Government of South Australia

SA Water

SA Water Regulatory Business Proposal 2016-2020

SA Water Corporation
ABN: 69 336 525019

Head Office
250 Victoria Square/Tarndanyangga
Adelaide SA 5000

Postal Address
GPO Box 1751
Adelaide SA 5001

Customer Service Centre
1300 650 950

www.sawater.com.au

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Foreword

SA Water is focused on meeting all of the challenges to deliver safe, sustainable and affordable water and sewerage services to the South Australian community.

We operate in the driest state on the driest inhabited continent in the world. We service over 750,000 customers across an expansive network of water and sewerage pipes and infrastructure worth in excess of $11 billion. Our water and sewerage networks span vast areas from Ceduna through to Port Augusta, across to the Riverland and down to Mount Gambier and most places in between. These areas are geographically, climatically and socially diverse and for over 160 years we have successfully provided water and sewerage services to meet the varied needs of our customers across the State.

Over the past 2 years we have developed our plans to deliver water and sewerage services for the second regulatory period from 1 July 2016 – 30 June 2020. Regulatory Business Proposal 2016 (our proposal) is a summary of our plans for the second regulatory period. Our proposal focuses on the quality of the services we will provide customers and how we can deliver these efficiently.

To develop our proposal we engaged with our customers more extensively than we have in the past to understand their needs and expectations and to explain the challenges we face in delivering their services. This robust customer engagement program, called Your Say, has received positive feedback from customers, customer representative bodies and key stakeholders. We would like to thank those across the State who participated in this process.

We understand affordability is a key concern for customers, so over the second regulatory period we are committed to keeping prices as low as possible to deliver the services valued by customers.

Recent independent benchmarking shows we are one of the most efficient water utilities in Australia. We have worked hard to ensure our proposal for the second regulatory period meets our statutory obligations and delivers services our customers value at the lowest possible cost.

We will continue to invest in infrastructure and technology to deliver long term benefits to customers and the environment. Using insights from our customer and stakeholder engagement, we developed investment plans that balance delivering services our customers told us they want, meeting our statutory obligations, achieving affordable prices and managing risk.

We remain committed to supporting economic development and the prosperity of the South Australian community through the provision of essential services and a sustainable and reliable water supply. Our proposal also ensures we can deliver water security for customers at the lowest long term cost.

Our proposal strikes an appropriate balance between the needs of current and future customers, our stakeholders, the environment, our employees, the community and our owner. Our proposal provides transparent and evidence based information to support ESCOSA as it makes its second determination. On behalf of the Board of SA Water, we recommend this proposal as prudent and efficient.

Lew Owens
Chairman, SA Water Board

John Ringham
Chief Executive

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Executive summary

For almost 160 years we have been the major provider of water and sewerage services to South Australians.

We currently service a population of over 1.6 million across a network of over 27,000 kilometres of water pipes and over 8,000 kilometres of sewerage pipes. We employ over 1,400 South Australians directly and many more through our supply, operational and construction contracts. Our customers have been and will continue to be at the heart of our business. We are committed to delivering quality water and sewerage services to customers efficiently and to the agreed level of service.

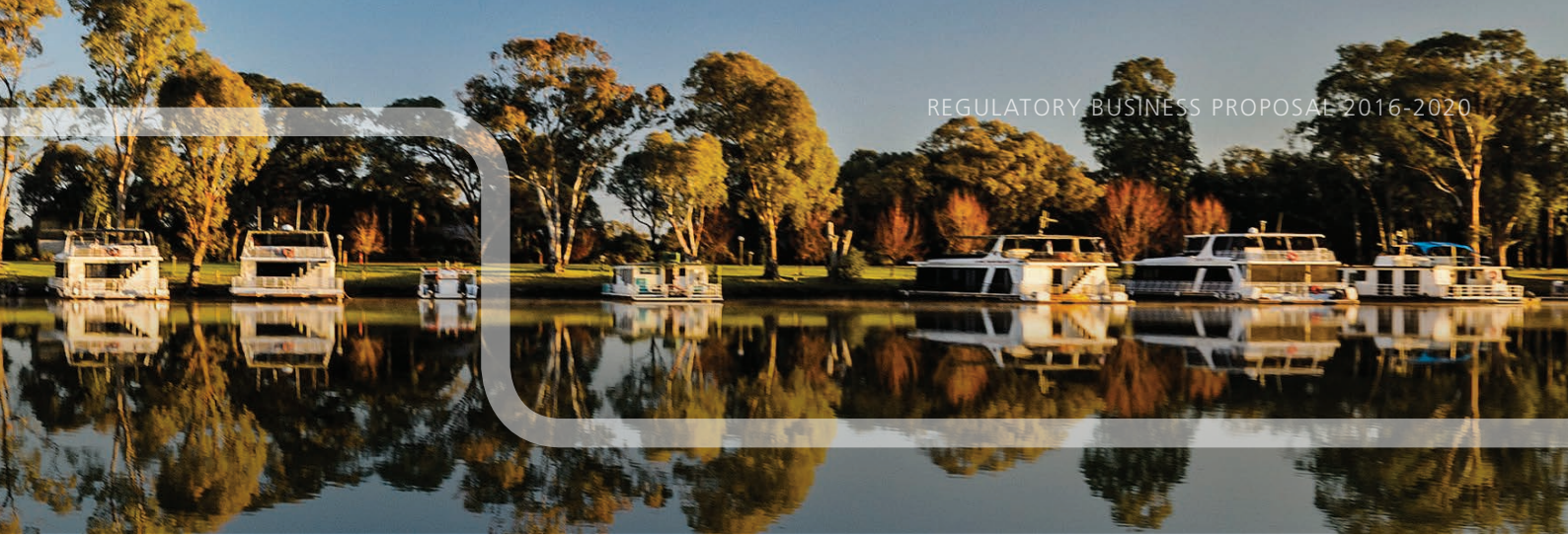
Since 1 January 2013 we have been regulated by the Essential Services Commission of South Australia (ESCOSA). In May 2013, ESCOSA made its first determination of water and sewerage services for the period 1 July 2013 to 30 June 2016. We are performing well against the allowances and requirements established in that determination. Our sound performance gives us a solid foundation as we head into the second regulatory period.

Regulatory business proposal 2016 (our proposal) summarises our plans for the second regulatory period from 1 July 2016 to 30 June 2020. It outlines the strategic direction we want to take, the expectations customers and stakeholders have of us, our commitment to the levels of service we will provide, the efficient expenditure and investment we will incur to deliver those services and the revenue we will require over the second regulatory period. Our proposal also models the impact on water and sewerage prices and customer bills over the second regulatory period.

In preparing our proposal we:

- Listened to customers to understand their needs and expectations
- Committed to keeping prices as low as possible to deliver the services customers value
- Reduced costs to ensure expenditure is efficient
- Planned investment in infrastructure to maintain service delivery at current levels and deliver long term benefits to customers through optimised investment decisions
- Planned for ongoing support of the South Australian community by providing reliable essential services, environmental protection, sustainable water management and water for future economic development.

ESCOSA will independently review the prudency and efficiency of the proposed expenditure and determine how much revenue we may recover from customers. This process – the second determination – will conclude when ESCOSA issues the Final Price Determination in May 2016. We will set our water and sewerage prices annually in accordance with the allowable revenues determined.



