On balance, we do not consider that State Water's expectation of a real increase in electricity and chemicals prices is likely to be realised, and that a more reasonable assumption is that prices will remain unchanged in real terms (compared to the base year).

We have therefore adjusted State Water's proposed FRWS opex to reflect this position, resulting in a reduction of around \$18,000 over the regulatory period.

### **Discretionary projects**

The largest of the discretionary projects include investigations at Macquarie (\$0.6m), Yanco Creek (\$0.25) and Bandigerry Creek (\$0.2m). These discretionary projects are for investigative work into further understanding and quantifying the costs and benefits of potential projects as outlined above. We understand from State Water that CSCs had discussed these projects at their respective meetings, and decided that further investigative work into the costs and benefits of projects was warranted before proceeding with any of the discretionary projects put forward. The cost estimates appear to be reasonable and commensurate with investigative type work. Furthermore, advice from State Water that the CSCs had agreed to fund these investigation costs shows a willingness to pay for these costs.

### **Manual updates**

We consider that updating the flood and operations and maintenance manuals is necessary given the time elapsed since the manuals were last updated. Whilst we accept that external contractor costs will be incurred given the scale of the project, we consider that the internal project management costs should be absorbed by State Water. We are of the view that this is simply part of the normal ebb and flow of work requirements.

In recognition of this, we have recommended the removal of the internal project management costs attributable to ACCC valleys (\$147,000 per annum).

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<sup>14</sup> Essential Energy, *Annual network prices report*, May 2013, p. 14

### Recommended adjustments

The table below sets the adjustments we have made to State Water’s proposed water delivery expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-11: State Water’s proposed water delivery and other operations operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	6,252	8,013	8,747	8,521	8,384	25,652
Recommended adjustments			-176	-181	-212	-569
Recommended expenditure			8,571	8,340	8,172	25,083

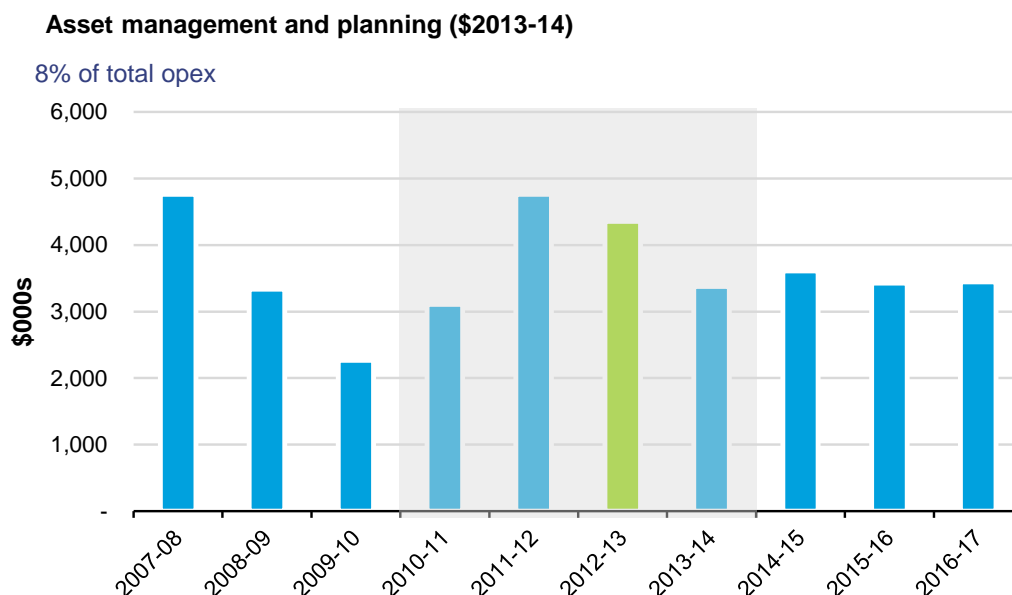
### 3.4.4 Asset management and planning

State Water’s asset management and planning expenditure requirements are detailed and guided by a number of regulatory and legislative instruments, most notably, the *State Water Corporation Act 2004*, the *State Owned Corporations Act 1989* and State Water’s Operating Licence.

### State Water proposal

State Water’s proposed asset management and planning represents 8% of forecast operating expenditure over the next regulatory period.

**Figure 3-9: State Water’s actual, budgeted and proposed asset management and planning opex (\$2013-14, \$’000)**



State Water’s proposed asset management and planning opex is:

- Less (9%) than average annual expenditure (since 2007-08), and considerably less (15%) than recent historical expenditure (2010-11 to 2012-13)
- Relatively consistent over the next regulatory period.

Asset management and planning expenditure forecast for individual valleys is relatively consistent during the next regulatory period. Expenditure is allocated across the valleys according to its relative asset valuation.

The primary activities undertaken in asset management and planning include; asset planning; asset management; and maintenance standards and review.

### Analysis

We are of the view that State Water's approach to asset management and capital planning is clearly documented, logical and consistent with good practice. It is anticipated that the approach will become even more robust as it seeks to certify its asset management system against the new international asset management standard ISO55001 by 30 June 2018, which is a requirement outlined in its new Operating Licence.

We believe State Water's forecast expenditure for asset management and planning is prudent and efficient. State Water has forecast a reduction in expenditure in asset management and planning whilst seeking to meet its recently imposed obligations, such as certification with ISO55001. These savings are due to a reduction in staff members within this group, where positions have been made redundant.

State Water's prudent approach has been further demonstrated by leveraging partnerships and relationships with other organisations, such as universities, in asset management and planning.

### Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water's proposed asset management and planning costs.

**Table 3-12: State Water's proposed asset management and planning expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	4,357	3,377	3,608	3,427	3,448	<b>10,483</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			3,608	3,427	3,448	<b>10,483</b>

### 3.4.5 Metering and compliance

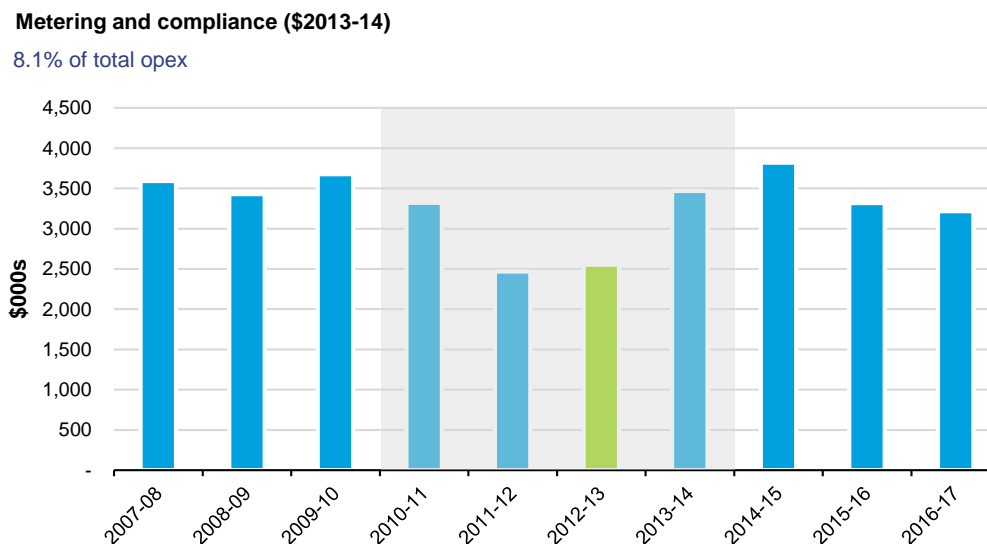
Metering and compliance activities are undertaken by State Water to ensure all water is extracted in accordance with the a wide array of legislation, rules and regulations, e.g. *Water Act 2007*, *State Water Corporation Act 2004*, *IPART Act 1992*.

#### State Water proposal

State Water's forecast metering and compliance opex for the next regulatory period is \$10.4m (or on average \$3.5m per year) which is 8% of total opex.

This represents a \$0.9m per year (35%) increase from the 2012-13 baseline of \$2.5m.

**Figure 3-10: State Water's actual, budgeted and proposed metering and compliance opex (\$2013-14, \$'000)**



State Water's reasons for the large step increases it has forecast in 2013-14 and 2014-15 are costs associated with:

- NSW Metering Program
- Reallocation of costs
- Crop statistics collection
- Other drivers.

These costs will be partially offset by a shift in resource costs to other activities as a result of the rollout of telemetered meters, leading to reductions of staffing numbers in 2015-16, reflected to an extent in the opex profile shown above.

#### **NSW Metering Program**

The state-wide rollout of meters is an obligation placed on State Water under the NSW Metering Scheme, which is a commitment to ensure the state meets the metering standards set out in the National Water Initiative.

This rollout has commenced, with State Water expecting to have 900 meters installed in regulated water sources by the end of 2012-13, increasing to 3,000 by the end of 2016-17. In unregulated and groundwater systems, approximately 5,600 meters are expected to be installed by the end of 2016-17.

State Water proposes that the NSW Metering Program is expected to increase costs in:

- 2013-14 due to an additional data analyst FTE required to collate and review data generated by the new meters (approximately \$190,000<sup>15</sup> p.a.)
- 2014-15 due to a new compliance and education officer (1.1 FTEs) resources required to manage customer enquiries, complaints and water accounting usage issues etc. (approximately \$190,000<sup>16</sup> p.a.)

<sup>15</sup> Includes costs allocated to IPART-regulated valleys

<sup>16</sup> Includes costs allocated to IPART-regulated valleys



### Reallocation of costs

State Water suggests that in 2013-14, costs are expected to increase by around \$472,000<sup>17</sup> due to increased allocation of motor vehicle and corporate overhead costs in line with increased staff numbers.

### Crop statistics collection

State Water has indicated that from 2014-15, the NSW Office of Water will require it to collect crop statistics from irrigation customers up to four times per year due to a requirement in the Lachlan and Border Rivers Water Supply Work Approvals.

State Water proposes that this new requirement will create the need for an additional FTE, increasing costs by \$173,000<sup>18</sup> from 2014-15.

### Other drivers

Other drivers of cost identified by State Water are the:

- Reassignment off 2.4 FTEs from Customer Support in 2013-14
- The implementation of the MDB plan, which is expected to increase resourcing costs by \$15,000 in 2015-16 and \$83,000 in 2016-17.

## Analysis

The increases proposed by State Water in this area are related to additional wages and salary expenditure. We have already assessed wages and salaries in Section 3.3.1 and made necessary adjustments to ensure prudence and efficiency of wage and salary opex. Therefore we have not made any further adjustments to salaries and wages in the metering and compliance activity.

## Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water's metering and compliance proposed costs.

**Table 3-13: State Water's proposed metering and compliance operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	2,553	3,467	3,820	3,317	3,216	<b>10,353</b>
Recommended adjustments			0	0	0	<b>0</b>
Recommended expenditure			3,820	3,317	3,216	<b>10,353</b>

### 3.4.6 Water quality monitoring

State Water undertakes water quality monitoring activities on its operations including; algal monitoring, cold water pollution monitoring, water chemistry, dam seepage, drinking water and potable water.

The water quality monitoring function includes the activities of:

- Implementing State Water's strategic water quality monitoring program
- Maintain and review monitoring procedures

<sup>17</sup> Includes costs allocated to IPART-regulated valleys

<sup>18</sup> Includes costs allocated to IPART-regulated valleys

- Procure, maintain and calibrate monitoring equipment
- Staff training
- Laboratory analysis of water samples
- Data management and reporting.

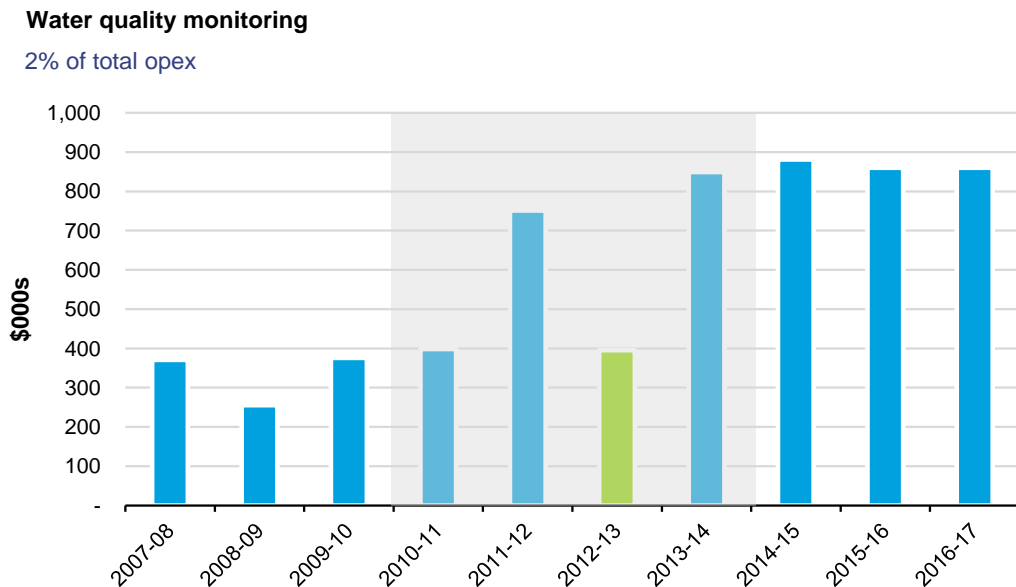
State Water has submitted that the requirement to undertake water quality monitoring is linked to its obligation outlined in the previous operating licence to manage and mitigate water quality issues associated with storage and release. While the new operating licence does not state this explicitly, we understand that having a certified Environmental Management System will place a similar on-going obligation on State Water.

### State Water proposal

State Water’s water quality monitoring forecast opex for the next regulatory period is \$2.6m (or an average \$0.85m per year) which is 2% of total opex.

This represents an annual average increase of \$0.40m from 2012-13 and a total \$1.2m in additional costs across the next regulatory period.

**Figure 3-11: State Water’s actual, budgeted and proposed water quality monitoring opex (\$2013-14, \$’000)**



State Water’s has attributed the large increase in opex it has forecast from 2013-14 to:

- Increased sampling costs
- Additional staffing requirements

#### Increased sampling costs

State Water has advised that sampling and laboratory testing costs account for approximately 72% of its proposed water quality monitoring (WQM) opex.

State Water attributed the low opex in 2012-13 to a low instance of algal blooms caused by weather conditions, resulting in reductions in sampling costs. State Water also noted that in times of low storage levels (i.e. 2007-08 to 2009-10) sampling costs were relatively low due to the less sampling required in these years.

State Water does not, however, expect this trend to continue and has assumed that a return to ‘normal’ sampling levels (i.e. as experienced in 2011-12) will contribute to the cost increases it has forecast from 2013-14.

#### Additional staffing requirements

State Water has included the cost of an additional FTE from 2013-14 (approximately 20% of proposed opex for this activity) to:

- Comply with the *Public Health Act 2010 (NSW)*, which stipulates that drinking water supply systems have an approved Drinking Water Management Plan in place by September 2014, requiring the development and implementation of a drinking water quality monitoring program.
- Establish procedures and calibration systems to ensure the water quality monitoring program complies with the Environmental Management System (discussed in the next section).

### Analysis

State Water advised that in 2011-12:

- Laboratory costs were around \$200,000 higher than normal due to a failure to accrue these costs in the previous year and therefore the need to make a double payment.
- The Lake Brewster WQM Program was established (a condition of a Commonwealth funding agreement) at a cost of \$30,000 per annum.

Accordingly, the particularly high opex in 2011-12 is attributable to these one-off factors, rather than being reflective of a normal level of sampling. The below table shows State Water’s historical opex adjusted to remove the laboratory cost double payment and its sampling statistics from 2010-11 to 2012-13.

**Table 3-14: State Water Blue green algal samples and WQM opex, 2010-11 to 2012-13 (\$’000)**

	2010-11	2011-12	2012-13
Algal samples analysed	1,551	1,473	1,217
WQM opex	630	588	405

Source: State Water

While State Water advised that sampling costs are not necessarily proportional to sample numbers due to the high cost of some individual algal samples, the above table suggests a clear correlation between sample numbers and cost.

Forecasting algal sample numbers to provide an indication of forward opex is difficult, however, due to the complex relationship between algal blooms and environmental factors, principally rainfall, inflows and temperature.

Despite the difficulties inherent in forecasting weather conditions over the long-term, State Water agreed that is likely there will be movement away from the flood conditions experienced during 2010-11 and 2011-12 to more “normal weather patterns” over the next regulatory period.

We are of the view that of the three years presented in the above table, 2012-13 is likely to be the most reflective of normal weather conditions, given the high rainfall and flooding that took place during 2010-11 and 2011-12.

We therefore consider that WQM opex during 2012-13 should be used as the basis for forward projections. However, we have also included a small provision of \$50,000 per annum to reflect the fact that above ‘average’ samples might be required in one or more years.

Accordingly, we recommend limiting cost increases above 2012-13 levels to this allowance plus the costs associated with the additional FTE required to develop the WQMP and establish EMS procedures and calibration systems (noting that we have dealt with salaries and wages costs in Section 3.3.1).

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### Recommended adjustments

The table below sets the adjustments we have made to State Water's proposed expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-15: State Water's proposed water quality monitoring operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	405	849	881	860	860	<b>2,601</b>
Recommended adjustments			-260	-239	-239	<b>-738</b>
Recommended expenditure			621	621	621	<b>1,863</b>

### 3.4.7 Environmental management and protection

Environmental management and protection is made up of the sub-categories of environmental compliance, heritage management, environmental management system (EMS) and fish passage.

Environmental compliance activities include maintenance of plans, programs, projects, procedures and tools (ensuring compliance with legislation), environmental audits of works and compliance with NSW Government Sustainability policy.

Heritage management activities include implementation of the Heritage Management Framework, development of heritage conservation management plans (for state-significant heritage assets) and finalisation of cultural heritage and strategy.

Environmental Management System activities include developing, implementing and certifying an EMS.

Fish passage activities include implementing the operational aspects of Fish Superhighways (predominantly monitoring the effectiveness of fish ways).

### State Water proposal

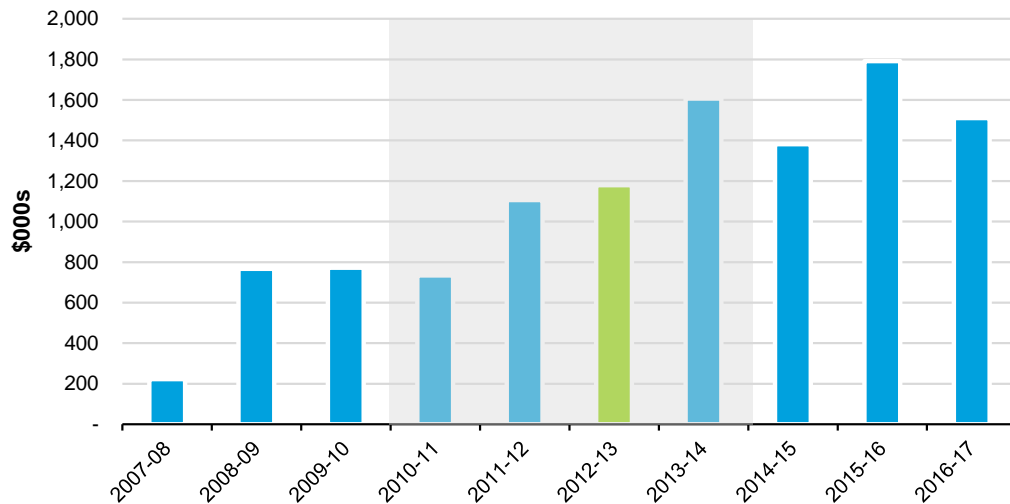
State Water's proposed opex for the three years of the next regulatory period is \$4.6m which is 4% of total opex. This translates to average annual opex of \$1.6m, which is 29% higher than the 2012-13 opex of \$1.4m.