Our strategy for the second regulatory period

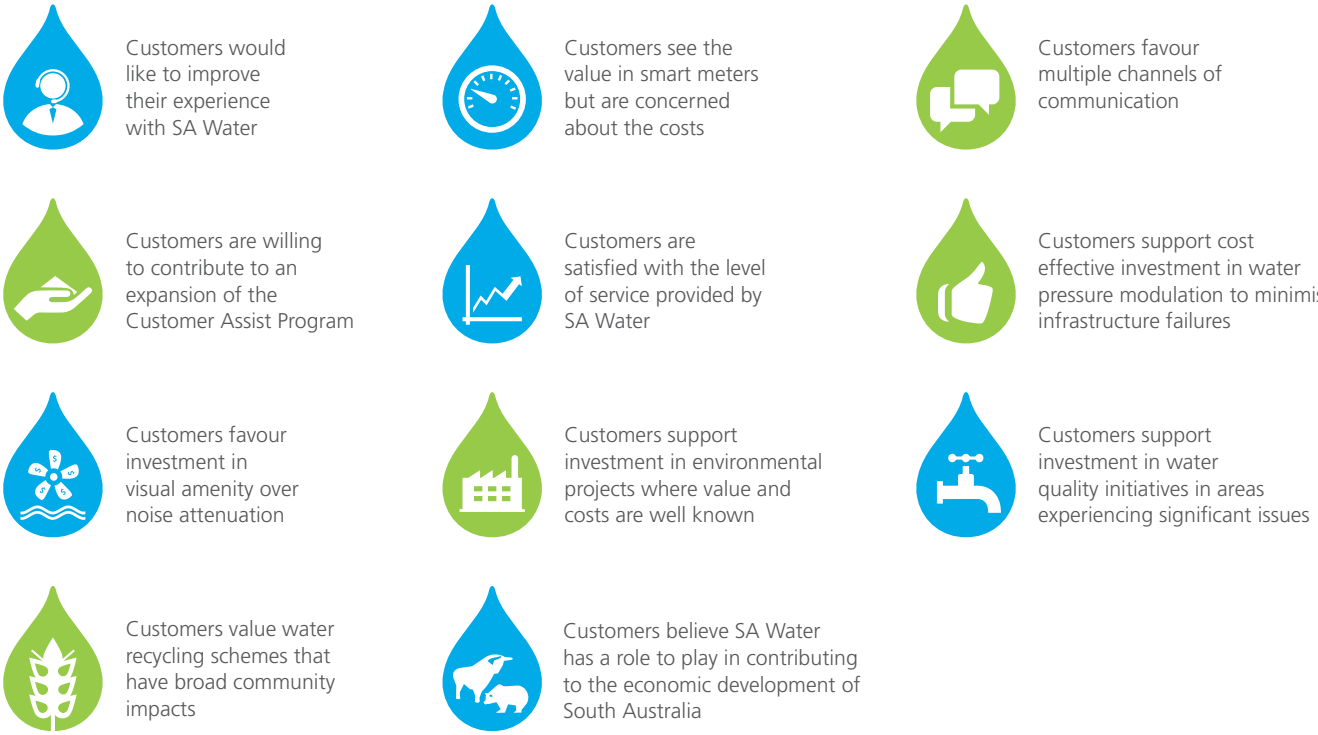
Our proposal summarises how we will achieve our strategic direction over the second regulatory period. The strategic direction we will take is more customer focused than ever before, with a clear alignment to 8 outcomes for success as shown in Figure A. Focusing on these outcomes will enable us to continue to play a major role in the growth, prosperity and liveability of South Australia.

Figure A Overview of our strategy 2016-2020, outcomes for success

We did not develop our strategic direction and the key outcomes for success in isolation. We based them on input from customers and stakeholders.

We undertook our most extensive customer engagement to date, Your Say, to understand what customers value about our services and where they want us to improve. Your Say provided invaluable customer insights as summarised in Figure B. The customer consultation reports are included as part of our proposal.

Figure B Your Say customer insights



We also proactively engaged with key stakeholders to understand their requirements of us over the second regulatory period. This approach means we can ensure we comply with technical standards and legal obligations, and protect the natural environment.

After developing our plans for the second regulatory period, we kept engaging with customers and stakeholders to ensure they supported the direction we propose to take. Customers and stakeholders broadly support our proposed direction over the second regulatory period.

What do we propose for the second regulatory period?

More affordable water and sewerage bills

Affordable water and sewerage prices are a priority, particularly in the current environment where customers are feeling the impact of rising household bills. We are committed to keeping price increases over the first and second regulatory periods below the rate of inflation.

We achieved our price commitment over the first regulatory period. We reduced water prices by 6.4% in 2013-14 and although we needed to increase sewerage charges by 1.6% in 2013-14 this increase was below the rate of inflation. Water prices and sewerage charges have only increased by the rate of inflation in each of the remaining years.

For the second regulatory period, we propose reductions of 0.7% in water prices and 9.0% in sewerage charges in 2016-17. These price reductions will be followed by inflation only increases in

each of the remaining 3 years. This meets our commitment to keep price increases below the rate of inflation over the second regulatory period.

For the average metropolitan residential customer (using 184 kilolitres per year and with a property value of $400,000) the 2016-17 price reductions would mean a $51 (3.9%) saving in the combined water and sewerage bill in 2016-17. The combined bill would only increase by inflation in each of the remaining 3 years of the second regulatory period.

The price and bill impacts provided in our proposal are indicative only, and will be subject to ESCOSA's second determination and actual rates of inflation.

Relevant to our affordability commitment, we will continue to support customers experiencing short or long term financial hardship. We propose to expand our existing Customer Assist Program to offer more services and support to customers in need. Customers indicated they supported an expanded Customer Assist Program as part of Your Say.

Prudent and efficient service delivery

We will continue to focus on keeping operating costs at their most efficient level, because lower costs means lower prices for customers.

We have already achieved significant reductions in operating costs over the first regulatory period, forecasting to save more than the operating efficiency targets ESCOSA set in its first determination as shown in Table A. Achieving these efficiencies, and achieving them early, has not been easy. These results were possible through transformational change involving restructuring our business, improving information technology (IT) systems, actively optimising our water supply mix, innovative energy sourcing methods and increased flexibility and resilience of the water supply network. These savings are good news for customer prices because we factored them into our base costs for the second regulatory period.

Table A Performance against operating efficiency targets (Dec 2014 real $'million)

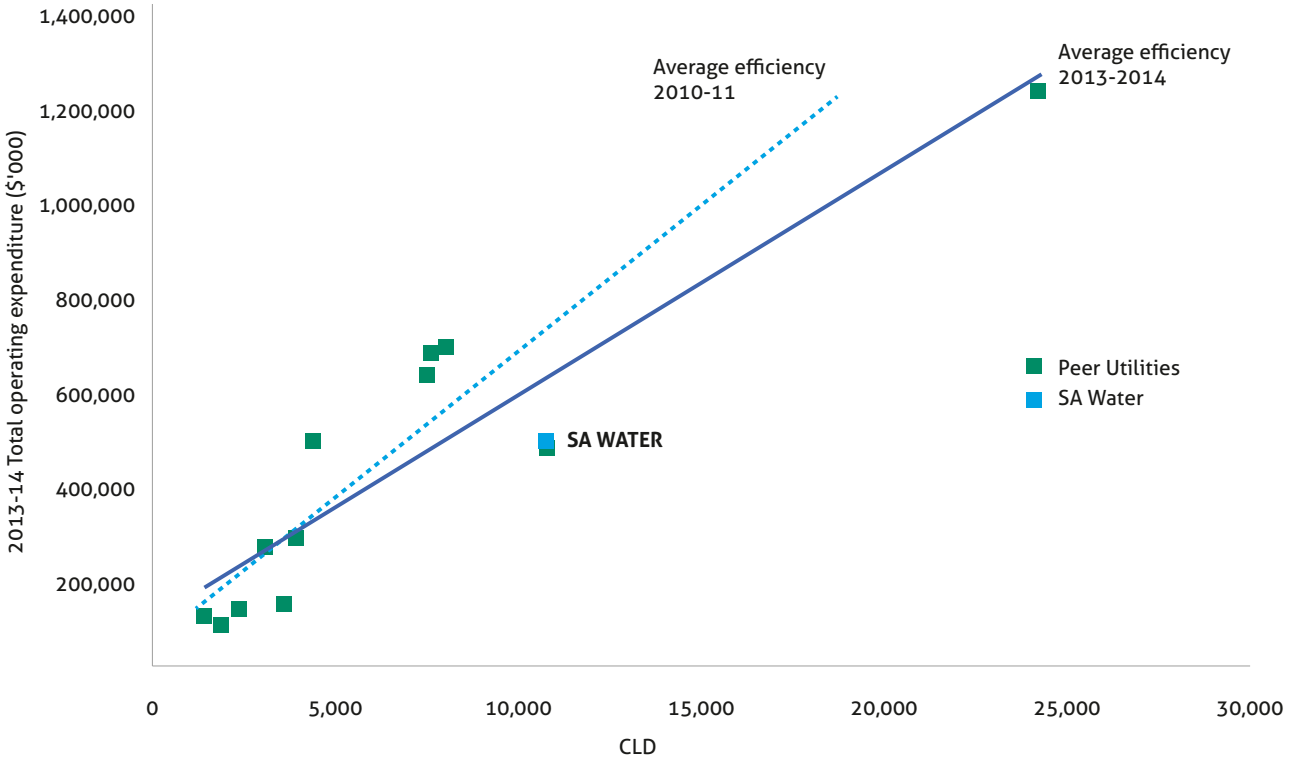
	2013-14		2014-15		2015-16*	
	Target	Achieved	Target	Forecast*	Target	Forecast*
Operating expenditure efficiency (cumulative %)	1.0%	12.5%	2.9%	14.7%	4.9%	11.4%
Operating expenditure efficiency (cumulative $'million)	$4.7	$55.2	$13.9	$65.1	$23.0	$50.6

*Actuals not available at time of submitting our proposal.

Benchmarking of our operating costs for 2013-14 against a peer group of Australian water utilities demonstrates our performance is amongst the most efficient for a combined water and sewerage service provider. This is despite being exposed to a number of unfavourable environmental conditions including a large geographic footprint, unfavourable topography and low rainfall. The benchmarking study also shows we improved our efficiency since a similar benchmarking study of 2010-11 operating costs.

Our comparative performance is shown in Figure C using a multi-dimensional analysis of combined water and sewerage operating costs for the peer utilities. This figure is based on 3 drivers of productivity – customers, length of main and demand (CLD). The figure shows we have established ourselves as one of the efficient utilities in Australia based on this measure.

Figure C Multi-dimensional analysis of 2013-14 combined water and sewerage operating costs*



*KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015, p. 3.

Building on this strong performance, we propose further efficiencies to operating costs over the second regulatory period of 1% per year (4% by 2019-20).

We also propose to operate the Adelaide Desalination Plant (ADP) in minimum production mode, rather than at zero production mode. This results in marginally lower operating costs to run the ADP than allowed in the first determination. This mode of operation is the most efficient and responsible way to maximise the life of the ADP for the long term, delivering operational resilience and water security for customers at the lowest long term cost. Having this additional water source available will also allow us to defer upgrades to other water infrastructure, a saving of around $5-$6 million of capital expenditure every year.

Despite our efficiency efforts, we face unavoidable operating expenditure increases arising from higher statutory obligations, cost escalation and network growth. In some cases, these increased costs are offset against savings. Adopting new technology is also increasing cost pressures for our business, but we will offset investment in this area with related savings in this and future regulatory periods. We forecast the total unavoidable increases in operating expenditure before savings to be $68.1 million over the 4 years of the second regulatory period.

Prudent and efficient investment

To keep prices as low as possible, we will invest only where and when we need to over the second regulatory period. We will also drive further efficiency across our capital delivery program.

Our capital expenditure approach over the first regulatory period demonstrates we were prepared to alter our plans when the underlying need has changed or where due diligence showed we can defer projects to achieve the same or better outcome. We also reprioritised capital investment to meet emerging business challenges. By doing so, we achieved capital expenditure savings of $176.7 million compared with the capital expenditure allowance of the first determination. This is good news for customer prices in the second regulatory period.

Our method for maintaining, upgrading and replacing assets continued to evolve in the first regulatory period. In particular, we revised the process that aligns proposed capital investment with an investment driver and beneficiary. We can more readily measure the impact of our capital investment on these beneficiaries and we better align with our strategic direction. We can now propose lower levels of capital expenditure for the second regulatory period while still providing the necessary infrastructure to manage risk and maintain levels of service to customers.

We propose to invest $1.27 billion of capital over the second regulatory period. This includes $675.4 million in water infrastructure, $479.7 million in sewerage infrastructure and $115 million in information technology infrastructure. The average annual investment we propose is 13.5% lower than the average annual capital allowance of the first determination. Given lower levels of investment, we will increase asset condition assessments to ensure critical infrastructure does not deteriorate to unacceptable levels.

For water and sewerage infrastructure, the investment driver and target level of performance for proposed capital investment is shown in Table B. Our proposal includes a commitment to reduce infrastructure capital delivery costs by 5% per year over the second regulatory period by using more mature project and program management approaches and improved procurement outcomes.

Table B Proposed capital expenditure (Dec 2014 real $'million)

Water capital investment			Sewerage capital investment		
Investment driver	**Target level of performance**	**Proposed capital**	**Investment driver**	**Target level of performance**	**Proposed capital**
Reliability for our customers	<1,900 properties with 3+ supply interruptions	394.9	Reliability for the environment and our customers	<217 internal overflows per year* 100% compliance with Department for Health and Ageing licence <77 sewer overflows type 1 and 2 reportable incidents per year by 2019-20	146.0
Quality for our customers	Compliance with Australian Drinking Water Guidelines (100% metropolitan, 99.8% country) Incidents per year: <2 priority type 1 <35 type 1 <60 type 2	137.1	Quality for the environment	100% compliance with EPA licence <450 odour complaints associated with sewerage networks	230.9
Safety for the community	Zero serious injuries to members of the community	90.6			
Safety for our workers	Serious Injury Frequency Rate <5 by 2020	44.5	Safety for our workers	Serious Injury Frequency Rate <5 by 2020	49.9
Financial outcomes for our customers/owner	Provide long term financial benefit	36.7	Financial outcomes for our customers/ owner	Provide long term financial benefit	77.7
Technical capital plan**		**703.8**	**Technical capital plan****		**504.5**
Less 5% delivery efficiency		-34.7	Less 5% delivery efficiency		-24.8
Capitalisation ADP reverse osmosis membranes		6.3			-
Efficient capital plan		**675.4**	**Efficient capital plan**		**479.7**

*Total planned investment necessary to deliver the desired outcomes prior to the application of stretch targets of efficiency.

The capital expenditure we propose includes investment of:

- $66.5 million to relocate the Murray Bridge Wastewater Treatment Plant (WWTP) to facilitate continued growth in the region, reduce odour issues for the community and ensure compliance with EPA licence conditions
- $54.8 million (in the second regulatory period) to upgrade Kangaroo Creek Dam to ensure compliance with industry safety standards
- $24.6 million to increase capacity of the Bolivar WWTP to support growth in the greater metropolitan area
- $15.7 million to improve sludge infrastructure at the Port Lincoln WWTP to support growth in the region and ensure ongoing compliance with EPA licence conditions
- $15.0 million to improve the reliability of the water supply for customers at Warooka and Point Turton by changing supply from bore fields to the River Murray system
- $14.3 million to increase the capacity of the Aldinga WWTP to support growth in the southern metropolitan region
- $12.6 million to improve water quality aesthetics and reduce salinity for customers at Orroroo

- $11.1 million to supply safe and reliable drinking water to the Mount Barker residential development to facilitate growth in the Mount Barker area
- $10.3 million to refurbish a large tank ensuring customers continue to receive a reliable water supply from Hope Valley.

In addition to these larger projects, we will continue to invest in asset programs to maintain levels of service for water and sewerage customers.

For our water service, the largest investment driver is ensuring the reliability of water services to benefit customers. As well as maintaining the ongoing water main replacement programs, we propose increased investment in renewing large storage tanks to prevent structural failures that would otherwise interrupt water supplies. We will prioritise these projects on the age and condition of water mains and network structures.

For our sewerage service, we propose increased investment to benefit the environment through the reliability of sewerage infrastructure. This investment will reduce the number of sewerage main breaks and chokes, thereby minimising environmental incidents.

In addition to infrastructure investment, we propose to invest $115 million in IT over the second regulatory period. This investment will maintain the asset lifecycle of existing technology, improve our customers' experience and future proof our technology platform. Importantly, the proposed IT investment includes $32.5 million of technology enabled initiatives to help achieve efficiencies of $11.4 million per year by 2019-20.

Continue to provide high levels of service to customers

We met 65 of 66 service standards in 2013-14 and expect to achieve high levels of service for the remainder of the first regulatory period. Through Your Say, customers told us they were satisfied with our performance in this area. We will continue to deliver the high levels of service expected by customers and continue to meet our legal and regulatory obligations.

We propose a refined hierarchy of service standards to make it easier for customers to monitor our performance. Specifically, we propose to reduce the number of reportable service standards from 66 to 18 key measures, while maintaining the same performance oversight.

Improved customer experience

While customers are satisfied with the overall levels of service we provide, they would like improvements in their service experience. They want us to improve how we interact and communicate with them.

We will lay the foundation in the second regulatory period for an improved customer service experience. As part of our proposed IT investment, we will invest $10.2 million in our digital strategy which will:

- Enhance self-service and payment platforms for customers
- Create more channels for customers to interact with us
- Enhance customer enquiry handling
- Improve how we communicate service issues
- Form better customer relationships
- Improve information management and digital customer research.

Why is our proposal prudent and efficient?

We consider our proposal for the second regulatory period to be prudent and efficient because it:

- Builds on strong performance in the first regulatory period particularly the efficiencies we achieved, which we incorporated into the costs of providing water and sewerage services
- Responds to customer expectations both by maintaining service levels but delivering them more efficiently and by investing in areas customers told us they value
- Ensures ongoing compliance with stakeholder requirements and statutory obligations including new requirements
- Captures the benefits of our enhanced approach to asset management which enables more informed and prudent investment decisions
- Proposes stretch efficiency targets for capital investment and for operating costs, which means we will continue to operate at a higher performance level than the average of peer utilities
- Provides price reductions to customers in the second regulatory period and provides the price reductions as early as possible during the period.

Summary of regulatory proposals

Allowable revenue

ESCOSA will determine the annual building block allowances and annual allowable revenues we may earn over the second regulatory period. The proposed annual building blocks and annual allowable revenues for direct control water and sewerage services are set out in Table C.