The majority of this increase, however, is forecast to occur in 2015-16 which is 48% higher than the baseline.

**Figure 3-12: State Water’s actual, budgeted and proposed environmental planning and protection opex (\$2013-14, \$’000)**

**Environmental planning and protection (\$2013-14)**

3.7% of total opex



State Water has attributed the increased costs from 2013-14 to the development, implementation and certification of an EMS, which is a requirement of its new operating licence.

These additional costs are solely professional services fees (i.e. no additional FTEs) associated with the development, implementation, certification and on-going audit of the EMS. The particularly high opex projected for 2015-16 is due to State Water budgeting to have the EMS certified in that year.

State Water advised that it intended to certify the EMS in 2015-16 to:

- Minimise the risk of not complying with its regulatory obligation
- Achieve efficiencies and improved environmental management
- Reduce costs of continuing to demonstrate compliance with its current operating licence

State Water’s proposed approach to certifying its EMS is to set the system up from 2013-14 to 2015-16 before having it certified through an audit process in 2015-16. State Water’s proposed professional services and internal costs associated with this approach are set out in the table below:

**Table 3-16: State Water’s proposed EMS costs**

Year	Internal Costs	Professional Services	Comments
2013-14	86	99	Set-up cost split across first 3 years
2014-15	86	99	Set-up cost split across first 3 years
2015-16	110	181	Includes a third of set-up cost, certification audit
2016-17	77	82	Internal costs for documentation compliance plus annual audit & fees
2017-18	77	82	Internal costs for documentation compliance plus annual audit & fees
2018-19	101	144	Internal costs for documentation compliance plus re-certification audit & fees
<b>Total</b>	<b>535</b>	<b>686</b>	

Source: State Water

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## Analysis

State Water's operational licence 2013-18, specifies that State Water must develop a Management System and have it certified to ISO4001:2004 standard by June 2018 by a qualified third party

According to a cost-benefit analysis performed by IPART:<sup>19</sup>

- The cost of implementation of a certified EMS is \$1.14m over five years (or \$0.23m each year), including internal and professional services costs
- The benefits of implementation include a \$69,000 saving over five years due to reduction in auditing requirements, wider un-quantified benefits (e.g. better environmental outcomes and operational efficiency) and economies of scope with other management systems.

While we consider developing and implementing the EMS to be prudent, we are of the view that certification could, however, be delayed until 2017-18, rather than taking place in 2015-16. We do, however, accept that there will be some preparatory costs incurred prior to certification. Accordingly, we have allowed some expenditure in 2014-15 and 2015-16 to finalise setup of the system, as well as in 2016-17 for system development and implementation.

We are of the view that this approach, which will reduce expenditure by around \$80,000, will not preclude State Water from complying with its regulatory obligations. Should State Water elect to proceed with certification prior to 2017-18, to the extent the identified benefits exceed the certification costs, it will stand to gain.

## Recommended adjustments

The table below sets the adjustments we have made to State Water's proposed expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-17: State Water's proposed environmental planning and protection operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	1,209	1,607	1,382	1,791	1,510	<b>4,682</b>
Recommended adjustments			0	-82	0	<b>-82</b>
Recommended expenditure			1,382	1,709	1,510	<b>4,600</b>

### 3.4.8 Insurance

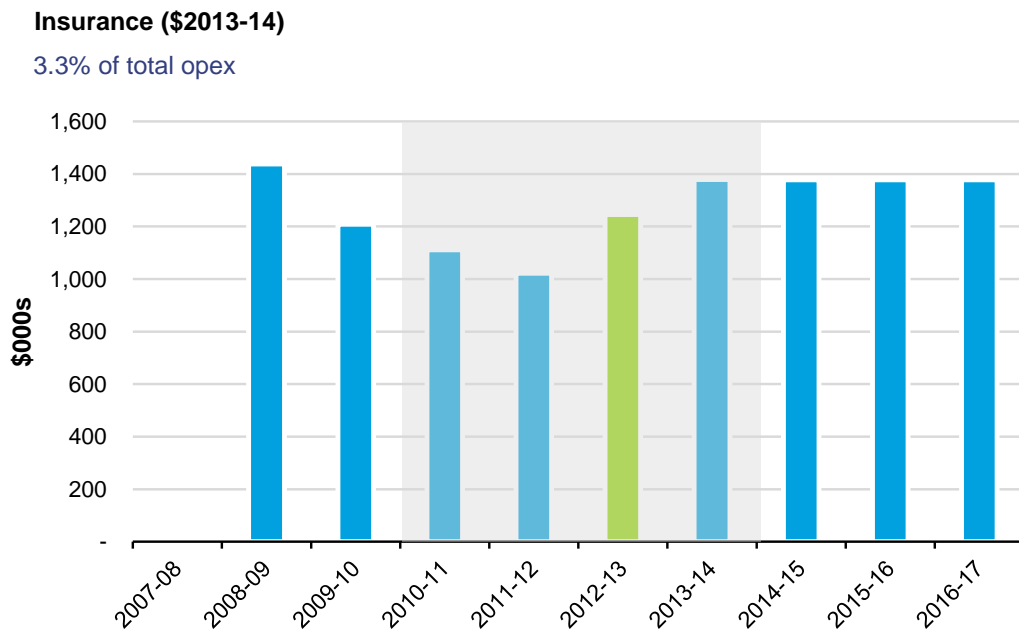
#### State Water proposal

State Water's forecast insurance opex for the three years of the next regulatory period is \$4.1m (or an average \$1.38m per year) which is 3.3% of total opex over the period.

On average each forecast year is \$0.332m (or 32%) higher than the 2012-13 baseline of \$1.05m.

<sup>19</sup> IPART, *Cost benefit analysis of proposed changes to State Water Corporation's operating licence*, p11

**Figure 3-13: State Water’s actual, budgeted and proposed insurance opex (\$2013-14, \$’000)**



State Water is provided with insurance services from Treasury Managed Funds (TMF), which is the insurance fund for NSW Government entities. From 2013-14, membership of this fund is required, unless existing insurance arrangements matched those of the TMF in relation to cover and price.

State Water attributes its increased insurance costs (premiums) from 2013-14 to:

- An increase in the value of its asset base: State Water’s assets as at 1 July 2008 were valued at \$3.6 billion, compared with \$4.3 billion as at 30 June 2013
- A number of recent claims, including a landslide at the Burrinjuck Dam in December 2010, as TMF is a hindsight fund
- Reinsurance costs.

State Water advised that its current TMF insurance policy costs \$0.44 per \$1,000 of cover, which compares with:

- Its insurance costs at the last determination (\$0.38 per \$1,000 of cover)
- Insurance costs currently being paid by other state-owned corporations **not** insured with TMF (\$0.56 to \$0.78 per \$1,000 of cover)

### Analysis

Although the 2013-14 step increase in insurance costs is large (32%), State Water:

- Is obliged to insure with TMF, which means it is not able to attempt to procure a more competitive policy from the market.
- Has provided sufficient justification for why its premiums have increased.

### Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water's proposed insurance costs.

**Table 3-18: State Water's proposed insurance operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	1,246	1,378	1,378	1,378	1,378	<b>4,134</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			1,378	1,378	1,378	<b>4,134</b>

### 3.4.9 Customer support

State Water undertakes customer support activities to provide customers with an opportunity to discuss operational and asset management issues, including pricing and levels of service for water users. This is usually performed through planned valley-based CSCs meetings four times per year. The requirement to maintain these committees is stipulated in State Water's operating licence.

Customer support is also provided by a number of other means:

- Helpdesk for transactional processing and enquires
- Field staff
- Education for assisting customers and staff
- Online services.

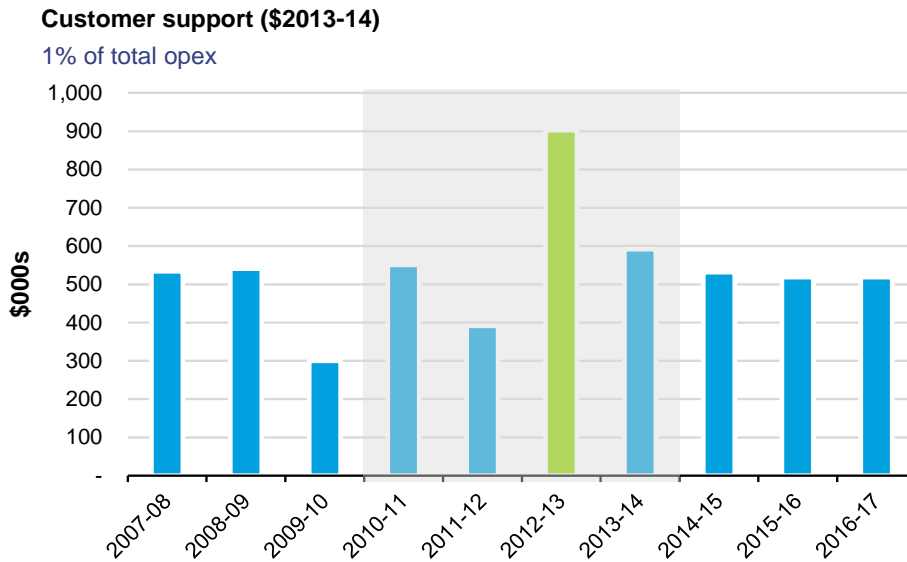
### State Water proposal

State Water has proposed customer support opex of \$1.6m over the regulatory period, accounting for around 1% of total opex.

On average, this represents annual expenditure of \$0.51m, a reduction of 46% compared to the \$0.9m of expenditure in 2012-13.



**Figure 3-14: State Water’s actual, budgeted and proposed customer support opex (\$2013-14, \$’000)**



State Water has attributed the unusually high opex in 2012-13 to a reallocation of a significant amount of staff time directly to customer support, rather than to Indirect Costs, which is not expected to recur.

As discussed in section 3.4.5, the reassignment of staff from customer support to metering and compliance has also reduced costs from 2013-14.

### Analysis

State Water’s customer support costs have fluctuated significantly, from \$0.3m in 2009-10 to \$0.9m in 2012-13, with proposed costs in the order of \$0.5m per annum.

State Water advised that despite this variation, the costs it has proposed over the next regulatory period reflect a level of customer consultation that customers are willing to pay for. While we have not been able to independently verify this claim, the breakdown of customer support costs provided by State Water appears to accurately reflect its ongoing expenditure in this area.

Accordingly, we accept State Water’s forecast customer support expenditure of \$531,000 in 2014-15 and \$519,000 thereafter.

### Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water’s proposed customer support costs.

**Table 3-19: State Water’s proposed customer support operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	903	592	531	519	519	1,569
Recommended adjustments			0	0	0	0
Recommended expenditure			531	519	519	1,569

### 3.4.10 Customer billing

Customer billing activities include:

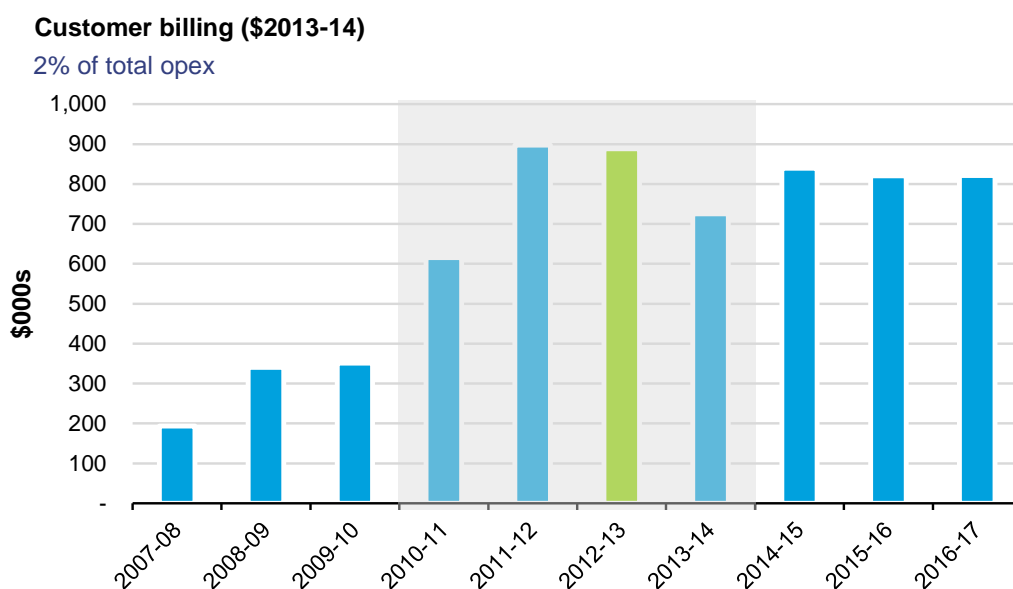
- Responding to customer enquiries
- Transaction and complaints
- Services (Helpdesk)
- Invoicing
- Receipting
- Debtor management system administration
- postage to collect regulated revenue.

#### State Water proposal

State Water has proposed customer billing opex of \$2.5m over the regulatory period, accounting for around 2% of total opex.

On average, this represents annual expenditure of \$0.82m, a reduction of 7% compared to the \$0.89m of expenditure in 2012-13.

**Figure 3-15: State Water’s actual, budgeted and proposed customer billing opex (\$2013-14, \$’000)**



#### Analysis

State Water has not identified any drivers of its proposed opex over the regulatory period. In the absence of increases against the baseline, we therefore consider its proposed opex to be reasonable.

### Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water’s proposed customer billing costs.

**Table 3-20: State Water’s proposed customer billing operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	888	726	840	820	821	<b>2,481</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			840	820	821	<b>2,481</b>

### 3.4.11 Corporate systems & internal projects

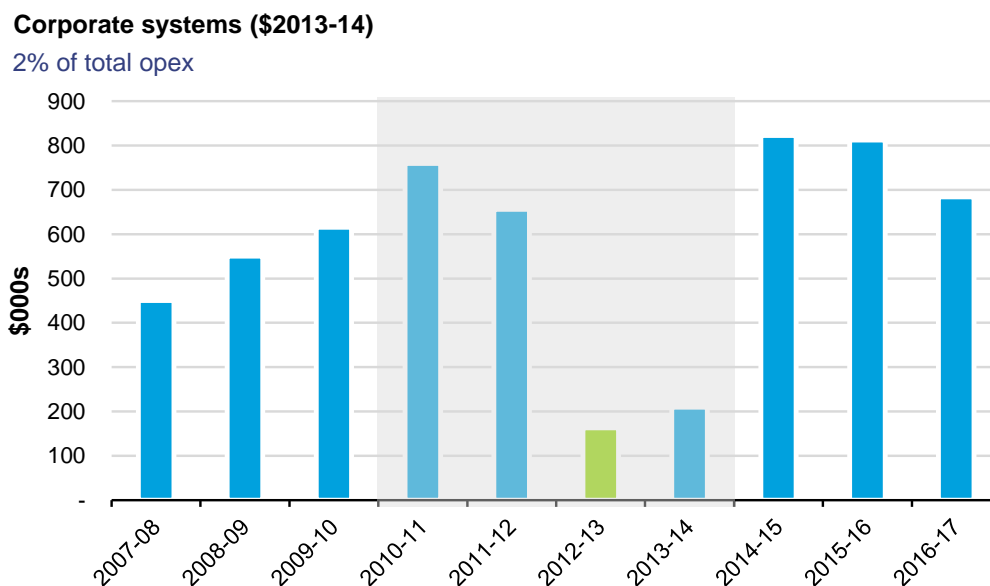
Corporate systems and internal projects (corporate systems) costs include opex associated with ICT projects, as well as internal project costs, which are primarily consultancy costs.

#### State Water Proposal

State Water has proposed corporate systems opex of \$2.3m over the regulatory period, accounting for around 2% of total opex.

On average, this represents annual expenditure of \$0.77m, a fourfold increase on the \$0.16m of expenditure in 2012-13.

**Figure 3-16: State Water’s actual, budgeted and proposed corporate systems opex (\$2013-14, \$’000)**



State Water’s justification for the large increase in opex compared to the base year is based on:

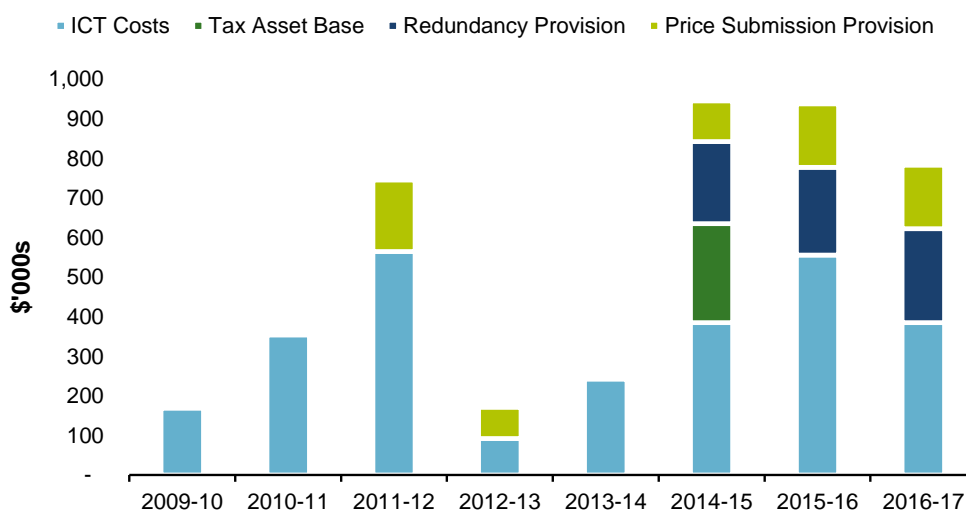
- Increases in ICT costs associated with the modernisation of existing ICT infrastructure & services, the implementation of iSMART and security and desktop software upgrades (discussed further in section 4.3)
- A corporate wide redundancy funding provision to phase down resources in particular areas of the business as opportunities arise

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- Consultancy costs associated with the regulatory period beginning in 2017-18, including the development of a Tax Asset Base, as requested by the ACCC, and for future regulatory submissions to the ACCC and IPART.

The below figure sets out these costs, which include the costs allocated to IPART-regulated valleys.

**Figure 3-17: State Water’s actual, budgeted and proposed corporate systems opex (\$2013-14, \$’000)**



Source: State Water

### Analysis

Due to the large-scale and ongoing nature of the Business Transformation Program (BTP), we understand that the corporate systems environment will be comprised of both legacy and “new” systems requiring support and upgrade for a period of time. This is expected to increase opex during the implementation phase and until full replacement of all systems is finalised and a lower and more stable opex may be achieved. Accordingly, we consider the ICT costs proposed by State Water to be prudent and efficient.

We are of the view that State Water’s proposal to include in its projected opex a redundancy provision to ‘phase down resources in particular areas of the business as opportunities arise’ is not prudent and efficient. Given that the purpose of redundancies is to remove the costs of positions considered to be no longer required, we would expect any redundancy costs to be offset by salaries and wages savings. Accordingly, we have removed all costs associated with the Redundancy Provision (approximately \$578,000 prorated to ACCC valleys).

State Water’s proposed costs to develop a tax asset base appear reasonable given the diverse and numerous assets it owns. Given that the tax asset base is required for the next regulatory determination with IPART, the proposed timing of the expenditure in 2014-15 also appears appropriate.

State Water noted that since its submission, however, it has revised its estimate of the tax asset base costs from \$250,000 to approximately \$190,000, around \$165,000 of which applies to ACCC-regulated valleys. This revised cost estimate has been reflected in our recommended expenditure.

While we accept that State Water will incur costs engaging consultants to assist with its submission for the regulatory period commencing in 2017-18, we are of the view that these costs are not likely to be incurred before 2015-16. Accordingly, we have removed costs associated with the Price Submission Provision in 2014-15 (approximately \$89,000 prorated to ACCC valleys).