Table C Proposed water and sewerage building blocks (Dec 2014 real $'million)*

	Water				Sewerage			
	2016-17	2017-18	2018-19	2019-20	2016-17	2017-18	2018-19	2019-20
Return on asset**	344.8	345.6	346.2	345.5	160.2	161.2	163.1	165.0
Working capital***	1.5	1.5	1.5	1.5	0.6	0.6	0.6	0.6
Operating expenditure	327.6	328.6	326.6	324.4	131.1	131.3	131.1	129.8
Depreciation***	174.7	177.7	180.8	184.3	93.6	96.7	100.2	103.5
Tax*****	5.4	5.6	6.1	6.5	–	–	–	–
Community service obligations	-72.7	-71.1	-69.6	-68.2	-49.8	-48.9	-48.1	-47.4
Recycled water revenue	–	–	–	–	-3.9	-5.1	-6.4	-6.7
Total allowable revenue	**781.3**	**787.9**	**791.6**	**794.0**	**331.8**	**335.8**	**340.5**	**344.8**
Smoothed allowable revenue****	**778.5**	**785.1**	**792.2**	**799.7**	**332.2**	**336.1**	**340.2**	**344.3**

*Building blocks and allowable revenues are summarised outputs from ESCOSA's revenue model. KPMG independently examined the revenue model and did not identify any issues which would have a material impact on the results.
**Calculated on mid year asset values.
***Discounted to mid year values.
****Calculated as a net present value. Smoothed prices rather than revenues which means the smoothed allowable revenue increases slightly each year in line with growth in demand and customer numbers.
*****Changes in the cost of debt and lower revenue results in an income tax liability of zero for the second regulatory period for our sewerage service.

The average allowable revenues we propose for the second regulatory period are less than the average allowable revenues of the first determination. Lower allowable revenues will help keep water and sewerage prices, and hence customer bills, lower. This is good news for customers who told us affordability across household bills is an issue.

The allowable revenue reduction reflects the benefits of our ongoing drive for efficiency, ESCOSA's new method for calculating the regulatory rate of return and the favourable impact of financial markets on the regulatory rate of return.

We broadly support ESCOSA's new method for calculating the regulatory rate of return because it provides improved price stability for customers and better reflects our actual financing costs. In adopting the new method we:

- Assumed immediate transition to the 10 year average trailing cost of debt
- Used a forward estimate for the cost of debt over the second regulatory period to avoid price instability for customers rather than annual adjustments for the cost of debt
- Used observable market inputs at April 2015.

On this basis, we adopted a regulatory rate of return of 4.20% (post-tax real) which is lower than the regulatory rate of return of 4.50% calculated for the first determination. A lower regulatory rate of return helps to keep prices lower for customers.

For the second regulatory period, we propose a revenue adjustment mechanism to calculate and bank annual variations in revenue compared with the allowable revenue. Where the variation is greater

than 1%, we propose to adjust 50% of the variation against allowable revenue in the third determination. This approach promotes price stability and certainty over the second regulatory period and ensures we share equally the forecasting risk/benefit with customers.

Indicative prices and bills

We cannot set exact prices and bills at this time because prices are set annually to earn the allowable revenue determined by ESCOSA and to account for the latest inflation figures. The indicative price changes for water and sewerage customers over the first and second regulatory periods are shown in Table D. We expect water and sewerage prices to decrease by 0.7% and 9.0% respectively in 2016-17, then increase by inflation in each of the remaining 3 years of the second regulatory period.

Table D Water and sewerage pricing movements (nominal $)

	First regulatory period			Second regulatory period					Total change (across both regulatory periods)
Change (%)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total	
Water Price	-6.4%	2.9%*	1.3%*	-0.7%	2.5%**	2.5%**	2.5%**	6.9%	4.3%
Sewerage Price	1.6%	2.9%*	1.3%*	-9.0%	2.5%**	2.5%**	2.5%**	-2.0%	3.8%

*Inflation only increase.
**Inflation only increase using an inflation assumption of 2.5% per year.

Bill impacts vary across customer groups and from customer to customer depending on water use and property value. The indicative bill impacts for a range of water and sewerage customers are shown in Table E and Table F.

Table E Indicative water bills (nominal $)

Type of customer	2015-2016	2016-17	2017-18	2018-19	2019-20
Residential bills					
Low water use – 120 kL per year	568	564	578	593	608
Average water use – 184 kL per year	783	778	797	817	838
High water use – 340 kL per year	1,308	1,299	1,331	1,365	1,400
Non-residential bills					
Low water use – 60 kL per year	488	485	497	509	522
Average water use – 1,900 kL per year	6,670	6,630	6,790	6,968	7,146
High water use – 7,000 kL per year	23,806	23,664	24,232	24,869	25,506
Commercial bills*					
Low water use/property value – 30 kL per year/$250,000	387	385	394	404	414
Average water use/property value – 400 kL per year/$1,200,000	2,210	2,196	2,250	2,308	2,366
High water use/property value – 1,300 kL per year/$3,600,000	6,967	6,923	7,092	7,274	7,459

*Based on 2014-15 property values. Actual property rate charges may vary on account of movements in property values. The Valuer-General finalises property values for the following financial year in June of each year.

Table F Indicative sewerage bills (nominal $)*

Type of customer	2015-16	2016-17	2017-18	2018-19	2019-20
Residential bills					
Minimum charge	356	324	332	340	349
$400,000 property value (metropolitan Adelaide)	515	469	480	492	505
$250,000 property value (country SA)	433	396	408	420	433
Non-residential bills					
Low property value ($170,000)	356	324	332	340	349
Average property value ($1,400,000)	2,018	1,836	1,882	1,929	1,978
High property value ($4,500,000)	6,487	5,903	6,051	6,202	6,357
Commercial bills					
Low property value ($250,000)	360	328	336	345	353
Average property value ($1,200,000)	1,730	1,574	1,613	1,654	1,695
High property value ($3,600,000)	5,189	4,722	4,840	4,961	5,085

*Based on 2014-15 property values. Actual property rate charges may vary on account of movements in property values. The Valuer-General finalises property values for the following financial year in June of each year.

Value for money

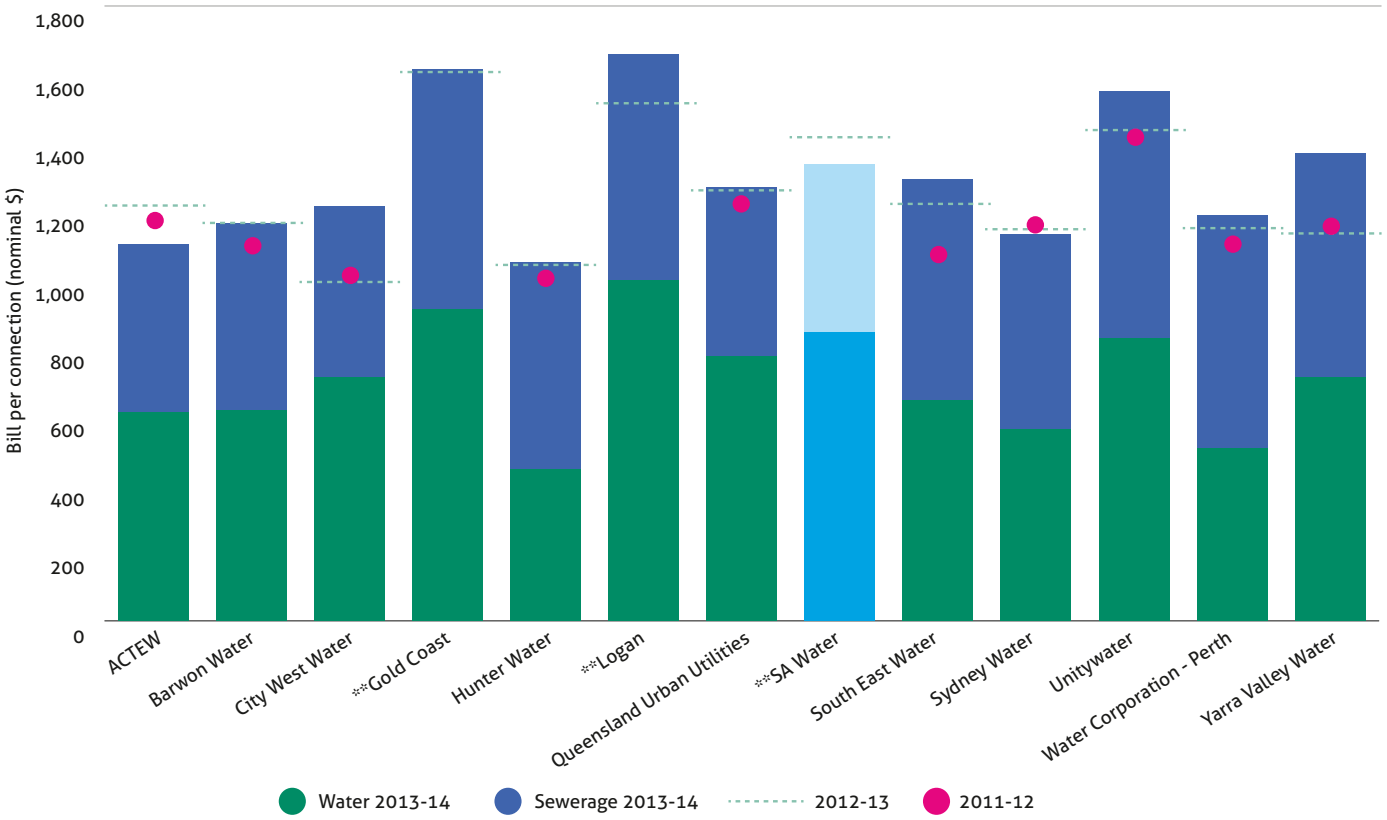
How our bills compare with bills in other jurisdictions

In South Australia, the total combined water and sewerage bill increased significantly from 2008-09 to 2012-13. The increase was due to investments we made in necessary water security measures to respond to unprecedented drought conditions.