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### Recommended adjustments

The table below sets out the adjustments we have made to State Water’s proposed expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-21: State Water’s proposed corporate systems and internal projects operating expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	163	209	823	812	684	<b>2,319</b>
Recommended adjustments			-269	-191	-206	<b>-667</b>
Recommended expenditure			553	621	478	<b>1,651</b>

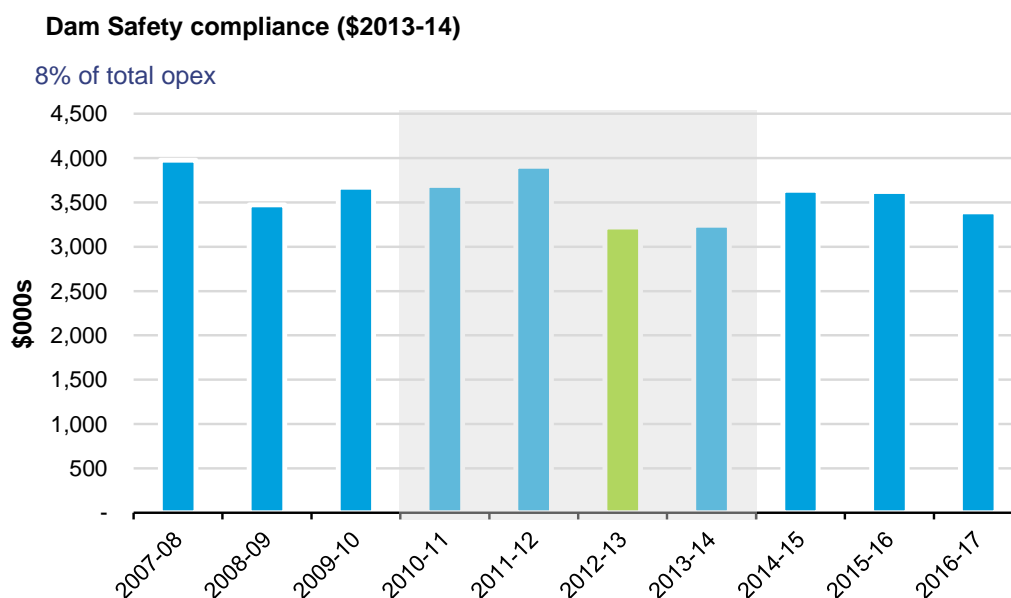
### 3.4.12 Dam safety compliance

#### State Water Proposal

State Water has proposed dam safety compliance opex of \$10.4m over the regulatory period, accounting for around 9% of total opex.

On average, this represents annual expenditure of \$3.47m, an increase on the \$3.17m of expenditure in 2012-13.

**Figure 3-18: State Water’s actual, budgeted and proposed dam safety compliance opex (\$2013-14, \$’000)**



The driver behind State Water proposed dam safety compliance opex is to minimise State Water’s dam safety risks. This is achieved by implementing what is claimed to be world’s best practice dam engineering and complying with the requirements of the dam safety regulator.

Consistent with the requirements set out in State Water’s operating licence and Dams Safety Act 1978; dam safety management is governed by guidance sheets provided by the NSW Dam Safety Committee (DSC) and the Australian National Committee of Large Dams (ANCOLD). In accordance with the spirit of the guidance sheets published by the DSC, all plant and equipment must be maintained so they are available to operate reliably when called upon in an emergency situation. The requirement for critical assets to operate reliably in emergency or dam safety situation is a major driver for State Water’s maintenance program.

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State Water develops surveillance programs and undertakes inspections, audits and five-yearly safety reviews to ensure compliance with established procedures, including the requirements of the Dams Safety Act (1978) and NSW Treasury Government Asset Management Committee guidelines. This involves annual (intermediate) surveillance inspections and comprehensive (five-yearly) surveillance inspections in accordance with the ANCOLD dam safety management guidelines 2003, DSC regulatory requirements and current dam engineering best practice.

The results of the comprehensive inspections are reported to the DSC.

The increases in the proposed operating cost expenditure above the baseline are due to ALARP safety investigation projects. These investigations are undertaken to assist in substantiating the case that no further capital works are needed. This includes investigations on Burrinjuck Dam, Brogo Dam, Lostock Dam, Windamere Lakes, Glennies Creek Dam, Glenbawn dam and Carcoar Dam.

### Analysis

We are satisfied that the work to assess Dam risks and therefore the possibility of deferral or removal of Dam Safety capex is appropriate and has potential to reduce long term expenditure requirements. State Water was able to identify a number of cases where this was the case. We therefore believe the increase in dam safety compliance expenditure is reasonable.

### Recommended adjustments

There are no recommended adjustments as the increased costs in dam safety compliance expenditure are considered to be prudent and efficient.

This is because the additional investigations form part of a risk-based management approach working towards compliance over a period of time. This is in keeping with State Water's dam safety upgrade program which is a staged risk reduction program that relies on the progressive improvement principles under the DSC's risk policy framework (2006).

**Table 3-22: State Water's proposed dam safety operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	3,223	3,241	3,638	3,623	3,392	10,652
Recommended adjustments			-	-	-	-
Recommended expenditure			3,638	3,623	3,392	10,652

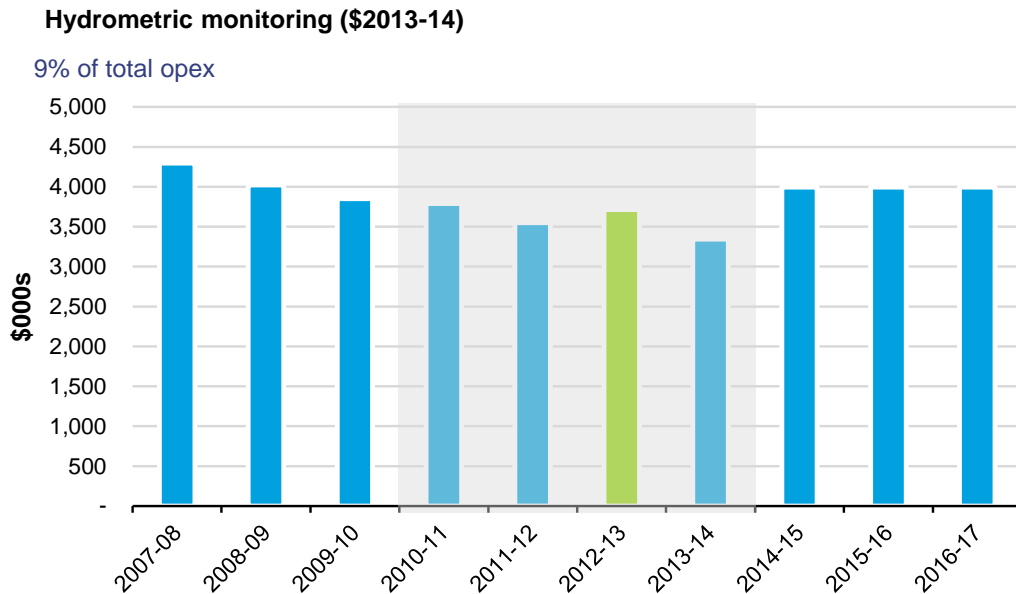
### 3.4.13 Hydrometric monitoring

#### State Water proposal

State Water initially proposed Hydrometric Monitoring opex of \$11.98m over the regulatory period, accounting for around 10.4% of total opex.

On average, this represents annual expenditure of \$3.99m, an increase on the \$3.62m of expenditure in 2012-13.

**Figure 3-19: State Water’s actual, budgeted and proposed Hydrometric Monitoring operating expenditure (\$2013-14, \$’000)**



The hydrometric monitoring services used by State Water are purchased solely from NOW and include:

- Measurement of hydro-meteorological information for the assessment and management of surface water resources so that State Water can manage and deliver water to its customers in an accurate and timely manner
- Field activities conducted in the course of routine maintenance of site infrastructure, instrumentation and site operation as well as routine field measurements
- Checking and validation of information collected.

The increased Hydrometric monitoring costs identified by State Water are driven by a number of new hydrometric services initiated by State Water designed to provide water to the environment and to improve water delivery efficiency. Some of this additional expenditure is associated with the CARMS project pilot in the Murrumbidgee.

- Upper Murrumbidgee Rainfall and Level Sites (\$101,000 p.a.)
- Doppler equipment at Murrumbidgee Sites (\$22,500 p.a.)
- Seven new hydrometric sites (\$119,000 p.a.).

### Analysis

There is a regulatory requirement for State Water to monitor and report stream flow information to a range of parties. In order to provide this information hydrometric services are provided to State Water by NOW under a service level agreement. State Water has limited opportunity to purchase these services from other service providers due to ownership of the equipment resting with NOW in many cases, and legacy data warehousing issues. It is therefore somewhat ‘captive’ to the charges set by NOW.

At the same time, the increases in costs are largely associated with new monitoring sites proposed by State Water, and hence operating costs are within its control to some extent, particularly in the long term. However, as the new monitoring sites have been proposed by State Water to provide water to

the environment and to improve water delivery efficiency, we consider the cost increases prudent and efficient.

### Recommended adjustments

As shown by the below table, we have not made any adjustments to State Water's proposed hydrometric monitoring costs.

**Table 3-23: State Water's proposed Hydrometric Monitoring operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	3,714	3,343	3,994	3,994	3,994	<b>11,983</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			3,994	3,994	3,994	<b>11,983</b>

### 3.4.14 Metering Service Charge costs

#### State water proposal

State Water proposes to recover the operating and maintenance costs of the meters currently being rolled out as part of the NSW Metering Program through a Metering Service Charge (MSC). State Water considered that a MSC was preferable to incorporating these costs within regulated operating expenditure for a number of reasons, including that doing so removes any cross subsidy between users of small and large meters.

Due to the early stage of the NSW Metering Project, actual operating and maintenance costs were not available. Accordingly, State Water developed estimates of these costs based on available data regarding telemetry, routine and corrective maintenance, asset planning and audit and reporting costs. For example, telemetry costs are assumed to be equal to the lowest cost Telstra data plan available.

State Water notes in its submission that the costs it has estimated allow for meters to be maintained in accordance with the national Metrological Assurance Framework (MAF) and Australian Standard 4747: Meters for non-urban water supply. State Water also notes that these cost estimates were subject to a peer review by Adasa, an engineering consultancy.

The output of State Water's cost estimation exercise was a range of MSCs which vary depending on:

- Meter size
- Whether meters are:
  - Located in regulated sources or groundwater or unregulated sources
  - Commonwealth-funded or funded by State Water
  - Fitted with telemetry.

State Water engaged engineering consultancy Adasa to perform a peer-review of its initial cost estimates underlying the MSC. The purpose of this review was to provide guidance to improve the quality of the cost estimates having regard to:

- Benchmarking with similar systems in other jurisdictions
- Industry best practices
- Consistency with the "National Framework for Non-urban Water Metering Policy Paper" and the new Australian Standard AS 4747 for non-urban water supply.



Adasa found that State Water's initial cost estimates were insufficient, and therefore included a number of additional cost items and revised unit rates in its recommended costs. We understand that these recommendations were taken into account by State Water when developing its proposed MSC.

### Analysis

In assessing State Water's proposed MSC costs, we have had regard to the approach taken by State Water to develop its cost estimates, rather than assessed each individual cost component or MSC charge. We have taken this approach due to a lack of available benchmark data with respect to the ongoing operating and maintenance costs meters. Further, the large number of individual cost items underpinning each MSC charge makes an assessment of each cost item or charge not practicable.

We consider the proposed MSCs to be reasonable on the basis that State Water developed the underlying costs through a detailed and transparent, bottom-up approach that takes into account the relevant cost items, is based on appropriate data sources (e.g. manufacturer data, internal and consultant estimates based on industry experience etc.) and have been subject to an independent peer review process.

We note, however, that State Water has not proposed an ongoing efficiency saving in its proposed MSC costs. Due to the nature of the MSC costs (e.g. labour, ICT parts and materials), we are of the view that the 1 per cent efficiency saving recommended in section 2.3 should also be applied to these costs. This translates to an efficiency saving of approximately \$0.36m.

**Table 3-24: Deloitte recommended efficiency savings, MSC (\$2013-14, \$'000) (\$2013-14, \$'000)**

	2014-15	2015-16	2016-17	Total
Metering service charge revenue forecast	4,934	6,686	8,027	<b>19,647</b>
<b>Cumulative efficiency saving (\$)</b>	<b>-49</b>	<b>-116</b>	<b>-195</b>	<b>-360</b>
<b>Cumulative efficiency saving (%)</b>	<b>-1%</b>	<b>-2%</b>	<b>-2%</b>	<b>-2%</b>

Source: Deloitte analysis

Finally, should the ACCC recommend an adjustment to State Water's proposed WACC, the WACC used to determine the capital costs of State-Water funded meters will need to be adjusted accordingly.

### 3.5 Recommended operating expenditure

The table below summarises the adjustments we have made to State Water's proposed operating expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 3-25: State Water's proposed operating expenditure and our recommended expenditure (\$2013-14, \$'000)**

All valleys	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	37,053	38,358	42,619	41,965	41,687	<b>126,271</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-919	-765	-567	<b>-2,252</b>
Corporate and indirect costs			-248	-207	-153	<b>-608</b>
<b>Activities</b>						
Customer Support			0	0	0	<b>0</b>
Customer Billing			0	0	0	<b>0</b>
Metering and Compliance			0	0	0	<b>0</b>
Water Delivery and Other Operations			-176	-181	-212	<b>-569</b>
Flood Operations			0	0	0	<b>0</b>
Hydrometric Monitoring			0	0	0	<b>0</b>
Water Quality Monitoring			-260	-239	-239	<b>-738</b>
Corrective Maintenance			-325	-295	-298	<b>-918</b>
Routine Maintenance			-170	-170	-170	<b>-510</b>
Asset Management and Planning			0	0	0	<b>0</b>
Dam Safety Compliance			0	0	0	<b>0</b>
Environmental Planning and Protection			0	-82	0	<b>-82</b>
Insurance			0	0	0	<b>0</b>
Corporate Systems and Internal Projects			-269	-191	-206	<b>-667</b>
<b>Efficiency savings</b>			<b>-146</b>	<b>-284</b>	<b>-419</b>	<b>-849</b>
<b>Total adjustments (\$)</b>			<b>-2,514</b>	<b>-2,414</b>	<b>-2,264</b>	<b>-7,192</b>
<b>Total adjustments (%)</b>			<b>-6%</b>	<b>-6%</b>	<b>-5%</b>	<b>-6%</b>
<b>Recommended operating expenditure</b>			<b>40,105</b>	<b>39,551</b>	<b>39,423</b>	<b>119,079</b>
<b>Metering Service Charge efficiency saving</b>			<b>-49</b>	<b>-116</b>	<b>-195</b>	<b>-360</b>

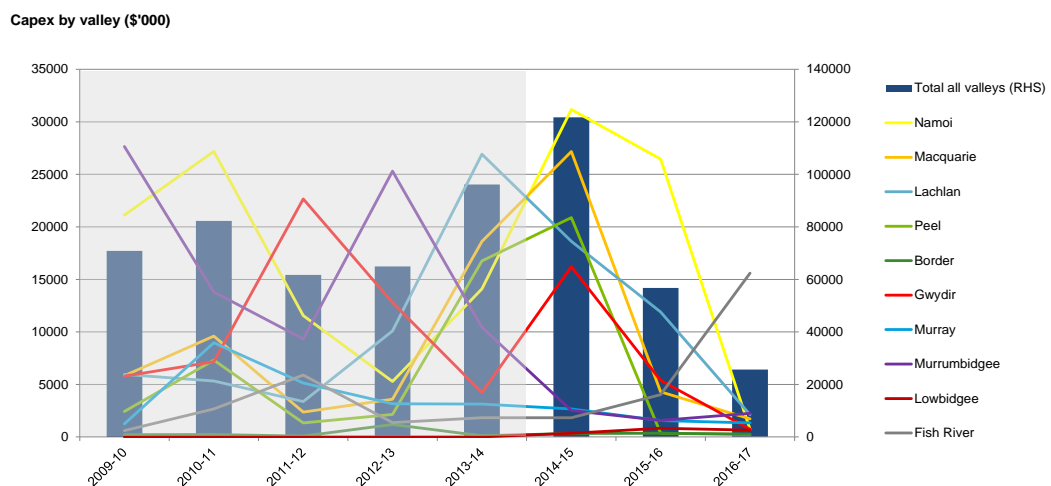
# 4 Assessment of capital expenditure

## 4.1 Summary of forecast capital expenditure

Figure 4-1 shows State Water’s historical and budgeted capital expenditure from 2007-08 to 2013-14 and its forecast expenditure over the upcoming regulatory period. State Water has forecast capital expenditure of \$195.9m, 58% of which (\$113.5m) has been forecast for 2014-15. This compares with actual and budgeted expenditure of \$222.7m between 2011-12 and 2013-14.

The figure also shows that most capex has been forecast in the Namoi (30%), Macquarie (17%) and Lachlan (17%) valleys, although expenditure varies widely across valleys and years.

**Figure 4-1 State Water actual and forecast capital expenditure, by activity (\$2013-14, \$000)**



State Water has forecast significant expenditure for its Dam Safety Compliance and Environmental Planning and Protection (Fish Passage Works) programs, proposing expenditure of \$101.6m and \$57.2m, respectively, or 49% and 28% of total capex. The remaining forecast expenditure is spread across Renewals and Replacements (10%), Water Delivery (9%) and Corporate Systems (4%).

Table 4-1 presents an overview of State Water’s proposed capital expenditure.

**Table 4-1 State Water proposed capital expenditure plan (\$2013-14, \$000)**

	2014-15	2015-16	2017-18	Total
Dam Safety Compliance	52,023	27,716	12,092	91,830
Environmental planning and protection	42,784	14,470	0	57,254
Renewal and replacement	6,848	6,735	6,338	19,921
Water delivery and other operations	8,340	4,695	4,685	17,720
Corporate systems	3,514	3,110	2,532	9,155
<b>Total</b>	<b>113,508</b>	<b>56,726</b>	<b>25,646</b>	<b>195,881</b>

Source: State Water

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The following table provides a further breakdown of each program into the specific projects we have covered in our review.

**Table 4-2: State Water proposed projects covered in our review**

Program / project	Proposed capex (\$m)
<b>Dam Safety compliance</b>	
<b>Projects reviewed</b>	
Oberon Dam	6.0
Rydal Dam	5.9
Keepit Dam Work Package 2	47.0
Burrendong Dam Phase 1b	12.0
Wyangala Dam Phase 1b	0.8
Chaffey Dam Augmentation	11.0
Contingency	8.3
<b>Program capex</b>	<b>91.8</b>
<b>Projects reviewed (%)</b>	<b>99%</b>
<b>Environmental planning and protection</b>	
<b>Projects reviewed</b>	
Gunidgera Fishlock	4.9
Tyreel Weir	1.4
Boooroo Weir	6.9
Tarelaroi Weir	8.6
Gunningbar Regulator	4.3
Gin Gin Weir	3.0
Lake Brewster Diversion Weir	11.4
Jemalong	9.0
Contingency	4.8
<b>Program capex</b>	<b>57.3</b>
<b>Projects reviewed (%)</b>	<b>95%</b>
<b>Renewal and replacement</b>	
<b>Projects reviewed</b>	
Oberon to Duckmolo - Concrete Pipeline	2.5
Rydal Dam - Intake and Outlet works	2.2
North Macquarie Marsh - Desilt and tree clearing	3.1
<b>Program capex</b>	<b>19.9</b>
<b>Projects reviewed (%)</b>	<b>39%</b>
<b>Water delivery and other operations</b>	
<b>Projects reviewed</b>	
CARMS	13.7
Crooked Creek water efficiency	3.5
Discretionary projects	0.4
<b>Program capex</b>	<b>17.7</b>

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Program / project	Proposed capex (\$m)
<b>Projects reviewed (%)</b>	<b>99%</b>
<b>Corporate systems</b>	
<b>Projects reviewed</b>	
Business Transformation Plan	9.2
<b>Program capex</b>	<b>9.2</b>
<b>Projects reviewed (%)</b>	<b>100%</b>
<b>Total capex reviewed (\$)</b>	<b>179.8</b>
<b>Total capex reviewed (%)</b>	<b>92%</b>

## 4.2 Approach to Asset Management and Capital Planning

State Water's asset management and capital investment planning requirements are detailed and guided by a number of regulatory and legislative instruments, most notably, the *State Water Corporation Act 2004*, the *State Owned Corporations Act 1989* and the State Water Operating Licence 2013-2018.