The annual combined water and sewerage bill for the peer group of water utilities is shown in Figure D. We are 1 of only 2 utilities to significantly reduce combined water and sewerage bills between 2012-13 and 2013-14. This result reflects our strong drive for efficiency in the first regulatory period. The average combined bill is now in the mid-range of the peer group.

By driving efficiencies throughout our business we are proposing to reduce the combined water and sewerage bill by $51 for the average residential customer. This follows a $43 reduction to water and sewerage bills in the first regulatory period and shows we are committed to reducing our costs for our customers.

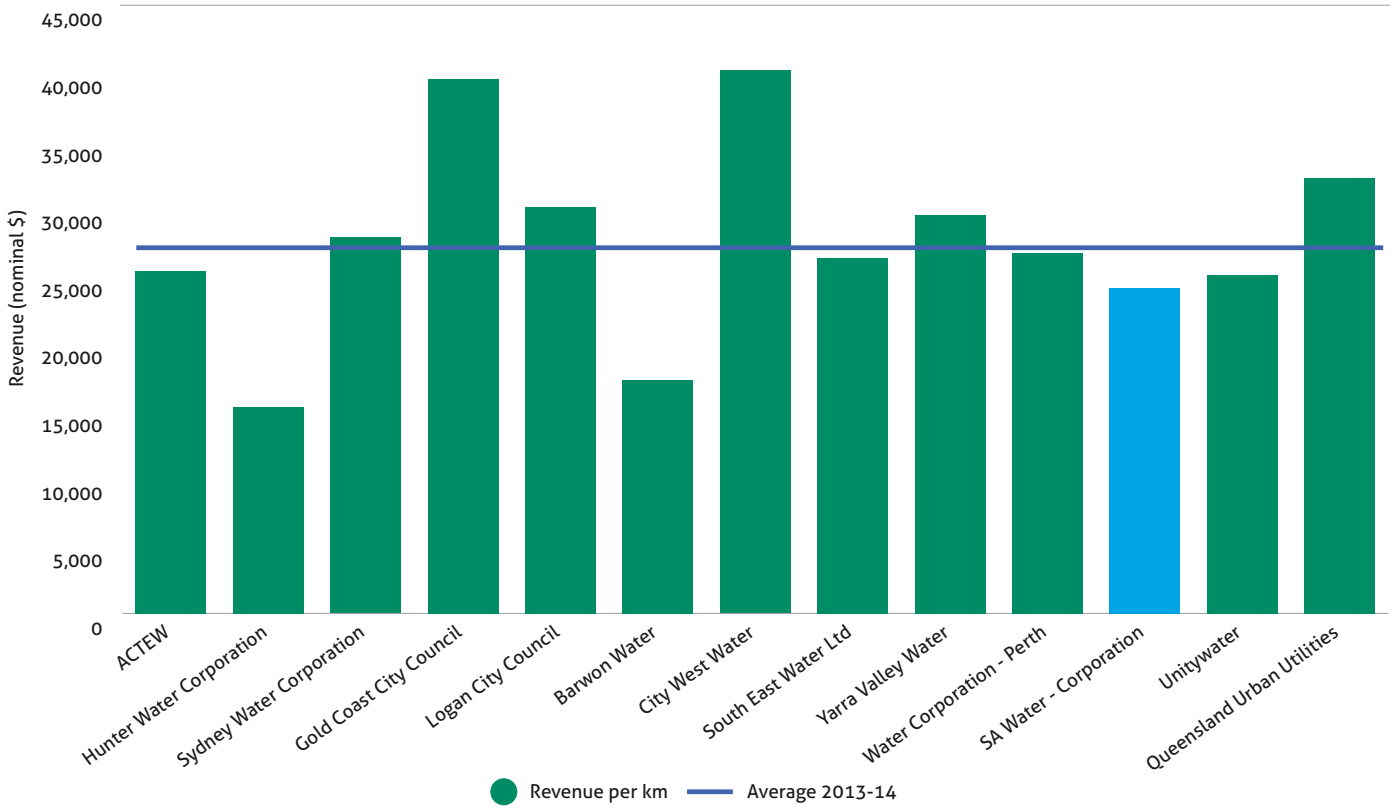
Figure D Annual water and sewerage bill for 200 kL, 2011-12 to 2013-14*



*SA Water data based on consumption of 200 kL per year and the average property value. Not all utilities in the peer group base their sewerage charges on property values.
Source: Bureau of Meteorology 2014, *2013-14 National performance report*.
**Did not report against the indicator for 2011-12.

Utilities with more connections tend to have lower prices and customer bills as costs are recovered from a wider customer base. Utilities with a smaller geographic spread also tend to have lower prices and customer bills as smaller lengths of pipes are required, thereby reducing the capital and operating cost to service customers. Even though our combined water and sewerage bill is within the mid-range of the peer group, our revenue per kilometre of main is below the average of the peer group (Figure E).

Figure E Revenue per kilometre of main – combined water and sewerage, 2013-14*

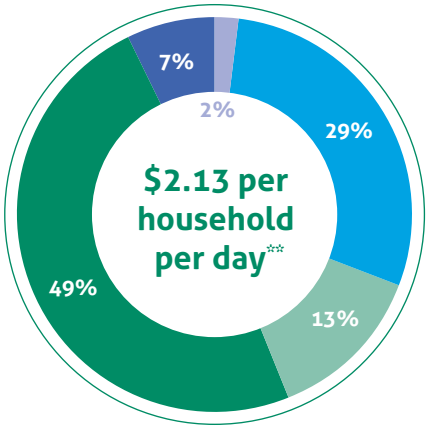


*Source: Bureau of Meteorology 2014, *2013-14 National performance report*.

What customers receive for their bills

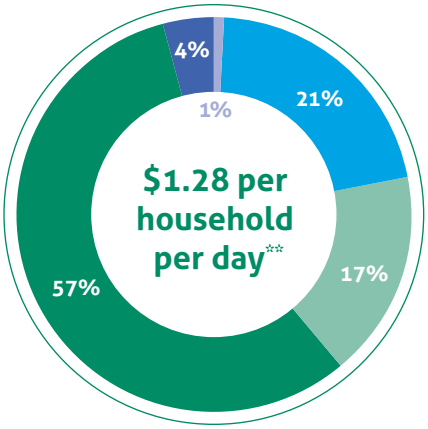
Our proposals represent value for money for customers. We invest the majority of the money we receive from customers directly into providing water and sewerage services (Figure F and Figure G respectively). The government receives only marginal returns.

Figure F What customers are paying for – water*



*Based on 2016-17 bills and allowable revenue.
**Based on average residential customer using 184 kL of water per year (nominal $).
***Net return to owner is net of Community Service Obligation payments from the South Australian government
****Tax is based on accounting values and paid to the South Australian Government as a tax equivalent.

Figure G What customers are paying for – sewerage*



*Based on 2016-17 bills and allowable revenue.
**Based on average metropolitan residential customer with a property valued at $400,000 (nominal $).
***Net return to owner is net of Community Service Obligation payments from the South Australian government.
****Tax is based on accounting values and paid to the South Australian Government as a tax equivalent.
*****Operate network is net of recycled water revenue.

We invest the majority of the money we receive from customers directly into providing water and sewerage services.

Summary

We listened to our customers and stakeholders, and incorporated their views wherever possible into our proposal. Our proposal will deliver:

- The lowest possible prices for customers
- Prudent and efficient investment in infrastructure to maintain current levels of service and to optimise the lifecycle of assets
- Prudent and efficient operating costs, as we have been benchmarked as one of the most efficient water and sewerage providers
- An improved customer experience.

Despite benchmarking favourably against our peers, we also propose ongoing efficiency targets for both operating expenditure (1% per year) and capital expenditure (5%). Lower costs help achieve lower prices for customers.

Our proposal results in a 0.7% decrease to water prices in 2016-17 and a 9.0% decrease to sewerage prices in 2016-17. These price decreases will be followed by inflation only increases for the remaining 3 years of the second regulatory period.

We achieved these prices through sound performance in the first regulatory period, ongoing efficiencies and robust methods for determining the additional levels of expenditure required to maintain current service levels for the second regulatory period.

Our proposal is the first step of ESCOSA's second determination process. ESCOSA will review our proposal and additional supporting information to make recommendations in its Draft Determination. Customers will have the opportunity to comment on the Draft Determination as part of ESCOSA's public consultation process. We will support ESCOSA throughout this process.

Chapter 1
Introduction

As a regulated water and sewerage service supplier in South Australia, we are required to submit a periodic proposal to ESCOSA on:

- The levels of service we will deliver to customers
- Our required investment to deliver those services over the regulatory period.

This is our proposal for the second regulatory period from 1 July 2016 to 30 June 2020. ESCOSA will review the prudency and efficiency of our proposed expenditure and determine how much revenue we may recover from our customers.