State Water's previous Operating Licence (2008-2013) required its asset management and planning approach to align with the NSW Treasury Total Asset Management Planning Policy and Guidelines.

State Water's Total Asset Management Plan (TAMP) is its overarching strategic plan with a 30-year planning that guides investment in asset renewals, capital investment and maintenance. Historically, the TAMP has been prepared every three to four years and was most recently completed in 2013.

The TAMP is informed by more detailed plans, such as Asset Management Plans which are prepared annually for all valleys and major infrastructure assets. Such plans consider additional obligations placed on the business and are supported by detailed asset condition assessments and analysis. This analysis includes an assessment of the asset's future service potential, which is a key element in determining whether an asset needs to be better maintained, renewed, replaced or removed.

State Water has prepared business cases for all capital expenditure projects that exceed \$1.5m. The business cases demonstrate that State Water has undertaken an assessment of alternative options.

We are satisfied that State Water has sought advice from consulting engineers where specialist advice or additional capacity is required, and taken a state-wide strategic approach to common issues, where possible. State Water's Fish Superhighways and Dam Portfolio Risk Assessment (PRA) are evidence of this approach.

Discussions with State Water indicate that it engages closely with its regulators, such as the Dams Safety Committee and Department of Primary Industries – Fisheries to determine cost effective solutions to achieve outcomes sought. [ Redacted – confidential ]

We are of the general view that State Water's approach to asset management and capital planning is clearly documented, logical and consistent with good practice. It is anticipated that the approach will become even more robust as it seeks to certify its asset management system against, the new international asset management standard ISO55001 by 30 June 2018.

This chapter first discusses the merits and cost forecasts associated with individual projects, then discusses the estimation of contingencies and project timing.

## 4.3 Dam safety compliance

State Water's dam safety compliance program is extensive and represents almost half its capex spend over the forthcoming regulatory period. The major capital cost items are summarised in the table below:

**Table 4-3 Major Dam Safety Expenditure (\$2013-14, \$m)**

	2014-15	2015-16	2017-18	Total
Oberon Dam (FRWS)	145	470	5,388	<b>6,003</b>
Rydal Dam (FRWS)	410	681	4,838	<b>5,929</b>
Wyangala Dam Stage 2 (Lachlan)	87	355	401	<b>844</b>
Keepit Dam (Namoi)	23,500	23,473	0	<b>46,973</b>
Burrendong Dam (Macquarie)	12,000	0	0	<b>12,000</b>
Chaffey Dam Augmentation (Peel)	11,000	0	0	<b>11,000</b>

Source: State Water

The NSW Dams Safety Committee (DSC), constituted under the Dams Safety Act 1978, defines standards of dam safety and monitors dam safety against these standards. State Water has an obligation to follow the DSC guidelines under its operating licence. Clause 3.1 of the operating licence, which states that State Water must ensure that its assets are managed in a manner consistent with:

*its obligations in the licence and all applicable laws, policies and guidelines with which State Water must comply, including the requirements of the NSW Dams Safety Committee;*

A distinctive element of the DSC's regulation of dam safety is its risk management policy framework for dam safety which was endorsed by the NSW Cabinet in August 2006. This document opens the possibility of working towards compliance over a period of time using a risk-based management approach. State Water's dam safety upgrade program is a staged risk reduction program which relies on the progressive improvement principles under the DSC's risk policy framework (2006) namely:

- Short term or interim: up to two years, initial easily-attainable risk reduction, e.g. dam break early warning systems, minor interim structural works
- Medium term: three to 10 years, significant risk reduction as soon as reasonably practicable, aim to achieve risk reduction to below the limit of tolerability (individual and societal)
- Long-term: 11 to 20 years, full deterministic compliance (e.g. PMF) and risks below the limit of tolerability subject to ALARP (as low as reasonably practical) and taking account of the DSC's broadly acceptable objective for risk.

State Water's staged compliance program relies on the progressive improvement principles under the DSC's risk policy framework (2006) on the basis of a considered Portfolio Risk Assessment (PRA) which prioritises the dams with the higher risk or the simplest fix.

As a consequence of this process, the cost estimates of various elements of the dam safety program have changed since the original business cases as priorities of each project have changed and designs altered to suite have been implemented.

The use of this approach is considered prudent and consistent with best practice guidelines endorsed by ANCOLD (Australian National Committee on Large Dams).

[

Redacted – confidential

Redacted – confidential

]

### **Project cost estimation**

The estimation of Project Costs can be performed using a number of different methods including:

- Analogous Estimating – using actual costs of previous, similar projects to estimate the costs of the current project
- Resource Cost Rates – Using standard staff rates and external quotes, price lists and commercial databases (Cordells or Rawlinsons Cost Construction Guide) to determine each project activity cost
- Bottom-Up Estimating – Estimating the cost of individual work packages or project activities at the most detailed level
- Parametric estimating – Using a parametric relationship between historical data and units of work to calculate a cost estimate for a project activity resource
- Project Management Software – Uses specialist cost estimate software, spreadsheets simulation and statistical tools such as Monte Carlo Analysis or @Risk
- Reserve Analysis – Comparison of multiple vendor bids or tenders to determine what the project should cost.

The level of uncertainty on the Project Cost estimate depends upon the type of estimating technique used, source of information, the level of uncertainty and various assumptions or constraints adopted.

State Water has used a variety of these methods including risk based cost estimation (conducted by Evans and Peck, Parsons Brinkerhoff and others) in the development of the business cases for the various dam safety and fishway projects. They have also used analogous estimation, reserve analysis and bottom-up estimation to arrive at Project Cost Estimates as is evidenced in the fish passage and Rydal Dam upgrade project.

A presentation to our team on Dam Safety from State Water suggested that the cost estimates are being revised through the project life cycle using a range of techniques outlined above including construction costs of completed projects or earlier project phases.

State Water advised that the cost estimates used as the basis of the forecast expenditure in the next regulatory period are based upon a P20 (20% probability of not being exceeded) concept design standard. This is a different approach to the current regulatory period, whereby P90 values were adopted. [

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]

We have not examined the revised detailed P20 concept design estimates that have been used as the basis of the forecast expenditure for the next regulatory period as these estimates have not been provided by State Water. Only the original business case risk based cost estimates have been provided for review. However, detailed cost estimates for the fish passage projects have been provided and these have been reviewed and are considered reasonable because they are based upon rates consistent with recent construction cost references.

### 4.3.1 Keepit Dam upgrade (work package two)

#### State Water proposal

##### Key drivers

[

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]

Aside from State Water Corporation's statutory and duty of care obligations, the Keepit Dam upgrade project expressed most simply in dollar terms is; spending \$142.4m (recommended B1 Option) to prevent a feasible catastrophe with an estimated loss of over 100 lives, tangible losses of \$3.0billion (2003 prices), and devastation to the downstream environment.

The upgrade project will ensure Keepit Dam is able to withstand extreme natural events; specifically, very large to extreme floods or a severe earthquake.

The Keepit Dam upgrade project involves:

- Raising the main and subsidiary dam walls by 3.4 metres, including strengthening the main wall
- Construction of spillways at the main dam wall and subsidiary dam wall. The spillways will have a total width of 600 metres and will comprise seven release plugs, with sill levels 3.0 metres below the full supply level of the dam
- Construction of three saddle dams.

The project also includes a number of 'external' projects. These are:

- Interim safety upgrade of Split Rock Dam
- Keepit Dam multi-level off-take
- Fishways for weirs downstream of dam

##### Options analysis and proposed costs

Work Package 1: Spillways, Saddles and Ancillary Works

Work Package 2: Multi-Level Offtake, Wall Raising, Post Tension & Reset Fuse plugs

Keepit Dam works involved the strengthening of the concrete dam and raising of the earth abutment embankment. The forecast work represents the completion of the strategically delayed work package two, which was delayed in consultation with Dams Safety Committee.

##### Proposed timing

The proposed timing for the Keepit upgrades has changed over time. In 2010-11, the original program put to IPART was amended to allow the funding of the Chaffey Stage 2 works on an NPV neutral basis. The amended program involved deferring the Keepit embankment raising to 2013-14 with completion in 2015-16. In 2012-13, the Keepit Dam upgrade project experienced delays in detailed design and a component of work was pushed out to 2014-15.

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## Recommendation

We are satisfied regarding the need for the project consistent with the PRA assessment. The detailed design of work package 2 has now reached an advanced stage, and so no further delays to the construction schedule are considered likely. Tenders for preliminary electrical works ahead of Stage 2 were called in September 2013. Construction is programmed to commence in late 2014. The costs associated with the proposed works are reasonable as they are commensurate with upgrade projects of a similar type that have been recently completed, although we note the installation of post-tensioned anchors is a specialist area and there are few contractors available to undertake such work. Specialist firms such as Structural Systems have been responsible for a number of recent projects.

For example, Tinaroo Falls Dam in Queensland was upgraded in 2011 in a similar fashion to Keepit Dam. The gravity concrete section of the dam was post-tensioned to resist increased loads due to revised extreme flood estimates. The post-tension anchoring of the 530m long dam crest was completed at a cost of \$21m to in order to stabilise the existing dam crest. Whilst the crest length of Tinaroo Falls Dam is similar to that of Keepit Dam, (also 533m long), the increase in height of 3.4m for Keepit Dam results in substantial increases in loading and hence an increase in proportionate cost to stabilise the dam wall.

The proposed expenditure for the Keepit Dam Work Package 2 safety upgrade therefore appears prudent and efficient.

**Table 4-4: State Water's proposed Keepit Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	1,829	3,500	26,439	28,377	-	<b>54,817</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			26,439	28,377	-	<b>54,817</b>

### 4.3.2 Burrendong Dam phase 1B

#### State Water proposal

##### Key drivers

The dam does not meet the statutory requirements of the DSC or the ANCOLD guidelines. More specifically, the dam fails to meet ANCOLD guidelines on acceptable flood capacity as it cannot safely pass the Probable Maximum Flood as required by an Extreme hazard category dam. The dam also fails to meet the ANCOLD Limit Societal criteria in total, and fails to meet ANCOLD Objective criteria for each of the loadings 'Sunny Day', Flood and Earthquake.

The upgrade project will ensure Burrendong Dam is able to withstand extreme natural events; specifically, very large to extreme floods or a severe earthquake. The Burrendong Dam upgrade project involves two main stages, (Phase 1 and 2) in order to meet capital expenditure commitments under the 2006 IPART determination.

Phase 1 is divided into two separable sub-stages, where:

- Stage 1A, which was completed in 2012, involved crest raising at the main embankment and at the saddle dams; and
- Stage 1B involves upgrade of the existing spillway.

Phase 2 involves the construction of an auxiliary spillway and is not included in the current Dam Safety Compliance Program.

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### Options analysis and proposed costs

Three options were shortlisted for economic assessment including the do nothing case as a benchmark. Option 3 was selected as the preferred solution known as 2AFP-100 with a total capital cost \$23.278m.

Construction of the Stage 1B spillway widening is now expected to commence in mid-2014 with completion in 2015. Stage 1B involves raising the spillway access bridge by two metres and installing a gate locking device for the seven spillway gates.

The costs for installation of the gate locking device are commensurate with similar projects undertaken on gated spillways. For example, upgrade works performed as part of the Wivenhoe Dam spillway upgrade in 2005 included the installation of a locking mechanism on the brake drums of the gate cables to ensure the gates could be secured when fully opened.

### Recommendation

The proposed expenditure for the Burrendong Dam Phase 1b safety upgrade appears prudent and efficient based upon a comparison with similar upgrade projects on gated spillways. [

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**Table 4-5: State Water's proposed Burrendong Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	624	8,000	12,000	-	-	<b>12,000</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			12,000	-	-	<b>12,000</b>

### 4.3.3 Wyangala Dam

#### State Water proposal

##### Key drivers

Wyangala Dam is one of the major dams in State Water's Portfolio. [

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]

The purpose of the safety upgrade project is to ensure Wyangala Dam is able to withstand extreme natural events, specifically very large to extreme floods or a severe earthquake. Such extreme events typically have a very low likelihood of occurrence; however, they may also result in devastating consequences.

The upgrade project involves (designated as Stage 1 works) the following works for the preferred option:

- 1A Works raising and locking spillway gates higher by 1.4 metres
- 1B Works raising downstream spillway chute walls by 2.5 metres

- 1C Works raising dam crest by 1.8m with upstream parapet wall (one lane carriageway over dam crest). This project has now been deferred to beyond the next regulatory period due the current PRA noting sufficient risk reduction from already complete works.
- 1D Provision to construct a bridge over Lachlan River and upgrade of Trout Farm Road (currently scheduled for beyond the next regulatory period)

State Water has adopted a staged approach to dam security which has been agreed to by the DSC. Implementation of Stage 1 works achieves 80% PMF security to the dam. Implementation of Stage 2 works in the future will achieve full PMF security.

### Options analysis and proposed costs

State Water, following further investigation, has now determined that the estimated costs for the project have escalated for Stage 1 Works options to between \$55m to \$62m (inclusive of past expenditure to 2010-11 of \$3.3m).

The gate raising and locking system is similar to locking mechanisms that have been recently installed on other gated dams such as Warragamba Dam.

### Recommendation

The proposed expenditure for the Wyangala Dam upgrade appears prudent and efficient based upon a comparison with similar upgrade projects on gated spillways.

**Table 4-6: State Water's proposed Wyangala Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	-	-	87	355	401	<b>844</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			87	355	401	<b>844</b>

#### 4.3.4 Chaffey Dam Stage 2 augmentation

### State Water proposal

#### Key drivers

The dam does not meet the statutory requirements of DSC or the ANCOLD guidelines. The upgrade of Chaffey Dam is required to increase the dam's capacity from 62GL to 100GL.

The proposed works involve raising the dam wall by 8 metres and subsequent works to raise the morning glory spillway and bridge deck. These works will increase the full supply level of the dam by 6.5 metres.

Following the stage one works, further stage two works will be carried out in conjunction with dam augmentation to enable the dam to store more water. The \$43.33m stage 2 and augmentation will be funded by the Australian Government, NSW Government and Tamworth Regional Council.

In terms of project timing:

- In 2011-12 stage 2 (raising the new fuse plug spillway) was brought forward, commencing in 2011-12 and due to be completed in 2014-15.
- In 2012-13 delays with the Chaffey Dam project occurred as a result of delays finalising environmental assessments and calling construction tenders. The project also experienced an extended review of construction tenders.

- In 2013-14 Chaffey Dam safety upgrade project was not initially included in the current regulatory period but was brought forward due to funding for augmentation and safety works by the Commonwealth and NSW Governments and Tamworth Regional Council becoming available.

### Options analysis and proposed costs

Options considered dam safety upgrade and dam safety upgrade with augmentation of capacity.

#### Proposed timing

- Construction on stage one works commenced June 2010
- Stage one construction completed February 2011
- Contract for stage two and augmentation detailed design awarded December 2011
- Contract awarded for environmental impact assessment April 2012
- Environmental impact assessment submitted to NSW Department of Planning November 2012
- Tenders called for stage two upgrade and augmentation construction November 2012.

The augmentation incorporates the stage 2 spillway upgrade which involves raising the dam wall by 8m and subsequent works to raise the morning glory spillway and bridge deck. The embankment raise involves either an upstream or downstream embankment raise option or a combination of both. These options involve the placement of large volumes of clay core, filter material and rockfill. Options considered include placing approximately 26,000 to 30,000m<sup>3</sup> of clay core material approximately 15,000m<sup>3</sup> to 20,000m<sup>3</sup> of filter material and between 160,000 and 390,000m<sup>3</sup> of rockfill, depending upon the configuration of the embankment raise.

The rates of supply and placement of material are consistent with latest estimates available from cost estimation references such as Cordells and Rawlinsons and so the cost estimates are considered appropriate.

### Recommendation

The proposed expenditure for the Chaffey Dam Augmentation appears prudent and efficient. The availability of funding and commitment of the Federal, State and Local governments provide an opportunity to deliver this proposed augmentation within the next regulatory period. Tenders were called in November 2012 for the construction of the Stage 2 upgrade and augmentation works. The costs are therefore considered reasonable.

Construction should be commencing in 2014.

**Table 4-7: State Water's proposed Chaffey Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	-1,029	6,080	12,914	-	-	<b>12,914</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			12,914	-	-	<b>12,914</b>

### 4.3.5 Rydal Dam upgrade

#### State Water proposal

##### Key drivers

[ Redacted – confidential ]

While design for this upgrade is only at the concept stage, this upgrade involves the installation of filter materials to protect the structure against what are referred to as ‘piping failure’.

As noted in the Asset Renewals and Replacement section, the Rydal Dam Inlet and Outlet Works renewal project has been re-classified from a renewals project. The objective of this project is to alter the configuration of the outlet valve works to reduce dam safety risk and allow maintenance of the penstock and outlet valve under dry conditions. Whilst the project will deliver asset and service reliability outcomes, we believe that dam safety compliance is the main driver and have transferred expenditure associated with this project (\$2.2m) to the dam safety compliance category.

##### Options analysis and proposed costs

Forecast costs are based upon concept design at a P10 level, which differs from the P20 applying to the rest of the program.

The proposed works includes exposure of the existing core and installation of new filter materials to ensure the core is fully protected to the crest. Material volumes are not substantial with only 4,000m<sup>3</sup> each of Zone 1, Zone 2 berm materials required and around the same volume of filter materials. [

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]

##### Proposed timing

Rydal Dam Safety Upgrade is currently being programmed to occur concurrently with Oberon Dam. Rydal Dam has been brought forward due to the outcomes of the Portfolio Risk Assessment.

#### Recommendation

The proposed expenditure for the Rydal Dam safety upgrade appears prudent and efficient. The estimated fill volumes and materials appear appropriate and the forecast cost is consistent with recent similar works on other dams (notably Kinchant Dam and Hinze Dam in Queensland and the Chaffey Dam augmentation project). These dams have involved retro-fitting better filters and downstream embankment raises amongst other works.

We have, however, reallocated forecast Renewals and Replacement expenditure associated with the Rydal Dam inlet and outlet works project (\$2.2m over the next regulatory period) to Dam Safety Compliance. This reallocation has been made on the basis that Dam Safety Compliance is the main driver of this expenditure, rather than service reliability. Further discussion on this recommendation is provided in Section 4.5.

**Table 4-8: State Water’s proposed Rydal Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	0	0	410	681	4,838	5,929
Recommended adjustments			0	800	1,443	2,243
Recommended expenditure			410	1,481	6,281	8,172

### 4.3.6 Oberon Dam upgrade

#### State Water proposal

##### Key drivers

[ Redacted – confidential ]

As with Rydal Dam, while design for this upgrade is only at the concept stage, the upgrade involves the installation of filter materials to protect the structure against what is referred to as ‘piping failure’.

##### Options analysis and proposed costs

Forecast costs are based upon concept design (P20). The Oberon Dam cost estimate is derived from the Rydal Dam estimate with allowance for increases in required volumes of materials.

##### Proposed timing

Oberon Dam Safety Upgrade is currently being programmed to occur concurrently with Rydal Dam as it is similar in nature and located adjacent to Rydal Dam, thereby offering some efficiencies through the potential packaging of both projects. The DSC date for long term compliance for Oberon Dam is as soon as practicable but no later than 2034. [

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]

#### Recommendation

[ Redacted – confidential

]

Our view is therefore that the construction of the Oberon Dam Safety upgrade be removed from the program in the next regulatory period.

In response to our draft report, State Water proposed that rather than undertaking the full Oberon project, it will:

- Undertake geotechnical work in a single contract for Oberon and Rydal Dam to achieve scale efficiencies
- Acquire filter materials for both dams to achieve scale efficiencies and for an emergency stockpile in the event of a pipeline incident developing.

State Water has estimated the costs of these activities at around \$560,000 over the regulatory period.

We have not accepted State Water’s revised proposal, however, on the basis that it:

- Has not quantified the proposed efficiency savings
- Is not required to complete the project until 2034.

Our view is therefore that the construction of the Oberon Dam Safety upgrade be removed from the program in the next regulatory period.

**Table 4-9: State Water's proposed Oberon Dam Safety Upgrade dam capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	0	0	145	471	5,388	<b>6,004</b>
Recommended adjustments			-145	-471	-5,388	<b>-6,004</b>
Recommended expenditure			0	0	0	<b>0</b>

## 4.4 Environmental planning and protection

State Water's Environmental Planning and Protection (EPP) program constitutes around 28% of total capex spend over the forthcoming regulatory period. The major capital cost items are summarised in the table below:

**Table 4-10 Major EPP Expenditure (\$2013-14, \$m)**

	2014-15	2015-16	2016-17	Total
Copeton Dam Offsets (Gwydir)	12,890	3,960	0	<b>16,850</b>
Wyangala Dam Offsets (Lachlan)	10,500	9,200	0	<b>19,700</b>
Burrendong Dam Offsets (Macquarie)	7,324	0	0	<b>7,324</b>
Keepit Dam Offsets (Namoi)	4,000	0	0	<b>4,000</b>

Source: State Water

State Water's Fish Superhighways document provides a strategic program to integrate State Water's asset and financial planning process with requirements to provide effective fish passage, developed under the Memorandum of Understanding with the Department of Primary Industry – Fisheries.

Specifically, the program will aim to address fish passage barriers by identifying planned asset works that trigger s218 of the Fisheries Management Act 1994, identifying redundant assets that can be considered for removal and identifying high priority barriers that planned assets works can consider.

The Fish Superhighways document also includes details of the fishway monitoring program that aims to verify how effective individual fishways are in terms of enabling fish to pass the barriers. Monitoring results drive the continual improvement in the biological understanding of native fish and in fishway design processes and feed directly into asset management and future design and costing.

State Water has forecast capital expenditure for fish passage over the next regulatory period based on the assumption that the Minister for Primary Industries will direct State Water to undertake such works. A letter dated 9 May 2013 from the Director General of the Department of Primary Industries confirms this requirement through the existing Memorandum of Understanding which was renewed and updated in June 2012 for another three years.

The dam safety upgrades at Keepit, Split Rock, Burrendong, Wyangala and Copeton triggered the provision of fish passage under Section 218 of the Fisheries Management Act 1994. As provision of fish passage at the dam walls were not considered cost effective, DPI (Fisheries) and State Water negotiated a fishway offset program for these dam upgrades, with works occurring at other locations. We generally support this approach as it provides a cost-effective way of meeting environmental objectives at least cost.

The discussion below generally focuses on the need for the projects, as well as cost estimates. The issue of timing for the fish passage program is discussed in section 4.9.

## 4.4.1 Copeton fish passage

### State Water proposal

The total cost estimate for Gwydir valley fish passage for Copeton dam safety upgrade program is \$20.74 m. This estimate is based on the latest available information on fishway design and construction costs.

The Copeton Dam Safety Upgrade Fishway Offset: Nominated Offset sites are

- Tyreel Weir,
- Tyreel Regulator,
- Boolooroo Weir and
- Tareelaro Weir

#### Tyreel Weir

The total estimated cost of \$2.48m for a vertical slot fishway at Tyreel Weir is based on concept design by State Water in September 2012.

Earlier concept designs by URS were for a rock-ramp fishway but this was reassessed and a vertical slot fishway become the preferred option.

A design tender was awarded for a detailed design of a full width rock-ramp (FWRR) fishway based on earlier concept designs, however the consultant has been requested to submit a variation to the current contract to design a vertical slot fishway.

#### Tyreel Regulator

The total estimated cost of \$2.78m for a vertical slot fishway at Tyreel Regulator is based on concept design by State Water in September 2012.

Earlier concept designs by URS were for a rock-ramp fishway. When this option was reassessed, a vertical slot fishway became a more suitable option for this site.

Tenders were called for detailed design of full width rock-ramp (FWRR) fishway based on earlier concept designs. Tender assessment is on hold at present. The tenderers will be requested to provide revised tenders based on a vertical slot fishway for the site.

Expenditure is not expected within the next regulatory period on this project as it is expected to be completed by 2013-14.

#### Boolooroo Weir

The total estimated cost of \$6.88m for a fish lock at Boolooroo Weir is based on Mollee fishlock and regulator detailed design modified to suit the Boolooroo site. This site requires a smaller structure as the lift height is not as significant as Mollee Weir.

A concept design option report by URS in January 2011 recommended that fish lock is the most feasible option for this site. A new cost estimate and a concept design for vertical slot fishway has been carried out by State Water staff. The cost estimate for the vertical slot is more than fish lock therefore the cost of the fish lock is included in the thematic plan.

#### Tareelaro Weir

The total estimated cost of \$8.6m for a fish lock at Tareelaro Weir is based on Mollee detailed design modified to suit Tareelaro site.

A concept design option report by URS in January 2011 recommended that a fish lock is the most feasible option for this site.



The total cost estimate for Mollee Weir fishlock is \$9.4m. It is assumed that Mollee design can easily be adapted to Tareelaroï site and some cost savings would be available as more understanding of construction issues during Mollee fish lock construction resulting in better cost control for this site.

## Analysis

The main components of a vertical slot fishway include concrete works, metalworks (platforms and handrails), and mechanical works (valves and gates). Site establishment and temporary works such as coffer damming and dewatering can add to overall project costs substantially, but depend upon specific site conditions.

The rates used for structural concrete of between \$3,000 and \$3,500/m<sup>3</sup> is considered reasonable and in accordance with current rates quoted in Cordells and Rawlinsons Construction Cost references. Likewise the metalwork cost rates for heavy and light platforms of between \$500 and \$1,000/m<sup>2</sup> are also considered reasonable.

The prices of penstock gates and valves are within expectations of costs based upon experiences with gate manufacturers such as AWMA Water Control Solutions and Watergates sp.

By way of comparison the vertical slot fishway projects are priced consistently with projects of similar type and scale to fishways in Queensland, such as Ben Anderson Barrage (4m high and 65m length) and Bromelton Weir (4.8m high and 75m length).

Fishlocks are generally more costly to construct than vertical slot fishways due to the greater complexity of mechanical and electrical components associated with this type of structure. Fish Locks tend to be better suited to a higher range of operation, which adds further to the cost of construction.

Typically the quantity of structural concrete is not significantly increased from that associated with vertical slot fishways, but the complexity of the hydraulic controls and pipework leads to increased construction costs.

The penstock gates are a significant cost item in fishlocks, as are the valve and piping components. Cost rates generally include the supply and installation of all actuators and electrical and hydraulic components. The prices of penstock gates and valves are within expectations of costs based upon experiences with gate manufacturers such as AWMA Water Control Solutions and Watergates sp.

By way of comparison, the fishlock projects are priced consistently with projects of similar type and scale to fishways in Queensland, such as Claude Wharton Weir (8.6m lift height and \$4.5m cost) and Bowen River Weir (6.5m lift height and \$6.5m cost).

The cost estimates for this program of works in the Gwydir valley are generally based on concept designs that are yet to be finalised through detailed design. The Tareelaroï Weir cost estimate is based upon the Mollee Weir detailed design and construction tender price which was adjusted to this site.

## Recommendation

Subject to comments about timing for the fishway program in section 4.9, we are satisfied that the cost estimates are prudent and efficient.

**Table 4-11: State Water's proposed Copeton fish passage capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	1,172	3,435	12,890	3,960	-	<b>16,850</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			12,890	3,960	-	<b>16,850</b>

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## 4.4.2 Wyangala fish passage

### State Water proposal

The total cost estimate for Lachlan valley fish passage for Wyangala dam safety upgrade program is \$23.9M. As these estimates are based on feasibility designs they will need to be updated as new information becomes available.

The Wyangala Dam Safety Upgrade Fishway Offset: Nominated Offset sites are

- Condobolin Weir
- Brewster Diversion Weir
- Jemalong Weir.

#### Condobolin Weir

The total estimated cost of \$3.5m for a vertical slot fishway at Condobolin Weir is based on the report by NSW Public Works in March 2011.

A vertical slot fishway or weir removal is proposed for this site. Removal of the weir may not be able to be carried out as the community may object to it because it serves local recreation in town. Hence, the vertical slot fishway needs to be constructed possibly lowering the weir pool to reduce the cost. Tenders for detailed design are to be called within the next 3 months.

The Public Works cost estimate has been updated by adding PIT monitoring equipment for detecting fish movements and physical modelling. A contingency allowance of 10% will be added at program level.

Expenditure is not expected within the next regulatory period on this project as it is expected to be completed by 2013-14.

#### Brewster Diversion Weir

The estimated cost for a fishlock is based on the report by Martin Mallan-Cooper, Adam Vay in March 2011. SMEC carried out the concept design and cost estimate. The cost estimate given in the report is \$7.94m.

The State Water costs of project management, OHS management and environmental management allowed in the SMEC estimate is not sufficient but it is assumed that contingency allowance of 35% in the SMEC estimate will cover additional State Water costs. The State Water estimate provided for review is consistent with the other costs estimates in regard of the proportion of costs allowed for owner costs.

This is one of the most difficult sites for dewatering and cofferdam for construction. The allowed temporary works estimate has further been increased to reflect similar works at Mollee Weir. The total cost estimate with updated rates is \$11.4m.

Detailed design and modelling is required to provide a detailed cost estimate for this site.

#### Jemalong Weir

Estimated cost of \$9m for a fishlock is based on Mollee & Gunidgera cost estimates and tendered prices. Concept design was carried out by NSW Public Works in March 2012 and it is very similar to Mollee & Gunidgera design in size and style.

Detailed design and modelling is required to provide a detailed cost estimate for this site.

The costs estimates for the vertical slot fishways and fish locks are reasonable when compared to similar sized projects that have been recently completed in other river systems.

There is uncertainty associated with the cost estimate for Jemalong Weir given that there is no detailed design available yet for this site.

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## Analysis

The cost estimates for this program of works in the Lachlan valley are generally based on concept designs that are yet to be finalised through detailed design.

However the cost estimates for the VS fishway and fishlocks are reasonable as they are consistent with the tender prices received for the Mollee and Gunidegra Weir structures.

## Recommendation

Subject to comments about timing for the fishway program in section 4.9, we are satisfied that the cost estimates are prudent and efficient.

**Table 4-12: State Water's proposed Wyangala fish passage capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	487	3,490	10,500	9,200	-	<b>19,700</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			10,500	9,200	-	<b>19,700</b>

### 4.4.3 Burrendong fish passage

#### State Water proposal

The total cost estimate for Macquarie valley fish passage for Burrendong Dam Safety Upgrade Program is \$18.2m, although less than half of this expenditure is programmed for the next regulatory period. These estimates are approximate and will be revised when further information is made available.

Burrendong Dam Safety Upgrade Fishway Offset: Nominated Offset sites are

- Gunningbar Regulator
- Dubbo Weir
- Marebone Break Regulator
- Gin Gin Weir.

#### Gunningbar Regulator

The total estimate for a vertical slot fishway at Gunningbar Regulator is based on the report provided by NSW Public Works in September 2011. The Public Works cost estimate has been updated by State Water to include DPI monitoring and physical modelling costs.

Detailed design has recently been awarded to SMEC Australia, and design works are underway. Expenditure is not expected within the next regulatory period on this project as it is expected to be completed in 2013-14.

#### Dubbo Weir

The Dubbo Weir project was replaced with Marebone Break Regulator, as Dubbo Weir is drowned out on a regular basis providing passage to fish migration.

#### Marebone Break Regulator

The total estimate for a vertical slot fishway at Marebone Break is \$4.371m, based on the report prepared by NSW Public Works in Sept 2011. Public Works cost estimate has been updated by State

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Water to include DPI monitoring and physical modelling costs. The updated cost estimate for this site is \$4.4m.

Detailed design has recently been awarded to SMEC Australia, and design works are in progress.

**Gin Gin Weir Removal OR Bulgeraga Creek Regulator Vertical-slot Fishway**

The estimate for partial removal of Gin Gin Weir (and providing a rock ramp fishway) or construction of a vertical-slot fishway at Bulgeraga Creek Bifurcator is approximately \$3m. There has been no investigation or detailed cost estimates prepared at this stage for Bulgeraga site, however, based on previous experiences, an estimate of \$3m is considered reasonable.

There would be uncertainty around the estimate allowed for the Bulgeraga Creek Regulator vertical slot fishway due to the lack of investigation works and no detailed cost estimate being available for this site.

**Analysis**

The cost estimates for this program of works in the Macquarie valley are generally based on concept designs that are yet to be finalised through detailed design. Detailed design is currently underway for two of the sites.

The cost estimates for the vertical slot fishways are reasonable as they are consistent with the tender prices received for the Mollee and Gunidegra Weir structures.

**Recommendation**

Subject to comments about timing for the fishway program in section 4,9 we are satisfied that the cost estimates are prudent and efficient.

**Table 4-13: State Water’s proposed Burrendong fish passage capital expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	559	4,586	7,324	-	-	<b>7,324</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			7,324	-	-	<b>7,324</b>

**4.4.4 Keepit dam fish passage**

**State Water proposal**

Nominated offset sites for the Keepit Dam works are

- Mollee Weir;
- Gunidgera Weir; and
- Weeta Weir (decommissioning). This project was completed in 2012-13

Selected tenders for the construction of the new fishways at Mollee and Gunidgera weirs and the removal of Weeta Weir (Contract State Water Doc 12/16465) were called and the cost of the construction works was \$17.5m with the total project cost of \$21.8m which is \$8m over the approved IPART budget.

State Water then decided to re-tender Mollee works initially reducing the scope of works as DPI (fisheries) have agreed to revise the scope of the Keepit fishway offset program subject to State Water requesting future funding in the next ACCC submission for Gunidgera Weir.

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The total cost estimate for Namoi valley fish passage for Keepit & Split Rock dam safety upgrade program is \$19.2m including \$1.0m already used for detailed design, environmental assessment and tendering costs of these 3 sites.

#### **Mollee Weir & Gunidgera Weir**

The detailed design was completed by URS for a fishlock for Mollee Weir site in January 2012. Tenders were received for construction of fishlocks for both Mollee Weir and Gunidgera sites in early 2012 with approximate construction cost of contractors alone being \$8.5m per site. The construction cost estimate and State Water costs have been revised with information from recent tenders received for both sites and is approximately \$8.9m per site.

The Mollee Weir fishlock is expected to be completed in 2013-14.

#### **Analysis**

The cost estimates for this program of works in the Namoi valley are generally based on detailed designs and tenders for construction. The cost estimates for the fish locks are reasonable as they are based upon recent tender prices.

#### **Recommendation**

Subject to comments about timing for the fishway program in section 4.9, we are satisfied that the cost estimates are prudent and efficient.

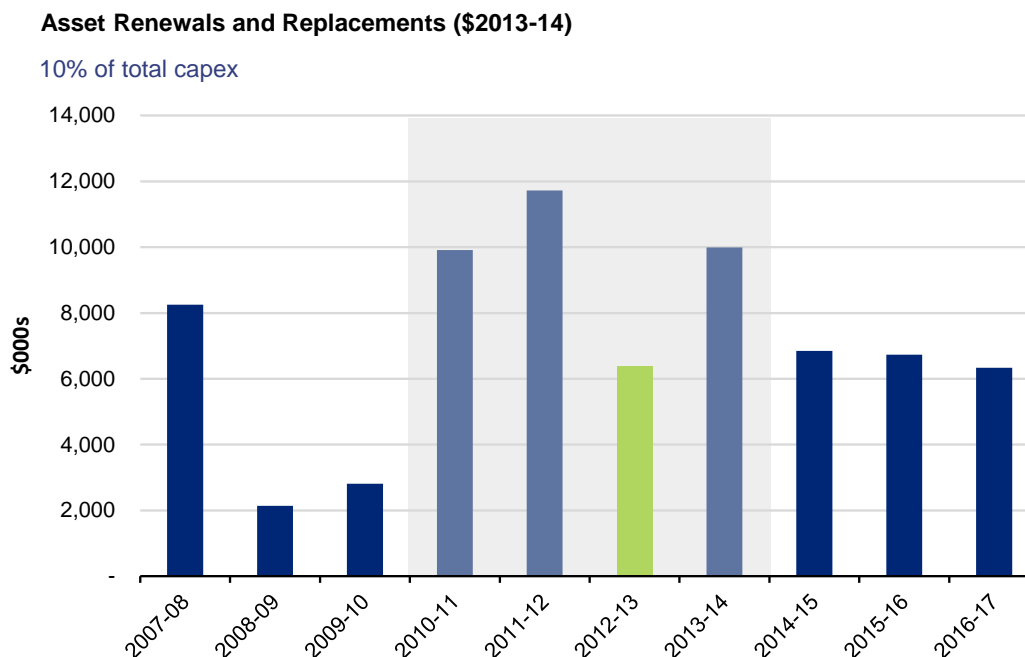
**Table 4-14: State Water's proposed Keepit fish passage capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	2,511	9,387	4,000	-	-	<b>4,000</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			4,000	-	-	<b>4,000</b>

## 4.5 Renewals and replacement projects

### State Water proposal

Figure 4-2: State Water asset renewals costs 2007-08 to 2016-17 (\$2013-14)



Source: State Water

State Water's proposed asset renewals and replacements capex represents 10% of forecast capital expenditure in the next regulatory period. Proposed expenditure is 14% less than average annual expenditure since 2007-08, and 29% less than recent historical expenditure (2010-11 to 2012-13).

The proposed capex, which is greatest in the Macquarie, Fish River and Lachlan valleys, is relatively consistent over the next regulatory period.

State Water has identified asset and service reliability as the key driver for asset renewals and replacements.

### Analysis

As discussed elsewhere, State Water's approach to asset management is clearly documented, logical and consistent with good practice, with forecast capex outlined in Asset Management Plans, which are prepared for all valleys and major assets.

Asset Management Plans are underpinned by an assessment of each asset's future service potential, which is a key element in determining whether an asset needs to be better maintained, renewed, replaced or removed. Combining this data with asset failure consequence ratings allows a risk cost to be determined, which is used to inform objective asset renewal decision-making.

Whilst the total forecast expenditure profile over the next period is relatively consistent, the profile for individual valleys is generally not even. The magnitude of expenditure is proportional to the asset being renewed or replaced. The renewal/replacement of large assets can lead to uneven or lumpy expenditure profiles for individual valleys.

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State Water advised that estimates are based on the knowledge and experience of asset planners and engineers that have delivered similar projects. Forecast expenditure has been based on estimates provided by asset planners, which are reviewed by senior engineers.