1.1 Our business

As the largest supplier of water and sewerage services in South Australia, we manage all aspects of delivering water and sewerage services to our customers – from the natural water source to treatment and delivery, and from collecting waste to its treatment and disposal. We do this across an expansive network of pipes, pump stations, treatment plants and other essential infrastructure for a diverse range of customers. This operating environment presents many challenges.

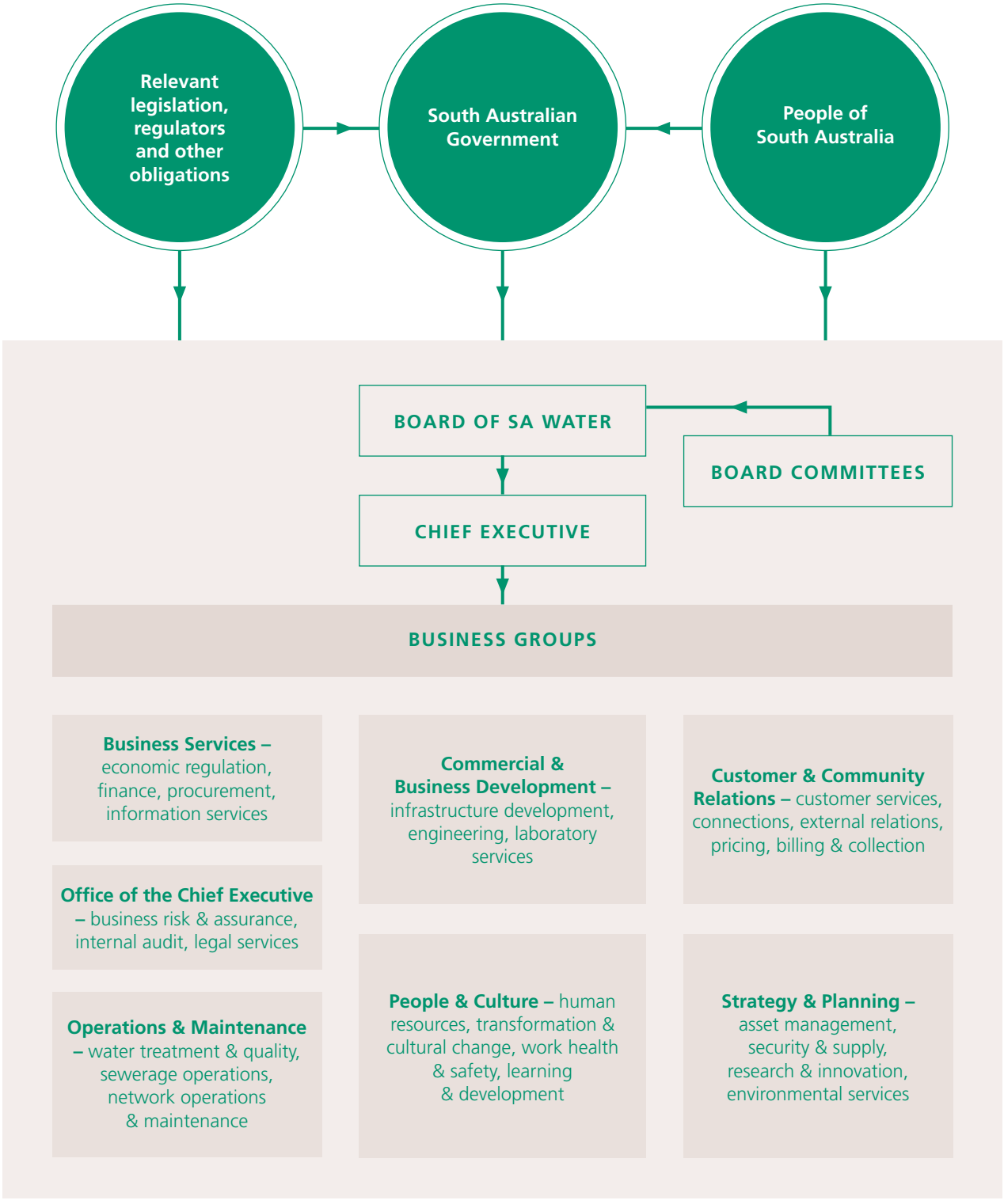
We are committed to meeting these challenges to deliver safe, sustainable and affordable water and sewerage services to our customers. The proposal explains more about our operational opportunities and challenges and how we intend to tackle them while meeting the requirements of our customers, stakeholders and regulatory framework.

1.1.1 Our governance and structure

We are wholly owned by the South Australian Government, and the Minister for Water and the River Murray appoints our Board of Directors (see Figure 1.1). The Board sets strategic direction and monitors how our business performs in relation to legislative requirements and customer and stakeholder expectations.

We are committed to meeting all challenges to deliver safe, sustainable and affordable water and sewerage services to our customers.

Figure 1.1 Our governance, organisation and reporting structure



1.2 Our regulatory framework

Our business operates within a regulatory framework of over 150 pieces of legislation. This framework includes economic regulation of our water and sewerage services. Under the *Water Industry Act 2012* and the *Essential Services Commission Act 2002*, ESCOSA determines the maximum allowable revenue we can earn from the sale and supply of drinking water and sewerage services. Also under those Acts, ESCOSA monitors our performance and our compliance against prescribed service standards, code requirements and allowable revenue.

In May 2013 ESCOSA determined the maximum allowable revenue we could earn in the first regulatory period. We used that maximum allowable revenue to set 2013-14, 2014-15 and 2015-16 prices. In November 2014 ESCOSA commenced the same process for the second regulatory period, by releasing its Framework and Approach for its second determination. The Framework and Approach sets out the requirements for our proposal and the framework for ESCOSA's second determination.

The Framework and Approach refers to the Treasurer's responsibility to set parameters for the second determination through pricing orders. The Treasurer released pricing orders on 2 September 2014 (Third Pricing Order) and 18 November 2014 (Fourth Pricing Order). These pricing orders are available on the ESCOSA and Department of Treasury and Finance websites and supplement, rather than replace, pricing orders issued by the Treasurer for the first regulatory period.

The Framework and Approach also refers to the Minister's ability to direct us under section 6 of the Public Corporations Act 1993 to do certain things for the greater good of South Australia. The Minister issued a section 6 Ministerial Direction on 25 June 2015 as gazetted on 2 July 2015.

1.3 Our proposal

Our proposal sets out expenditure requirements for the second regulatory period on the basis that we:

- Listened to our customers to understand their needs and expectations
- Committed to keeping prices as low as possible to deliver the services valued by our customers
- Reduced costs and will continue to reduce costs to ensure expenditure is efficient
- Planned for ongoing investment in infrastructure to deliver long term benefits to our customers
- Planned for ongoing support of the South Australian community providing reliable services, environmental protection, sustainable water management and water for future economic development.

In addition to these considerations, our proposal meets the requirements of ESCOSA's Framework and Approach, the Treasurer's pricing orders and the section 6 Ministerial Direction.

The expenditure we propose is for our direct control drinking water and sewerage services, not for excluded services or non-regulated services. Direct control services are our core drinking water and sewerage services, defined by the Water Industry Act as 'retail services'. Excluded services are services that we provide to individuals or small classes of customers. These services are funded by the customers who benefit from them, not by the wider customer base. ESCOSA uses alternative mechanisms to monitor how we charge customers for these services, and for this reason they are not included in our proposal. Non-regulated services are services that the Water Industry Act does not define as a retail service. ESCOSA does not regulate these services, so our proposal does not include them.

The tables on the next page show the service classifications we have based our proposal on (Table 1.1) and where key information can be found in our proposal (Table 1.2).

The figures contained in this proposal may be subject to rounding. Unless otherwise noted, dollar amounts are December 2014 real (unescalated) dollars.

Table 1.1 Regulated and non-regulated services

Regulated (direct control services)	Excluded services	Non-regulated services
Sale and supply of drinking water	Standard and non-standard connection services (includes developer charges)	Laboratory services that are not retail services
Sale and supply of sewerage services	Miscellaneous minor services	Project management services and consultancy services that are not retail services
	Annual sewerage and recycled water audit services	Water transportation services provided to third parties
	Easement extinguishment services	Operation and maintenance of the River Murray lock system and Salt Interception Schemes
	Network analysis services	Soil and sand testing services
		Emergency functional services
		Metropolitan floodwaters drainage administration

Table 1.2 Where to find regulatory proposal information

Information	Where it can be found
• Engaging with customers to understand their needs • What our other stakeholders need from us • An overview of our strategy	Chapter 2 Our future direction
• Our service standards proposal for the second regulatory period	Chapter 3 Our commitment to service
• Our proposal on the appropriate financing costs and return on our investments for the second regulatory period	Chapter 4 Regulatory rate of return
Our water service	
• What water infrastructure we need to invest in to meet our customers' needs and how much this will cost	Chapter 5 Investment in our infrastructure
• How much it will cost us to operate our water infrastructure and provide water services to customers	Chapter 6 Operating expenditure
• How much revenue we need to deliver the service levels required by our customers	Chapter 7 Required revenue
• The indicative impact of our revenue requirement on water prices	Chapter 8 Customer impacts and price benchmarking
Our sewerage service	
• What sewerage infrastructure we need to invest in to meet our customers' needs and how much this will cost	Chapter 9 Investment in our infrastructure
• How much it will cost us to operate our sewerage infrastructure and provide sewerage services to customers	Chapter 10 Operating expenditure
• How much revenue we need to deliver the service levels required by our customers	Chapter 11 Required revenue
• The indicative impact of our revenue requirement on sewerage prices	Chapter 12 Customer impacts and price benchmarking
• How much we need to invest in supporting technology infrastructure to provide our services to customers	Chapter 13 Investment in technology
• Why our plan is appropriate and timely for our customers and our business	Chapter 14 Long term viability
• Next steps in second determination process	Chapter 15 Next steps

Chapter 2
Our future direction

KEY POINTS

We have engaged with our customers and key stakeholders to understand their needs and expectations for the second regulatory period. Our customer engagement program, Your Say, was the most extensive customer consultation program we have undertaken. ESCOSA was involved to ensure reasonable confidence in the results. Its findings informed our strategic direction and our expenditure proposals.

Our Overview of Strategy 2016-20 outlines our strategic direction to respond to the key challenges and embrace the opportunities of the second regulatory period. Our strategic direction focuses more than ever on our customers and meeting their expectations. Our research indicates that the majority of customers and stakeholders support our direction and priorities.

Affordability is a key concern for our customers. We will focus on delivering services more efficiently over the second regulatory period so we can keep water and sewerage prices as low as possible. We will also enhance our support for customers experiencing financial hardship.

Customers are satisfied with their levels of service but seek an improved customer experience. We will work towards this result by improving our communication with customers and providing additional ways for customers to engage and interact with us.

Over the second regulatory period, we will focus on our resilience to respond to future events, including the impacts of climate change. Being a resilient business means we can continue to provide our products and services to future generations.

As the major water and sewerage service retailer in South Australia, we deliver safe, sustainable and reliable water services for the community. The challenges for our business vary over time, but a clear strategic direction means we are well placed to adapt to meet the challenges.

2.1 Our strategy

2.1.1 Overview of Strategy 2016-20

The *Overview of Strategy 2016-20*, included as attachment A, outlines our strategic direction for the second regulatory period. It shows how we intend to respond to the challenges our business will face and how we will embrace possible opportunities.

Our strategic direction is more customer focused than ever before. We have identified 8 key outcome areas for the second regulatory period as shown in Figure 2.1. These 'outcomes for success' are based on the clear expectations of our customers and stakeholders. They will be our areas of focus as we continue to play a major role in the growth, prosperity and liveability of South Australia. We provide more detail about the direction we will take for each outcome for success over the second regulatory period in sections 2.2.1 to 2.2.8.

We recognise being a successful water utility means we must consider our customers and stakeholders at every step of operating our business. In addition to the outcomes for success we have 4 key performance outcomes, each with underpinning targets to drive our performance:

- Ensure safety in the workforce
- Achieve customer satisfaction
- Demonstrate regulatory compliance
- Improve financial outcomes for our customers/owner.

Figure 2.1 Outcomes for success

The way we deliver on these is supported by our corporate values which are:

- Put safety above all else
- Act in the best interests of customers and the community
- Seek and apply better ways
- Respect our people
- Be trustworthy.

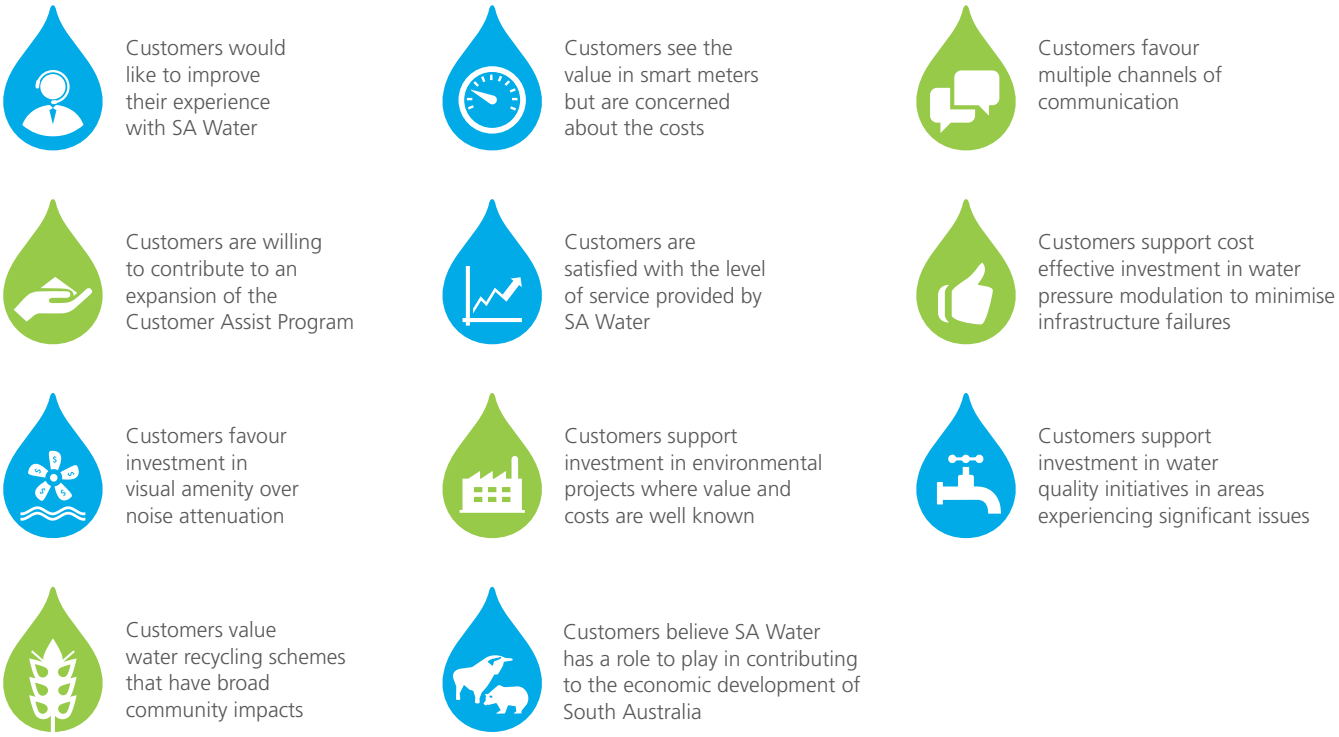
2.1.2 Our approach to developing our strategic direction

To develop our strategic direction and the outcomes for success, we undertook an extensive customer engagement program, Your Say, and a robust stakeholder engagement process. These processes helped us to understand the needs and expectations of our customers and the future compliance obligations of our stakeholders. Both processes were significantly broader than those we adopted to develop our strategic direction for the first regulatory period.

Your Say was a 5 stage process. At each stage we narrowed down the issues which were most important to our customers and how much they were willing to pay for improvements.

The key customer insights from Stage 3 of Your Say are summarised in Figure 2.2. Importantly, these insights provide the context for many of our proposals across this document. Full details of the customer engagement process and the results are contained in attachment B. We also consulted with our customer advisory groups, which comprise customer representative groups, and we have an ongoing customer research program to measure and track customer satisfaction.

Figure 2.2 Customer insights from stage 3 of Your Say



Approximately 39% of our proposed capital expenditure for water services and 55% of our proposed capital expenditure for sewerage services over the second regulatory period are to meet obligations set by our industry regulators, as shown in Figure 2.3 and Figure 2.4 respectively. Our consultation with stakeholders focused on these industry regulators to understand and negotiate future compliance obligations so we can minimise the pricing impacts for customers while still meeting the stakeholders' requirements. Our key industry regulators and their role for water and sewerage services are listed in Table 2.1. We also consulted with a broad range of customer representative organisations to understand their needs and expectations over the second regulatory period.