Businesses cases are prepared for proposed asset renewal projects that require a capital investment greater than \$1.5m. Three preliminary business cases have been prepared for asset renewal projects over the next regulatory period, two in Fish River water supply scheme and another in Macquarie valley. These projects are outlined below:

North Macquarie Marsh bypass channel project in the Macquarie valley:

- The purpose of this project is to improve conveyance downstream of the North Macquarie Marsh for stock and domestic releases during flow periods to reduce water losses.
- The need for this project is consistent with the Future Asset Service Potential assessment in the Macquarie valley Asset Management Plan.
- Vegetation clearing and de-silting within the channel has been identified as the preferred option at a cost \$3.1m over two years.
- Preliminary cost benefit analysis indicates that this option results in a marginally positive benefit due to water savings. The preliminary business case also indicates that local landholders would prefer a flowing stream for extraction than groundwater bores to supply their stock and domestic needs.
- Given that the preferred option results in a positive benefit and is supported by local landholders we believe forecast expenditure is prudent and efficient.

Fish River water supply pipeline replacement project:

- The purpose of this project is to replace approximately 10 km of the existing pre-stressed concrete pipe to reduce the frequency of pipe failures that is impacting on service delivery.
- This project will also reduce water losses and reduce work health and safety risks, as pipe repairs involve pouring lead and associated exposure.
- The need for this project is consistent with the Future Asset Service Potential assessment of the pipeline in the Fish River Water Supply Asset Management Plan.
- Replacement of the pipeline with ductile iron concrete lined pipes has been identified as the preferred option at a cost of \$2.5m primarily in the regulatory period.
- Preliminary analysis results indicate that the project will result in a net benefit, considering the frequency of historical breakages and associated repair costs.
- Given our professional experience and the positive benefit we believe forecast expenditure is prudent and efficient.

Rydal Dam inlet and outlet works renewal project in Fish River:

- The purpose of this project is to alter the configuration of the outlet valve works to reduce dam safety risk and allow maintenance of the penstock and outlet valve under dry conditions.
- State Water's proposed asset renewal and replacement projects are generally based on asset condition assessments (Future Asset Service Potential), however this project is an exception.
- The preliminary business case states that Rydal Dam is one of the highest risk dams within State Water's dam portfolio, the inability to undertake required maintenance of the penstock and outlet valve in the future represents an unacceptable operational and dam safety risk. This is consistent with our review of State Water's dam safety portfolio risk assessment.
- Whilst the project will deliver asset and service reliability outcomes, we believe that dam safety compliance is the main driver and have transferred expenditure associated with this project (\$2.2m) to the dam safety compliance category.

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We note that in contrast to the current regulatory period, the forecast expenditure profile over the next period is relatively consistent (\$6.3m - \$6.8m p.a.). It is reasonable to expect that State Water could deliver this program given that forecast annual expenditure is close to the minimum annual expenditure in the current regulatory period. We do not have information that explains the significant reduction in expenditure in asset renewals and replacements in 2008-09 and 2009-10.

### Recommendation

We believe that State Water's forecast expenditure for asset renewals and replacements is prudent and efficient, given the robustness of their asset management approach. However, we recommend reallocating forecast expenditure associated with the Rydal Dam inlet and outlet works project (\$2.2m) in Fish River to Dam Safety Compliance on the basis that it is the main driver of the expenditure, rather than service reliability.

**Table 4-15: State Water's proposed Asset Renewal and Replacement capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	6,392	9,991	6,848	6,735	6,338	<b>19,921</b>
Recommended adjustments			0	-800	-1,443	<b>-2,243</b>
Recommended expenditure			6,848	5,935	4,895	<b>17,678</b>

## 4.5.1 Lowbidgee capital works

### State Water proposal

State Water considers that water infrastructure assets within Lowbidgee have not been maintained to a standard consistent with other State Water assets.

State Water has proposed a number of works to address high risk that may create health and safety concerns.

- Juanbung Weir Regulator
- Weir Road Regulator Access Bridge
- Wynburn Middle Regulator B
- Lake Maremley Syphon
- Replace Glen Avon Escape Regulator

On this basis, State Water is proposing a targeted capital works program in the Lowbidgee over the next regulatory period.

### Analysis

The forecast capex in Lowbidgee appears to be have been proposed by State Water to address a number of workplace health and safety issues associated with the condition of some assets. In recent years, a number of bulk water providers have been upgrading gate structures, work platforms and ladders to bring these assets into line with current WHS standards. The cost estimates are commensurate with similar WHS enhancement projects undertaken by other bulk water providers such as SunWater and Goulburn-Murray Water.

### Recommendation

As the cost estimates for these works appear reasonable we consider State Water's proposed capex to be prudent and efficient.



**Table 4-16: State Water's proposed Lowbidgee capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure			285	781	605	<b>1,671</b>
Recommended adjustments			-	-	-	-
Recommended expenditure			285	781	605	<b>1,671</b>

## 4.5.2 Corporate Systems

### State Water proposal

State Water's Corporate Systems uses ICT infrastructure to provide information services, business applications and assistance to all stakeholders in the form of ICT service provision.

The genesis of State Water's current network and applications architectures was the formation in 2004 of State Water Corporation and the subsequent separation of a number of service functions from the NOW. Since then, corporate systems have developed in an ad hoc manner, which State Water claim has resulted in an ageing, fragmented and increasingly inefficient ICT and business solutions environment that presents a significant risk to the viability of the organisation and restricts future organisational growth and development.

Specifically, State Water has identified a number of problems and issues associated with its current corporate systems, including:

- Some systems are supported internally by State Water whilst others are supported externally by NOW and their shared service provider, with unreliable connection facilities
- The evolution of applications, supporting software, hardware and network architectures has been based on short-term need rather than driven by strategic intent or architectural considerations
- Applications are written in a variety of languages creating increased complexity for on-going support, enhancement and integration requiring additional skill diversity and creating resource challenges
- Limited documentation on business processes, applications and technical environments further exacerbating the situation
- Limited documentation and therefore limited compliance to ICT services policies and procedures
- Being locked in to old enterprise software, such as Windows XP and Office 2003, which limit opportunities to develop applications on more contemporary technology platforms
- Poorly planned and managed outsourcing arrangements of some functions
- Increased network security risk profile.

To address these issues, a Business Transformation Program (BTP) was developed by State Water in 2011-12. The purpose of the BTP is to provide a planned and coordinated approach to modernise State Water's ICT systems and infrastructure. The objectives of the BTP, which State Water intends to deliver over the 2014-17 regulatory period, are therefore to:

- Provide State Water with a planned and robust information technology infrastructure necessary to ensure that critical business applications solutions have maximum reliability and availability
- Provide a leading edge and integrated applications solutions environment to provide the necessary support for all State Water stakeholders, both internal and external, to contribute effectively to business outcomes

- Review and redefine where necessary the business processes that support the day-to-day operations of State Water
- Provide access to the information stored in State Water databases in a way that enables improved strategic business analysis and decision making at all organisational levels
- Provide significantly enhanced and reliable services to external stakeholders from better information delivery and services to regulators, suppliers and customers

State Water intends to achieve the stated objectives through implementing:

- General upgrades to ICT infrastructure and software (approximately \$3.7m of capex over the regulatory period)
- Upgrades to a number of other systems including water accounting, data management and integration, stakeholder portal and network security systems (\$0.3m)
- State Water Wise (SWW), an enterprise resource planning (ERP) solution (\$1.3m)
- An integrated surveillance, monitoring, automation and remote telemetry (iSMART) system (\$3.9m).

State Water has proposed capital expenditure of approximately \$9.2m over the regulatory period to deliver the program outlined above (Table 4-18 shows the timing of this expenditure):

To deliver these large-scale transformation activities, State Water has established a project management office (PMO), led by the BTP Program Director, and shifted to a more outsourced delivery model. State Water has identified the following benefits associated with this delivery model:

- Addresses skills issue
- Shifts the schedule/budget risk to outsourced provider
- Accelerates delivery schedule e.g. iSMART
- Addresses risk of non-delivery and critical business risks around this, including
  - Unsupported systems and end of life systems/infrastructure
  - Operational risks of manual, disconnected legacy systems
  - Inability to provide required service levels.

We note that since submitting its original pricing application, State Water has proposed additional capex of \$4.75m for its Corporate Systems program, on the basis of post-submission events, including:

- A number of events outside of State Water’s control (e.g. a NOW decision to upgrade its Hydstra system, which is integrated with an equivalent system at State Water that must also be upgraded )
- Updated budget estimates as a result of an internal review of the program which commenced in November 2012.
- The decision to adopt a predominantly outsourced delivery model that will improve delivery but increase implementation costs.

The following table compares the additional funds sought by State Water with those included in its original proposal:

**Table 4-17: Additional Corporate Systems capex proposed by State Water (\$2013-14, \$’000)**

Project	Regulatory period capex		
	Pricing application	Revised proposal	Difference
iSMART	3,869	3,869	0
SWW	1,278	4,482	3,204
Portal	50	166	116

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Project	Regulatory period capex		
	Pricing application	Revised proposal	Difference
DMI	104	104	0
Hydstra	0	323	323
EDW/BI	153	153	0
Dayplanner	7	7	0
ICT infrastructure	3,694	4,803	1,109
<b>Total</b>	<b>9,155</b>	<b>13,907</b>	<b>4,752</b>

Source: State Water

We have not, however, reviewed State Water's request for additional funding due to the fact that the funds sought:

- Have not been included in the capex estimated included in its pricing application
- Have not been subject to public scrutiny to ensure the benefits and the costs of the programs and systems they support are fully understood.

## Analysis

The justifications provided by State Water for the proposed Corporate Systems expenditure are based on identification of issues (e.g. data accuracy, reporting, system reliability and maintenance etc.) which in our experience are common issues across water utilities. However, we consider that these issues appear to be particularly profound at State Water, largely due to the genesis of the organisation and the historical approach taken to enterprise planning.

The approach outlined by State Water to remedy these issues (i.e. system rationalisation, data consolidation, process redesign, etc.) are all fair and reasonable business transformation activities which we consider State Water should undertake.

### ICT infrastructure and software

We consider the upgrades to ICT infrastructure and software and to other systems (water accounting, data management and integration, stakeholder portal and network security systems) as business critical to State Water. These are upgrades of old and unsupported systems that are core to undertaking the activities of the business and providing core services. Without these upgrades there is a high risk (in terms of both likelihood and consequence) of business continuity issues which may result in the incorrect administration of water to customers and disruption to services.

### State Water Wise

We consider the implementation of State Water Wise (SWW) which is the enterprise resource planning (ERP) solution as also of critical importance to State Water. The ERP provides economies of scale for State Water systems through being supported by one provider replacing the many different unsupported licence agreements. The ERP enables integration of various systems (removing duplication and improving productivity) and automates many of the manual processes within State Water, which is likely to result in more efficient business practices and increase data reliability and timeliness which is critical for performance monitoring of the business. SWW will also provide new functionality around resource planning and customer relationship management. In a 'business as usual' scenario (i.e. if State Water were to not implement the ERP), the current systems would still need to be maintained and upgraded, new support contracts entered into and expenditure on external consultancies and bespoke development would continue. We consider the move to an integrated system such as ERP will provide a more efficient and cost-effective solution for State Water and its customers than maintaining the status quo environment.

## iSMART

State Water's iSMART business case, which was revised in November 2013, sets out State Water's justification for the program, including its objectives and projected costs and benefits. The objectives of the program include, among other things, ensuring compliance with reporting obligations to Government entities, achieving greater operational efficiencies, improving customer service levels, improving decision making through access to more accurate data, and enabling other elements of the BTP (i.e. CARMS, Hydstra, SWW etc.)

The benefits identified by State Water include a number of qualitative benefits (e.g. improved regulatory compliance, service levels, decision making ability and reputation), annual reductions in operating costs of around \$386,000 (e.g. reductions in overtime and callouts, hardware repairs and licencing and site rental costs) and approximately \$3.1m of annual risk cost avoidance (e.g. loss of system control, information loss, travel injuries, regulatory complaints, security breach etc.)

Taking into account the costs of implementing iSMART (around \$18.2m of capex, including \$3.9m proposed for the next regulatory period), the business case states that the program will provide a positive net present value within the estimated project capital return period of 10 years. While we note that the business case states that the program is NPV positive, some of the risk cost avoidance benefits appear high. For example, State Water has valued the reduced risk of not meeting regulatory reporting requirements at over \$0.8m per annum.

As the information provided to us did not explain how these benefits have been calculated (and was received immediately prior to finalising this report), we have not been able to determine their veracity. The approach to calculating the operational efficiency gains (labour cost savings based on less maintenance callouts and overtime etc.), however, appears to be logically constructed and reasonable.

Accordingly, despite the lack of transparency in the information provided, we accept the proposed iSMART capex on the basis that:

- iSMART is integral to other aspects of State Water's business transformation program (e.g. Business Intelligence, Murrumbidgee CARMS) by providing real-time asset operation and data feed into its corporate systems
- Installation of modern telemetry equipment is consistent with good industry practice, with other rural water entities making similar upgrades to their water delivery systems in recent years
- Implementation of the project is significantly progressed, with State Water already having invested much of the project budget.

## General comments

While State Water appears to have faced some difficulty in providing up-to-date quantification of the on-going benefits which it expects from upgrades to ICT infrastructure and SWW, we do not consider this integral to the program's justification given the varied and numerous issues identified with the current systems.

Our approach to these two aspects (upgrades to ICT infrastructure and SWW) of the BTP program has therefore been to assess the reasonableness of the cost estimates proposed, which appear to be logically constructed and are within a reasonable order of magnitude based on similar projects elsewhere. We therefore consider State Water's proposed capex to be prudent and efficient for these two aspects of the BTP.

The achievement of these capex estimates, however, requires strong governance and scope control in order to prevent "scope creep" and associated time delays/reduction in expected benefits. The implementation planning and governance approach outlined by State Water, whilst sound in terms of structure, will require ongoing technical, business and commercial advice to be incorporated into key governance decisions.

Further, there appears to be a heavy emphasis on the governance role played by the Program Director. Based on experience of other similar projects, it is recommended that consideration be given to

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supporting the existing governance model with additional technical expertise via independent Enterprise Architecture and Project Management advice. This advice could take the form of monthly participation in key Steering Meetings and conducting of brief ongoing quarterly program reviews to ensure that the BTP is able to achieve its committed business outcomes, budget and time targets.

State Water's ability to deliver the program within its proposed cost estimates and specified timeframes will therefore require strict control and monitoring of the following:

- **Individual project scope** – once the project requirements are finalised and signed off, State Water should seek to ensure that limited/no additional requirements are added unless there is a compelling legislative/regulatory compliance or business risk which needs to be addressed. This is particularly important with regards requests to perform “customisations” beyond core system functionality, as these carry inherent risks of system/business process failure and increased ongoing upgrade and support costs to maintain. This will ensure common understanding of the scope of delivery expected of the vendor and achieve greater certainty with regards price and time to deliver.
- **Overall BTP scope and timing** – State Water will need to ensure that it has a comprehensive understanding of the inter-relationships of each project in terms of scope dependencies, resourcing and timing. This will need to be centrally managed to ensure that all required outcomes are delivered and that any cross-project or business continuity issues e.g. (delivery, testing, operational support) are able to resolved quickly via sound root cause analysis processes and effective demarcation of roles and responsibilities to remediate.
- **Vendor Management** – given the fact that multiple third party vendors will be involved in the delivery of the BTP, it is essential that clear scope and commercial arrangements are in place and actively managed to avoid any disputes regarding accountabilities or financial terms. In addition, there is also a need to ensure that implementation of specific projects occurs in an orderly/timely fashion and does not create unnecessary ongoing business disruption, given the fact that new system functionality will be progressively rolled out over an elongated time period. Special attention needs to be made regarding “regression testing” of systems, data and reporting, to ensure that as each new system is implemented, no adverse consequences are experienced in terms of the existing ICT/business environment.
- **Data migration and management** – this is often a key area for cost and time overrun. Careful management of expectations needs to be enforced, to ensure that data to be migrated to new systems is clearly identified and “cleansed”. In addition, the volume of data to be migrated “online” to new systems, needs to be limited to that which is necessary for legal or business continuity reasons. Where possible, remaining data should be accessible via either manual access to legacy systems or stored in another agreed format for access on an as needs basis. Any requests for additional data beyond the base need, will require careful analysis in terms of cost/benefit, given the fact that such requests often lead to data accuracy risks, increased costs, delivery delays and ongoing proliferation of requests for downstream reports to be maintained post “go live”.
- **Systems Support** – consideration needs to be given to the manner in which BTP systems and data will be managed and supported post go live. As part of this, decisions need to be made regarding the structure and operating model for support activities and the demarcation of roles, accountabilities and financial arrangements between State Water and third parties. Adding to this complexity is the need to progressively change the systems support model as new BTP functionality is progressively introduced. As such, clear commercial arrangements need to be discussed and agreed prior to finalisation of delivery partners to ensure that effective consideration of the post go live environment is fully understood, budgeted and planned for.

## Recommended adjustments

As shown by the below table, we have not recommended any adjustment to this capital program.

**Table 4-18: State Water’s proposed Corporate Systems capital expenditure and our recommended expenditure (\$2013-14, \$’000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	3,028	1,409	3,514	3,110	2,532	<b>9,155</b>
Recommended adjustments			0	0	0	<b>0</b>
Recommended expenditure			3,514	3,110	2,532	<b>9,155</b>

## 4.6 Water delivery and Other Operations

### 4.6.1 State Water proposal

State Water’s proposed capex for Water Delivery and Other Operations is shown in the table below:

**Table 4-19: State Water’s proposed Water Delivery and Other Operations capex (\$2013-14, \$’000)**

Project	2014-15	2015-16	2016-17
Discretionary projects	190	110	100
Crooked Creek water efficiency project	3,456	0	0
CARMS	4,543	4,555	4,555
Other	151	30	30
<b>Total</b>	<b>8,340</b>	<b>4,695</b>	<b>4,685</b>

Note: Other projects have not been assessed.

### Discretionary projects

Through consultation with customer service committees, State Water provided an opportunity for customers to nominate projects that would be directly funded through charges. Three capital projects were nominated by customers as part of this process:

- Macquarie gauging station
- Lachlan Wallamundry Creek Private Structures
- Lachlan gauging station.

#### Macquarie gauging station

This project involves the installation of a gauging station to improve river operations downstream of Elong Elong in Talbragar. State Water proposes that this gauge system will provide river operators improved river management leading to efficiency and increased total field drainage, better river characterisation, improved delivery of water, better flow allocation and a real time tool for informed decision making.

This project has an estimated capital cost of \$60,000 scheduled for 2014-15.

#### Lachlan Wallamundry Private Structures

This project involves an estimated capital cost of \$310,000 over three years, although the nature of these works is not clear to us.

#### Lachlan gauging stations

This project involves the installation of a gauging station at the Wallaroi Creek off-take for efficient water delivery operations in the Wallamundry system. This project has an estimated cost of \$30,000 capital expenditure scheduled for 2014-15.

## Crooked Creek water efficiency project

This project involves the provision of an alternate stock and domestic water supply to Crooked Creek with the aim of:

- Providing increased stock and domestic water security
- Improving efficiency in water delivery
- Securing water for the environment
- Supporting and restoring the environment of Crooked Creek.

The proposed scheme involves the provision of either a groundwater supply or surface water supply (or combination of both) in association with a pipeline in order to reduce the transmission loss of releases through the regulated section of Crooked Creek.

Four land holders and their property boundaries have been identified as being reliant on stock and domestic water from the regulated Crooked Creek by State Water Corporation, with an annual demand of less than 1,000 ML/year. The proposed schemes suggest that savings of between 2.9 and 4.3 GL/year can be made by implementation of this scheme.

## Computer Aided River Management Systems (CARMS)

The Computer Aided River Management Systems (CARMS) is a new model of management for a natural river system being developed by State Water, which aims to achieve “the right volumes of water in the right place at the right time”. The model requires a significant increase in river flow data and as a result State Water has requested the NSW Office of Water to install additional flow monitoring data sites in the Murrumbidgee River.

CARMS is a program of works that upgrades all river operations monitoring and control technologies to industry best practice. State Water has proposed that implementation of CARMS will significantly reduce operational surplus, which is the water that has been released for river operations that subsequently is in excess of requirements (typically 5-20 per cent of the released volume).

A pilot of CARMS is currently being implemented in the Murrumbidgee valley at a cost of \$9.5m, which has been funded by the Victorian, New South Wales and Commonwealth Governments. State Water expects the pilot to be delivered during the current determination period. State Water’s proposed capex relates to rolling out CARMS in its northern valleys.

State Water claim CARMS will support efficient and frequent decision-making by river operators to ensure that the most efficient operational settings are achieved and that irrigators, environmental and other customers receive the optimal amount of water at the most effective and efficient time and location.

As a priority, State Water is investigating third party funding sources to roll out CARMS across the state however these funding sources are not guaranteed. During the process of customer consultation via Customer Service Committees, State Water offered CARMS as a potential discretionary project in each valley.

Whilst generally supportive of the concept, none of the CSCs was prepared to endorse CARMS as a discretionary project in the absence of a more detailed business case. State Water is seeking to demonstrate the benefits and critical importance to modernising the operation of its network through a more detailed business case, which is expected to be completed during the current determination.

### 4.6.2 Analysis

#### Discretionary projects

The discretionary projects identified above, and State Water’s proposed capex to deliver them, have been endorsed by the customers requesting the works.

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Given this, and their relatively small size, we have not reviewed the projects in any detail, however at a high level the estimates appear reasonable.

### Crooked Creek water efficiency project

Preliminary cost estimates of four options have been made that range from \$2.3m to \$2.68m. State Water has allowed a forecast expenditure of \$3.456m in 2014-15 to deliver this project, which includes allowances to cover the approvals and facilitation costs of the project delivery.

The scheme appears to have merit due to the operational efficiencies that it would deliver, as the water that is conserved would benefit the entire Macquarie Cudgegong Regulated Water Source.

There are however, policy issues associated with possible changes to the Water Sharing Plan regarding the provision of stock and domestic supply and ecological impacts on the existing Crooked Creek system that need to be resolved before the proposed project could proceed.

The affected landholders have been consulted and whilst they have not committed to any specific option, they are reported to be willing to consider the ongoing management options of their water supply including cost sharing arrangements for future operation of the scheme. The ongoing cost of operation of each of the options was in the order of \$25k to \$30k per year.

An NPV assessment was conducted for the identified five options as part of the Crooked Creek Water Efficiency Project. The assessment indicates that the scheme, whilst promoting water saving efficiencies, is not viable in the long term. The option with the highest NPV was \$-1.8m, based on the assumption that State Water could on-sell the saved water. This assessment was based on a 20 year design life and discount rates of 7% and an assumed price of the saved water is \$7.95/ML (average for General Security Prices during the Regulatory Period) and \$14.96/ML (average for High Security Prices during the Regulatory Period).

On this basis, the forecast expenditure is not considered prudent and it is recommended that the expenditure be removed.

State Water indicated its agreement with our recommendation to remove this expenditure. State Water also requested an additional \$50,000 of opex to conduct investigative work to inform the development of a business case to alleviate customer concerns. We consider that these costs should be absorbed by State Water due to the fact that investigative work and business case development is simply part of the normal ebb and flow of work requirements.

### CARMS

Despite the proposed merits of CARMS, which centre on improved operational efficiency, we cannot endorse this project due to the lack of customer endorsement for irrigator funding of the project and the uncertainty of the benefits until completion of a satisfactory business case.

The economics of a decision by State Water to proceed with CARMS will depend on the availability of third-party funding, as well as the extent to which the potential reductions in operational surplus outweigh the required capex. This will require continued monitoring and assessment of the success of the Murrumbidgee pilot study.

### 4.6.3 Recommendation

The table below sets the adjustments we have made to State Water's proposed expenditure forecasts and as a result our recommended operating expenditure over the 2014-17 regulatory period.

**Table 4-20: State Water's proposed Water Delivery and Other Operations capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed expenditure	20,787	6,453	8,340	4,695	4,685	17,720
Recommended adjustments			-7,999	-4,555	-4,555	-17,109

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	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Recommended expenditure			341	140	130	0

## 4.7 Summary of project adjustments

Based on the discussion above, we have made the following adjustments to State Water's capex at a project level:

**Table 4-21: State Water's proposed capital expenditure and our recommended project adjustments (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	64,914	96,117	113,508	56,726	25,646	195,881
<b>Deloitte adjustments</b>						
Oberon Dam			-145	-470	-5,388	-6,003
CARMS			-4,543	-4,555	-4,555	-13,653
Crooked Creek Water Efficiency Project			-3,456	0	0	-3,456
<b>Total adjustments (\$)</b>			<b>-8,144</b>	<b>-5,025</b>	<b>-9,943</b>	<b>-23,112</b>
<b>Recommended capital expenditure</b>			<b>105,364</b>	<b>51,701</b>	<b>15,703</b>	<b>172,768</b>

Note: The reallocation of Rydal Dam inlet and outlet works expenditure from Renewals and Replacements to Dam Safety Compliance has no net impact on State Water's proposed capex and therefore not been shown in this table.

Source: Deloitte analysis

The following sections set out the adjustments we have made in relation to contingencies and project delivery and timing.

## 4.8 Contingencies

### State Water proposal

At the last determination, IPART determined that a contingency fund at a program level would be more appropriate than provision of contingency at each project level, since each project may have a conservative contingency of 10% to 15%, but not all projects would utilise it. Accordingly, since 2010, State Water has adopted a program-based approach to setting contingencies.

State Water's proposed capex includes contingencies for the Dam Safety Compliance and Environmental Planning and Protection capital programs equal to approximately 10% of each program's total capex. State Water's proposed DSC and EPP contingencies are therefore \$8.3m and \$4.8m, respectively.

**Table 4-22: State Water's proposed DSC and EPP contingencies (\$2013-14, \$'000)**

Program	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Dam Safety Compliance	0	4,970	4,880	2,340	1,100	8,320
Environmental Planning and Protection	0	2,170	3,470	1,310	0	4,780

Source: State Water

State Water has not included contingency funds in its proposed expenditure for other capital programs (e.g. Renewals and Replacements), however these are relatively minor programs in comparison to the DSC and EPP programs.

[ Redacted – confidential ]

EPP forecasts have been prepared on a P50 basis. For the Dam Safety Works projects, an independent risk based (Monte Carlo analysis) estimate for the various option were completed by consultants such as Evans & Peck, Parsons Brinkerhoff and Hincks and Associates as part of the Business Cases for the various projects. The cost risk assessment included consideration of the major component cost items (e.g. contractors, availability and source of materials) and their likely impact on overall cost.

The results of the estimate and risk analysis indicate that the construction cost for the various dam safety works have a range of probabilities. By way of example, for Burrendong Dam the P50 costs were +11% when compared to the Base Cost Estimate and the P90 costs were 29% greater than the Base Estimate.

In the previous regulatory period State Water adopted the P90 values, which is a conservative approach that allows greater certainty for budgetary planning.

The adoption of a P20 for this regulatory period indicates that State Water is adopting a greater risk profile with these projects compared to earlier regulatory periods, which suggests that there is a maturing of the understanding of the project risks which has been derived from recent experience. This is evidenced by the fact that the use of contingency for the dam safety projects was low.

## Analysis

There are two approaches to setting contingencies in project cost estimation:

- Risk contingency
- Project contingency.

A risk contingency is an allowance that is included in the cost estimate to provide for the weighted cost of risks occurring that are identified in the Project Risk Register. This value is calculated using the Project Risk Register and it takes into account the likelihood of a risk occurring and its potential consequence. The Risk Register also allows a percentage of the total risk amount for 'Unforeseen Risks' to take account of potential risks that were not specifically identified in the Risk Register.

A project contingency is the level of uncertainty within each level (such as Feasibility, Concept, Detailed) of the cost estimate. The Project Contingency is calculated by multiplying the total cost estimate (including risk contingency) by half (typically) the stated order of accuracy of the level of estimate. The order of accuracy is reduced by half in recognition of the likelihood that only some of the estimating will be inaccurate.

The table below shows that the DSC program contingency has not been utilised over the last three years, while around 60% of the EPP program contingency has been utilised.

**Table 4-23: State Water's historical use of DSC and EPP contingencies**

Program	Contingency	2010-11	2011-12	2012-13	Total
Dam Safety Compliance	Contingency budget (\$)	5,422,396	6,034,700	3,990,000	<b>15,447,096</b>
	Actual contingency usage (\$)	-	-	-	-
	Actual contingency usage (%)	0%	0%	0%	<b>0%</b>
Environmental Planning and Protection	Contingency budget (\$)	1,236,669	461,400	2,340,000	<b>4,038,069</b>
	Actual contingency usage (\$)	53,000	461,400	1,894,000	<b>2,408,400</b>
	Actual contingency usage (%)	4%	100%	81%	<b>60%</b>

Source: State Water

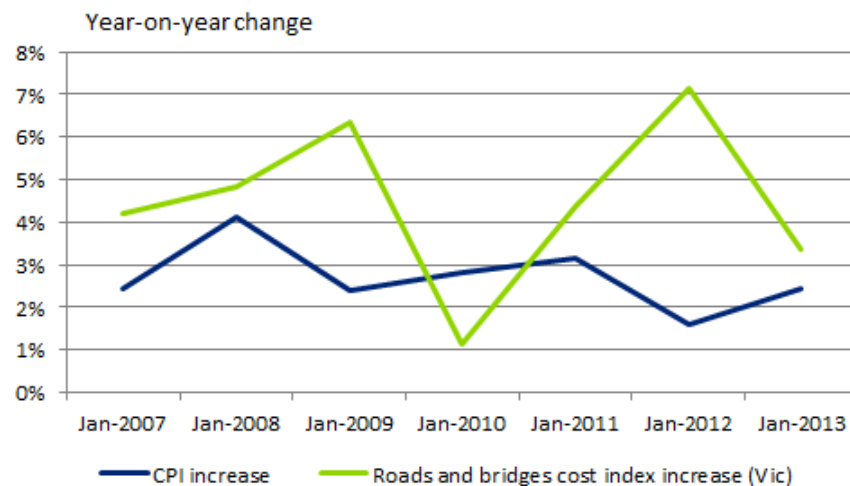
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In one sense the relatively low use of contingencies is commendable given that in the last few years increases in construction industry costs have been high and above CPI inflation. This is primarily as a result of the surge in construction in the mining industry, which has bid scarce resources away from the non-mining sectors, including the utilities (water and energy) sector.

The following chart shows construction cost changes in the ABS' Roads and Bridges sub-sector (there is no direct equivalent for the water sector, although the nature of cost inputs (labour, earth moving equipment, concrete) is likely to be similar). It shows that with one exception, in recent years construction costs have been increasing well ahead of the CPI.

**Chart 4.1 Historic inflation**



It is worth noting that State Water's relatively low use of the contingency provisions is also due to the fact that a P90 estimate appears to have been used in the current regulatory period for DSC projects, and also that many EPP projects were rescoped or deferred during the period.

Looking forward, at an economy-wide level construction costs pressures appear to be easing as a result of a reduced forward pipeline of work. Deloitte Access Economics' July 2013 *Investment Monitor* noted that:

- The total value of capital expenditure projects in our database fell. The value of projects decreased by \$51.8 billion to be \$877.1 billion - that's a 5.6% fall from the March quarter 2013, to finish 4.7% lower than a year ago
- The value of resources projects fell for a second consecutive quarter – the first such occurrence in a decade.

In the water sector more specifically, a steady slowdown in the value of work done (capital expenditure) has taken place since 2010. The value of work done in the water sector dropped 15% from the March 2012 quarter to the March 2013 quarter. The percentage change from the previous quarter to the March 2013 quarter was even greater at -30%.

The proposed removal of the carbon price will also help reduce capital costs, although only marginally.

Our view therefore is that:

- In respect of DSC projects, the 10% contingency allowance appears reasonable given the shift to estimating DSC capex on a P20 basis
- The EPP program contingency of 10% for the P50 program may be excessive and should be reduced to 5%.

State Water indicated its agreement with our recommended approach to setting contingencies.

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## Recommendation

We have adjusted program contingencies to:

- Remove the Oberon Dam portion of the DSC contingency
- Reduce the EPP program contingency from 10% to 5%.

**Table 4-24: State Water's proposed capital expenditure and our recommended contingency adjustments (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Adjusted expenditure per Table 4-21			105,364	51,701	15,703	<b>172,768</b>
<b>Deloitte adjustments</b>						
Oberon Dam contingency			-14	-40	-490	<b>-543</b>
EPP contingencies			-1,735	-655	0	<b>-2,390</b>
<b>Total adjustments (\$)</b>			<b>-1,749</b>	<b>-695</b>	<b>-490</b>	<b>-2,933</b>
<b>Recommended capital expenditure</b>			<b>103,616</b>	<b>51,006</b>	<b>15,213</b>	<b>169,835</b>

Source: Deloitte analysis

## 4.9 Project timing and deliverability

During the current regulatory period, State Water has significantly underspent against its previously proposed capex (recognising that 2013-14 expenditure is budgeted), especially in relation to:

- Dam safety compliance; and
- Environmental planning and protection.

Below we have summarised State Water's views on the reasons for the differences between the proposed and actual expenditure.

### Dam Safety Compliance:

#### 2010-2011

There was an \$11.9m underspend attributable to project estimates being revised due to tender prices varying from those originally forecast.

#### 2011-12

There was a \$27.7m underspend due to tenders received for construction on some projects being significantly under estimate. The original program put to IPART was amended. The amended program involved:

- deferring the Keepit embankment raising to 2013-14 with completion in 2015-16;
- deferring the Wyangala parapet wall (due to the reassessment of the risk in the current PRA) to the 2017 determination with an objective to find lower cost options; and
- bringing forward the Chaffey stage 2 of raising the dam wall, commencing in 2011-12 and due to be completed in 2014-15 as the first stage of the augmentation project.

#### 2012-2013

There is a \$43.8m forecast underspend largely attributed to delays with the Chaffey Dam project as a result of delays finalising environmental assessments and calling construction tenders. The project also experienced an extended review of construction tenders. Wyangala Dam safety project experienced a delay in detailed design which resulted in a subsequent delay in calling construction

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tenders and letting the contract. Finally, the Keepit Dam upgrade project experienced delays in detailed design with a component of work being pushed out to 2014-15.

#### **2013-2014**

The capital budget for dam safety in 2013-14 is \$31.5m greater than the allowed IPART amount for the 2013-14 period. This difference is attributable to the Burrendong, Keepit and Wyangala dam safety projects having components deferred until the end of the determination period. In addition to these measures, the Chaffey Dam safety upgrade project was not initially included in the current regulatory period but was brought forward due to funding for augmentation and safety works by the Commonwealth and NSW Governments and Tamworth Regional Council.

### **Environmental Planning and Protection**

#### **2010-2011**

There was a \$3.3m underspend due to wet conditions and flooding during the year. In addition, changes in scope to the Blowering riparian pipeline and Keepit fishway offsets contributed to the underspend.

#### **2011-2012**

There was a \$8.4m underspend due to wet conditions and flooding during 2011-12, particularly in the Murray and Murrumbidgee valleys. In addition, estimates for fishway offset projects exceeded the IPART determinations, resulting in the projects being rescheduled to maximise progress with limited construction due to the limited funding available.

#### **2012-2013**

An \$11.5m forecast underspend has been driven by estimated costs of fishways being significantly greater than estimates developed at the start of the regulatory period. This discrepancy has led to State Water reconsidering the value of these projects. The Keepit offset fishways project was delayed due to a review of procurement due to high tender price and recalling construction tenders. Copeton offset fishways project was delayed due to a major review of the project scope at a value management workshop and the recalling of design tenders. Finally, the Burrendong and Wyangala offset fishway projects have been delayed so a review of the program could be undertaken to ensure value can be achieved. These works are scheduled to be undertaken in 2013-14.

#### **2013-2014**

The capital budget for environmental planning and protection is \$19m greater than the allowed IPART amount for 2013-14. This difference is attributable to the Burrendong, Copeton, Keepit and Wyangala offset fishway projects proceeding after delays in the program so the procurement and scope of the projects could be reviewed to ensure that value is achieved.

### **Analysis**

We accept that there have been recent improvements in State Water's governance arrangements with respect to the delivery of capital program.

Nevertheless we are of the view that on-schedule delivery of its Dam Safety Compliance and Environmental Planning and Protection programs is at risk due to the sheer size of the program in the first two years of the upcoming regulatory period:

In relation to dam safety State Water claims that with the maturity of the various dam safety compliance projects and environmental planning projects, the project works and hence estimates are now known with some confidence (P90 estimates) and along with the revised Project Governance arrangements in place since early 2013, State Water is in position to be able to deliver the capex program as described.

State Water point to the fact that most of the major dam safety projects are well advanced:

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- Wyangala Dam Phase 1 Upgrade
- Keepit Dam Work Package 2
- Chaffey Augmentation
- Burrendong Phase 1b.

We accept that this is the case, and note that the general easing in construction markets should result in more certain costs and better contractor availability. However we also note that matters outside State Water's control (for example wet weather, environmental approvals) may also create project delays.

In relation to the EPP program, State Water's rationale for the front end loading of the capex program is to ensure that works commence before current Environmental Approvals expire. State Water has suggested the approvals process may need to be revisited adding further program delays and possible cost escalation.

However we note that:

- According to the DPI Fisheries submission to the ACCC, DPI Fisheries have the expectation that the fishway design and construction of the 12 remaining high priority offset sites be completed by the end of the 2014-17 regulatory period.
- The existing environmental approvals do not suggest that the program of works needs to be limited to the first two years of the regulatory period.

In addition:

- Several of the EPP projects are still conceptual at this stage, and it is difficult to see how such a large amount of capital expenditure could occur before the end of 2014-15
- The EPP program in particular has a history of delays and deferrals.

## Recommendations

Despite improvements in State Water's governance arrangements with respect to the delivery of capital programs, we are of the view that on-schedule delivery of its Dam Safety Compliance and Environmental Planning and Protection programs may not occur due to:

- The extent to which these programs are 'frontloaded', with approximately 65% of capex in the first year of the regulatory period
- The potential risks for wet weather to delay works, which has historically occurred on a number of occasions
- The fact that the EPP program in particular is susceptible to project delays.

We therefore propose to make the timing adjustments set out below to the overall capital program. While these adjustments are somewhat subjective, we believe they result in a much more realistic capital program.

We allocated our timing adjustments across EPP projects by:

1. Allocating the \$20m reduction in the first year to each project based on its proportion of EPP capex in that year
2. Distributing each project's subsequent reduction in the first year evenly across the second two years.

**Table 4-25: State Water's proposed capital expenditure and our recommended timing adjustments (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Adjusted expenditure per Table 4-24			103,616	51,006	15,213	<b>169,835</b>
<b>Deloitte adjustments</b>						
EPP retiming			-20,000	10,000	10,000	<b>0</b>
<b>Total adjustments (\$)</b>			<b>-20,000</b>	<b>10,000</b>	<b>10,000</b>	<b>0</b>
<b>Recommended capital expenditure</b>			<b>83,616</b>	<b>61,006</b>	<b>25,213</b>	<b>169,835</b>

## 4.10 Recommended capital expenditure

The table below summarises the adjustments we have made to State Water's proposed capital expenditure forecasts and as a result our recommended capital expenditure over the 2014-17 regulatory period.

**Table 4-26: State Water's proposed capital expenditure and our recommended expenditure (\$2013-14, \$'000)**

	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	64,914	96,117	113,508	56,726	25,646	<b>195,881</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-72	-292	-94	<b>-459</b>
Oberon			-145	-470	-5,388	<b>-6,003</b>
CARMS			-4,543	-4,555	-4,555	<b>-13,653</b>
Crooked Creek Water Efficiency Project			-3,456	0	0	<b>-3,456</b>
Contingencies			-1,749	-695	-490	<b>-2,933</b>
Timing adjustments			-20,000	10,000	10,000	<b>0</b>
<b>Total adjustments (\$)</b>			<b>-29,965</b>	<b>3,988</b>	<b>-527</b>	<b>-26,504</b>
<b>Total adjustments (%)</b>			<b>-26%</b>	<b>7%</b>	<b>-2%</b>	<b>-14%</b>
<b>Recommended capital expenditure</b>			<b>83,543</b>	<b>60,714</b>	<b>25,119</b>	<b>169,376</b>

Note: The reallocation of Rydal Dam inlet and outlet works expenditure from Renewals and Replacements to Dam Safety Compliance has no net impact on State Water's proposed capex and therefore not been shown in this table.

# 5 Limitation of our work

## General use restriction

This report is prepared solely for the internal use of the Australian Competition and Consumer 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 set out in our proposal dated 15 March 2013. You should not refer to or use our name or the advice for any other purpose.



# Appendix A

## Recommended operating expenditure by valley

### Border

**Table A 1: State Water's proposed operating expenditure and Deloitte recommended expenditure, Border (\$2013-14, \$'000)**

Border	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	1,411	1,504	1,644	1,628	1,532	<b>4,804</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-39	-33	-24	<b>-96</b>
Corporate and indirect costs			-11	-9	-7	<b>-26</b>
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-7	-7	-7	<b>-21</b>
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-15	-14	-14	<b>-42</b>
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-2		<b>-2</b>
Insurance						
Corporate Systems			-10	-7	-8	<b>-26</b>
<b>Efficiency savings</b>			-6	-11	-15	<b>-32</b>
<b>Total adjustments (\$)</b>			<b>-88</b>	<b>-83</b>	<b>-75</b>	<b>-245</b>
<b>Total adjustments (%)</b>			<b>-5%</b>	<b>-5%</b>	<b>-5%</b>	<b>-5%</b>
<b>Recommended operating expenditure</b>			<b>1,556</b>	<b>1,546</b>	<b>1,458</b>	<b>4,559</b>

### Gwydir

**Table A 2: State Water's proposed operating expenditure and Deloitte recommended expenditure, Gwydir (\$2013-14, \$'000)**

Gwydir	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	3,895	4,028	4,292	4,179	4,132	<b>12,604</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-94	-78	-58	<b>-230</b>
Corporate and indirect costs			-26	-21	-16	<b>-63</b>

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Gwydir	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-15	-15	-15	-45
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-25	-23	-23	-70
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-6		-6
Insurance						
Corporate Systems			-27	-19	-21	-68
<b>Efficiency savings</b>			-15	-29	-42	-86
<b>Total adjustments (\$)</b>			<b>-202</b>	<b>-191</b>	<b>-174</b>	<b>-567</b>
<b>Total adjustments (%)</b>			<b>-5%</b>	<b>-5%</b>	<b>-4%</b>	<b>-4%</b>
<b>Recommended operating expenditure</b>			<b>4,091</b>	<b>3,988</b>	<b>3,958</b>	<b>12,037</b>

## Namoi

**Table A 3: State Water's proposed operating expenditure and Deloitte recommended expenditure, Namoi (\$2013-14, \$'000)**

Namoi	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	4,588	4,916	4,924	4,790	4,754	14,467
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-112	-93	-69	-274
Corporate and indirect costs			-31	-26	-19	-75
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-15	-15	-16	-46
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-33	-30	-30	-93
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-4		-4

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Namoi	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Insurance						
Corporate Systems			-31	-22	-24	-77
<b>Efficiency savings</b>			-17	-33	-48	-98
<b>Total adjustments (\$)</b>			-239	-223	-206	-668
<b>Total adjustments (%)</b>			-5%	-5%	-4%	-5%
<b>Recommended operating expenditure</b>			4,684	4,567	4,548	13,799

## Peel

**Table A 4: State Water's proposed operating expenditure and Deloitte recommended expenditure, Peel (\$2013-14, \$'000)**

Peel	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	1,200	1,341	1,522	1,867	1,637	5,026
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-32	-26	-20	-78
Corporate and indirect costs			-9	-7	-5	-22
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-5	-5	-5	-14
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-15	-14	-14	-44
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-18		-18
Insurance						
Corporate Systems			-10	-8	-8	-26
<b>Efficiency savings</b>			-5	-13	-17	-35
<b>Total adjustments (\$)</b>			-76	-91	-69	-235
<b>Total adjustments (%)</b>			-5%	-5%	-4%	-5%
<b>Recommended operating expenditure</b>			1,446	1,776	1,568	4,791

## Lachlan

**Table A 5: State Water's proposed operating expenditure and Deloitte recommended expenditure, Lachlan (\$2013-14, \$'000)**

Lachlan	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	5,232	5,521	6,192	6,106	5,743	18,041
<b>Deloitte adjustments</b>						

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Lachlan	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
<b>Cost items</b>						
Direct salaries and wages			-129	-107	-79	<b>-315</b>
Corporate and indirect costs			-35	-29	-22	<b>-87</b>
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-28	-28	-23	<b>-79</b>
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-52	-48	-48	<b>-147</b>
Corrective Maintenance			-58	-55	-56	<b>-169</b>
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-10		<b>-10</b>
Insurance						
Corporate Systems			-39	-28	-29	<b>-96</b>
<b>Efficiency savings</b>			-21	-41	-58	<b>-120</b>
<b>Total adjustments (\$)</b>			<b>-362</b>	<b>-347</b>	<b>-315</b>	<b>-1,024</b>
<b>Total adjustments (%)</b>			<b>-6%</b>	<b>-6%</b>	<b>-5%</b>	<b>-6%</b>
<b>Recommended operating expenditure</b>			<b>5,829</b>	<b>5,759</b>	<b>5,429</b>	<b>17,017</b>

## Macquarie

**Table A 6: State Water's proposed operating expenditure and Deloitte recommended expenditure, Macquarie (\$2013-14, \$'000)**

Macquarie	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	5,144	5,413	6,073	6,106	6,445	<b>18,625</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-121	-101	-75	<b>-297</b>
Corporate and indirect costs			-33	-28	-21	<b>-82</b>
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-26	-26	-27	<b>-80</b>
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-39	-36	-36	<b>-112</b>
Corrective Maintenance			-140	-123	-124	<b>-387</b>
Routine Maintenance						

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Macquarie	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-9		-9
Insurance						
Corporate Systems			-38	-28	-32	-98
<b>Efficiency savings</b>			-21	-41	-64	-126
<b>Total adjustments (\$)</b>			<b>-419</b>	<b>-393</b>	<b>-379</b>	<b>-1,191</b>
<b>Total adjustments (%)</b>			<b>-7%</b>	<b>-6%</b>	<b>-6%</b>	<b>-6%</b>
<b>Recommended operating expenditure</b>			<b>5,654</b>	<b>5,714</b>	<b>6,066</b>	<b>17,434</b>

## Murray

**Table A 7: State Water's proposed operating expenditure and Deloitte recommended expenditure, Murray (\$2013-14, \$'000)**

Murray	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	3,746	3,978	4,488	4,089	4,247	12,824
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-111	-93	-69	-273
Corporate and indirect costs			-30	-25	-19	-74
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-23	-23	-24	-70
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-6	-6	-6	-18
Corrective Maintenance						
Routine Maintenance			-170	-170	-170	-510
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-13		-13
Insurance						
Corporate Systems			-29	-19	-21	-69
<b>Efficiency savings</b>			-15	-27	-41	-83
<b>Total adjustments (\$)</b>			<b>-385</b>	<b>-375</b>	<b>-350</b>	<b>-1,110</b>
<b>Total adjustments (%)</b>			<b>-9%</b>	<b>-9%</b>	<b>-8%</b>	<b>-9%</b>
<b>Recommended operating expenditure</b>			<b>4,103</b>	<b>3,714</b>	<b>3,897</b>	<b>11,713</b>

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## Murrumbidgee

**Table A 8: State Water's proposed operating expenditure and Deloitte recommended expenditure, Murrumbidgee (\$2013-14, \$'000)**

Murrumbidgee	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	7,130	7,394	8,063	7,975	8,047	<b>24,086</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-172	-143	-106	<b>-422</b>
Corporate and indirect costs			-47	-39	-29	<b>-116</b>
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-30	-30	-30	<b>-90</b>
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-34	-31	-31	<b>-95</b>
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-12		<b>-12</b>
Insurance						
Corporate Systems			-51	-37	-40	<b>-128</b>
<b>Efficiency savings</b>			-28	-55	-82	<b>-165</b>
<b>Total adjustments (\$)</b>			<b>-362</b>	<b>-347</b>	<b>-319</b>	<b>-1,027</b>
<b>Total adjustments (%)</b>			<b>-4%</b>	<b>-4%</b>	<b>-4%</b>	<b>-4%</b>
<b>Recommended operating expenditure</b>			<b>7,701</b>	<b>7,629</b>	<b>7,728</b>	<b>23,058</b>

## Lowbidgee

**Table A 9: State Water's proposed operating expenditure and Deloitte recommended expenditure, Lowbidgee (\$2013-14, \$'000)**

Lowbidgee	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	0	0	769	651	601	<b>2,021</b>
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-10	-9	-6	<b>-26</b>
Corporate and indirect costs			-3	-2	-2	<b>-7</b>
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-5	-5	-5	<b>-16</b>

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Lowbidgee	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			0	0	0	0
Corrective Maintenance						
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection			0	0	0	0
Insurance						
Corporate Systems			-4	-2	-2	-8
<b>Efficiency savings</b>			-3	-5	-6	-13
<b>Total adjustments (\$)</b>			<b>-25</b>	<b>-23</b>	<b>-22</b>	<b>-70</b>
<b>Total adjustments (%)</b>			<b>-3%</b>	<b>-4%</b>	<b>-4%</b>	<b>-3%</b>
<b>Recommended operating expenditure</b>			<b>744</b>	<b>628</b>	<b>579</b>	<b>1,951</b>

## Fish River

**Table A 10: State Water's proposed operating expenditure and Deloitte recommended expenditure, Fish River (\$2013-14, \$'000)**

Fish River	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed operating expenditure	4,718	4,264	4,652	4,572	4,549	13,773
<b>Deloitte adjustments</b>						
<b>Cost items</b>						
Direct salaries and wages			-98	-82	-61	-241
Corporate and indirect costs			-23	-19	-14	-56
<b>Activities</b>						
Customer Support						
Customer Billing						
Metering and Compliance						
Water Delivery and Other Operations			-22	-27	-60	-109
Flood Operations						
Hydrometric Monitoring						
Water Quality Monitoring			-41	-37	-37	-116
Corrective Maintenance			-127	-117	-118	-362
Routine Maintenance						
Asset Management and Planning						
Dam Safety Compliance						
Environmental Planning and Protection				-8		-8
Insurance						
Corporate Systems			-29	-21	-22	-72
<b>Efficiency savings</b>			-16	-30	-45	-91
<b>Total adjustments (\$)</b>			<b>-356</b>	<b>-342</b>	<b>-357</b>	<b>-1,055</b>
<b>Total adjustments (%)</b>			<b>-8%</b>	<b>-7%</b>	<b>-8%</b>	<b>-8%</b>

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Fish River	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Recommended operating expenditure			4,296	4,230	4,192	12,718

## Recommended capital expenditure by valley

### Border

Table A 11: State Water's proposed capital expenditure and Deloitte recommended expenditure, Border (\$2013-14, \$'000)

Border	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	1,190	115	330	351	282	963
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-3	-11	-3	-17
Oberon						
CARMS			-189	-189	-188	-566
Contingencies						
Timing adjustments						
<b>Total adjustments (\$)</b>			<b>-192</b>	<b>-200</b>	<b>-191</b>	<b>-583</b>
<b>Total adjustments (%)</b>			<b>-58%</b>	<b>-57%</b>	<b>-68%</b>	<b>-61%</b>
<b>Recommended capital expenditure</b>			<b>139</b>	<b>151</b>	<b>90</b>	<b>380</b>

### Gwydir

Table A 12: State Water's proposed capital expenditure and Deloitte recommended expenditure, Gwydir (\$2013-14, \$'000)

Gwydir	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	12,802	4,236	16,198	5,384	735	22,317
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-7	-29	-9	-46
Oberon						
CARMS			-403	-402	-400	-1,205
Contingencies			-569	-197		-766
Timing adjustments			-6,557	3,279	3,279	0
<b>Total adjustments (\$)</b>			<b>-7,536</b>	<b>2,650</b>	<b>2,869</b>	<b>-2,017</b>
<b>Total adjustments (%)</b>			<b>-47%</b>	<b>49%</b>	<b>390%</b>	<b>-9%</b>
<b>Recommended capital expenditure</b>			<b>8,662</b>	<b>8,034</b>	<b>3,604</b>	<b>20,301</b>



## Namoi

**Table A 13: State Water's proposed capital expenditure and Deloitte recommended expenditure, Namoi (\$2013-14, \$'000)**

Namoi	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	5,288	14,101	31,180	26,463	730	<b>58,373</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-8	-34	-11	<b>-53</b>
Oberon						<b>0</b>
CARMS			-416	-416	-413	<b>-1,245</b>
Contingencies			-177			<b>-177</b>
Timing adjustments			-2,035	1,017	1,017	<b>0</b>
<b>Total adjustments (\$)</b>			<b>-2,636</b>	<b>568</b>	<b>594</b>	<b>-1,474</b>
<b>Total adjustments (%)</b>			<b>-8%</b>	<b>2%</b>	<b>81%</b>	<b>-3%</b>
<b>Recommended capital expenditure</b>			<b>28,544</b>	<b>27,031</b>	<b>1,324</b>	<b>56,899</b>

## Peel

**Table A 14: State Water's proposed capital expenditure and Deloitte recommended expenditure, Peel (\$2013-14, \$'000)**

Peel	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	2,136	16,763	12,647	349	228	<b>13,223</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-3	-13	-4	<b>-19</b>
Oberon						<b>0</b>
CARMS			-126	-126	-126	<b>-379</b>
Contingencies						<b>0</b>
Timing adjustments						<b>0</b>
<b>Total adjustments (\$)</b>			<b>-129</b>	<b>-139</b>	<b>-130</b>	<b>-398</b>
<b>Total adjustments (%)</b>			<b>-1%</b>	<b>-40%</b>	<b>-57%</b>	<b>-3%</b>
<b>Recommended capital expenditure</b>			<b>12,518</b>	<b>210</b>	<b>98</b>	<b>12,825</b>

## Lachlan

**Table A 15: State Water's proposed capital expenditure and Deloitte recommended expenditure, Lachlan (\$2013-14, \$'000)**

Lachlan	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	10,096	26,917	18,625	11,897	2,126	<b>32,648</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-10	-41	-13	<b>-64</b>

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Lachlan	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Oberon						0
CARMS			-578	-577	-576	-1,730
Contingencies			-600	-458		-1,058
Timing adjustments			-6,919	3,459	3,459	0
<b>Total adjustments (\$)</b>			<b>-8,107</b>	<b>2,384</b>	<b>2,871</b>	<b>-2,853</b>
<b>Total adjustments (%)</b>			<b>-44%</b>	<b>20%</b>	<b>135%</b>	<b>-9%</b>
<b>Recommended capital expenditure</b>			<b>10,518</b>	<b>14,281</b>	<b>4,996</b>	<b>29,795</b>

## Macquarie

**Table A 16: State Water's proposed capital expenditure and Deloitte recommended expenditure, Macquarie (\$2013-14, \$'000)**

Macquarie	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	3,590	18,606	27,172	4,294	1,730	33,196
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-10	-43	-15	-68
Oberon						0
CARMS			-576	-576	-573	-1,725
Crooked Creek Water Efficiency Project			-3,456	0	0	-3,456
Contingencies			-323			-323
Timing adjustments			-3,726	1,863	1,863	0
<b>Total adjustments (\$)</b>			<b>-8,092</b>	<b>1,245</b>	<b>1,275</b>	<b>-5,572</b>
<b>Total adjustments (%)</b>			<b>-30%</b>	<b>29%</b>	<b>74%</b>	<b>-17%</b>
<b>Recommended capital expenditure</b>			<b>19,081</b>	<b>5,539</b>	<b>3,004</b>	<b>27,624</b>

## Murray

**Table A 17: State Water's proposed capital expenditure and Deloitte recommended expenditure, Murray (\$2013-14, \$'000)**

Murray	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	3,153	3,122	2,658	1,553	1,335	5,546
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-7	-28	-9	-45
Oberon						0
CARMS			-636	-635	-635	-1,906
Contingencies			-66			-66
Timing adjustments			-763	382	382	0
<b>Total adjustments (\$)</b>			<b>-1,473</b>	<b>-281</b>	<b>-263</b>	<b>-2,017</b>
<b>Total adjustments (%)</b>			<b>-55%</b>	<b>-18%</b>	<b>-20%</b>	<b>-36%</b>

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Murray	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Recommended capital expenditure			1,186	1,272	1,071	3,529

## Murrumbidgee

**Table A 18: State Water's proposed capital expenditure and Deloitte recommended expenditure, Murrumbidgee (\$2013-14, \$'000)**

Murrumbidgee	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	25,299	10,432	2,516	1,577	2,254	6,347
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-14	-58	-18	-90
Oberon						0
CARMS			-811	-810	-805	-2,425
Contingencies						0
Timing adjustments						0
<b>Total adjustments (\$)</b>			<b>-825</b>	<b>-867</b>	<b>-823</b>	<b>-2,515</b>
<b>Total adjustments (%)</b>			<b>-33%</b>	<b>-55%</b>	<b>-37%</b>	<b>-40%</b>
<b>Recommended capital expenditure</b>			<b>1,691</b>	<b>710</b>	<b>1,431</b>	<b>3,832</b>

## Lowbidgee

**Table A 19: State Water's proposed capital expenditure and Deloitte recommended expenditure, Lowbidgee (\$2013-14, \$'000)**

Lowbidgee	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	0	0	349	829	642	1,820
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-1	-5	-1	-7
Oberon						0
CARMS						0
Contingencies						0
Timing adjustments						0
<b>Total adjustments (\$)</b>			<b>-1</b>	<b>-5</b>	<b>-1</b>	<b>-7</b>
<b>Total adjustments (%)</b>			<b>0%</b>	<b>-1%</b>	<b>0%</b>	<b>0%</b>
<b>Recommended capital expenditure</b>			<b>348</b>	<b>825</b>	<b>640</b>	<b>1,813</b>

## Fish River

**Table A 20: State Water's proposed capital expenditure and Deloitte recommended expenditure, Fish River (\$2013-14, \$'000)**

Fish River	Current period		Next regulatory period			Total
	2012-13	2013-14	2014-15	2015-16	2016-17	
Proposed capital expenditure	1,361	1,824	1,832	4,029	15,585	<b>21,447</b>
<b>Deloitte adjustments</b>						
Corporate Systems reallocation			-8	-31	-10	<b>-49</b>
Oberon			-145	-470	-5,388	<b>-6,003</b>
CARMS			-808	-826	-838	<b>-2,472</b>
Contingencies			-14	-40	-490	<b>-543</b>
Timing adjustments						<b>0</b>
<b>Total adjustments (\$)</b>			<b>-974</b>	<b>-1,367</b>	<b>-6,726</b>	<b>-9,068</b>
<b>Total adjustments (%)</b>			<b>-53%</b>	<b>-34%</b>	<b>-43%</b>	<b>-42%</b>
<b>Recommended capital expenditure</b>			<b>858</b>	<b>2,662</b>	<b>8,859</b>	<b>12,379</b>