Figure 2.3 Water capital expenditure by driver 2016-20

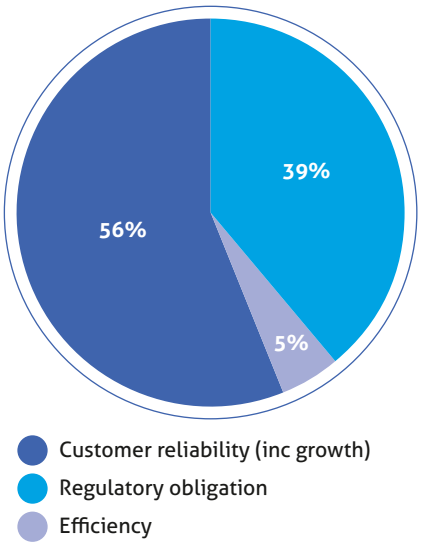


Figure 2.4 Sewerage capital expenditure by driver 2016-20

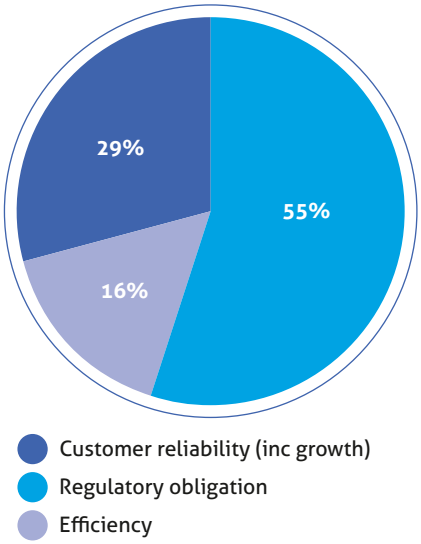


Table 2.1 Our key industry regulators

Stakeholders	Role for water and sewerage services
Australian National Committee on Large Dams Incorporated	Develop and regulate dam safety guidelines
Department of Environment, Water and Natural Resources	License the extraction of source water such as Mount Lofty Ranges catchments, groundwater sources and the River Murray
Department for Health and Ageing	Set the requirements for drinking water quality
Environment Protection Authority (EPA)	License activities of environmental significance, such as the operation of wastewater treatment plants (WWTPs)
ESCOSA	Undertake economic regulation of water and sewerage services in South Australia, including licensing, consumer protection and retail pricing
Office of the Technical Regulator	Monitor technical standards for water and sewerage infrastructure
Safework SA	Regulate work health and safety

As well as better understanding expectations, we also considered the challenges and opportunities arising from our external environment and financial constraints when developing our strategic direction. We also applied our risk management approach to shape our strategic direction for the second regulatory period.

2.2 Outcomes for success

Sections 2.2.1 to 2.2.8 provide detail on the direction we will take for each outcome for success over the second regulatory period.

2.2.1 Safe, clean water

We proudly deliver a reliable supply of safe drinking water to our customers and minimise the health and environmental impacts of our sewerage service. Over the second regulatory period we will maintain and, when economic, enhance the quality of our services.

We recognise that the regulatory requirements (economic, environmental, technical, health and water licensing) applying to our business will continue to evolve in the future. We will invest where necessary to ensure ongoing compliance with all regulatory requirements in the second regulatory period.

Some customers in regional areas experience high levels of salinity in their drinking water due to high salt content in the underground aquifer systems and the River Murray. In Your Say, customers told us they support investment in water quality initiatives in areas experiencing significant issues. Customers from both regional and metropolitan areas supported investment in regional water quality solutions at an additional cost of $1.30 per year (68% customer support). As a first step, we propose to invest in infrastructure to improve water quality for customers in Orroroo.

2.2.2 Reliable services

Our business is infrastructure intensive and heavily reliant on long life assets. Our asset management approach balances short and long term planning horizons to meet the multiple objectives of optimising asset lifecycle costs, maintaining levels of service to customers and appropriately managing risk. We must ensure the reliability of our assets, maintain the quality of supply and ensure our network capability caters for growing demand.

In Your Say, customers told us they:

- Care about the reliability of their water and sewerage service
- Were satisfied with the level of service received at the time of customer engagement (77% customer support)
- Do not wish to pay more for a higher level of service or less for a lower level of service
- Value timely investment in pipes and local infrastructure to minimise the costly repair of failures
- Are keen for us to reduce bursts and water loss from our network and they support installation of additional pressure reducing valves to modulate water pressure in the network at a cost of $1.30 per year on a typical bill.

We are also mindful of our obligations under the Australian National Committee on Large Dams Incorporated safety guidelines, which mean we need to invest to reduce safety risks associated with our major dams.

To ensure we provide reliable services over the second regulatory period, and given the above, our approach to developing our proposals has been to:

- Challenge the level of capital investment required to deliver the services our customers value
- Improve our levels of service only when customer or stakeholder expectations increase and when the improvement will have a clear net benefit to the customer
- Invest where necessary to ensure compliance with our legal and regulatory obligations
- Invest where customers indicated a willingness to pay
- Allow for continuous improvement of our asset management process to optimise the timing of refurbishments and replacements
- Closely monitor asset performance to ensure reduced levels of expenditure do not result in future asset risk.

2.2.3 Healthy environment

We work hard to minimise the impact of our services on the environment and to comply with our environmental regulatory requirements. We recognise the environmental regulatory requirements applying to our business will continue to evolve.

As part of Your Say, customers told us they value initiatives which conserve or re-use water. They value water recycling initiatives that focus on supplying non-drinking water for amenity (91% customer support) and agricultural purposes (90% customer support). We already have multiple water recycling systems around the state including Christies Beach, Aldinga, Bolivar and Glenelg WWTPs. Around 30% of our sewage water is recycled – the second highest percentage of sewage recycling of all water utilities in Australia. We will continue to support these recycling schemes over the second regulatory period.

We will also invest where necessary to ensure ongoing compliance with all of our environmental regulatory requirements in the second regulatory period. This will see us invest in:

- WWTP upgrades to minimise environmental incidents
- Water treatment process upgrades to comply with new regulations for specialist disposal of residuals
- Investigation works to meet future environmental compliance targets, such as the Adelaide Coastal Waters Quality Improvement Plan which sets targets to reduce nitrogen and suspended solids released to the Gulf St Vincent from our metropolitan WWTPs.

Customers told us they support investment in capital projects that have positive environmental impacts. However, customers would like detailed information about our plans and likely price implications before supporting future significant environmental investments. We will ensure we keep customers informed of significant environmental projects.

Improving the aesthetics of our infrastructure in residential areas is also important to customers. Customers told us new infrastructure (such as pump stations) should be visually appealing and reflect the local environment. They supported a bill impact of $0.20-$0.40 per year to implement this work (77% customer support). In response, we propose capital expenditure to address the visual amenity of key infrastructure when customers or the local community would benefit.

2.2.4 Smart investment

Our business must be agile and respond appropriately to impacts and opportunities in an ever changing world. We also need to be capable of recovering from significant events to provide our products and services to future generations.

Our business is particularly susceptible to the effects of climate change, which may compromise water security, challenge the operation and viability of infrastructure, create water quality challenges, intensify bushfire risk and change the water usage needs of our customers. Southern Australia climate projections by the CSIRO and the Bureau of Meteorology forecast higher temperatures, decreased rainfall (but higher intensity rainfall events), greater frequency and severity of drought, increased incidence and severity of bushfires and damage to coastal infrastructure. Our ability to evolve and adapt to the changing climate will determine how well we mitigate risk and operate in adverse situations.

2.2.5 Value for money

We understand the affordability of our products and services is a key concern for customers. We have already responded by focusing on business-wide improvement and efficiency programs to reduce costs. Over the second regulatory period, we will continue to pursue savings, efficiencies and better ways of working to deliver improved outcomes for customers.

We will only pursue service improvements in the second regulatory period that are driven by external requirements or where customers supported the improvement and are willing to pay for them. We will not pursue initiatives that customers told us were valuable but too costly given the limited number of customers who would benefit. Specifically, we will not pursue smart meters at $30–$50 per year for residential customers, noise reduction beyond EPA guidelines for wastewater pump station upgrades or further improvement to the taste of water in metropolitan Adelaide given customers are already satisfied with the dramatic improvements in recent years.

Customers told us they want us to do more to help those customers experiencing financial hardship and are willing to pay an extra dollar a year on their bill (71% customer support) for us to offer this help. We currently offer a Customer Assist program for customers experiencing short or long term financial hardship. We propose to expand this program and offer more services and support to those in need.

2.2.6 South Australian growth

As the major provider of water and sewerage services in South Australia, we can positively influence liveability and state economic output. An environment that supports a high quality of life, combined with a strong and thriving economy, benefits the entire community.

Customers confirmed in Your Say they want us to contribute to the economic development of South Australia. Many residential customers support us investigating initiatives that will bring a commercial return and contribute to economic development (72% residential customer support). Over the second regulatory period, we will seek opportunities with clear medium or long term benefits for customers, including alternative funding arrangements to support the state's development. We will only pursue opportunities where there is a net benefit to customers and where these benefits accrue to the community rather than an individual. We will also work closely with industry and other stakeholders to align to *South Australia's Economic Priorities*.

2.2.7 Great customer experience

Our customers are at the heart of our business. While customers told us they are satisfied with the overall services we provide, they would like us to improve their overall service experience. Specifically customers told us they:

- Want better information and communication from us and they support a customer relationship management system being introduced at a $0.90 bill impact per year (83% customer support)
- Would like more digital and online service options for communicating and interacting with us and preferred conducting simple transactions online or via email (including updating contact details, lodging application forms, paying bills, and checking water use and account history).

It is our commitment that every customer has a great experience when they interact with us, and we aim to improve customer satisfaction for the second regulatory period. To improve the customer experience we propose to:

- Invest in a customer relationship management system to give us a comprehensive view of individual customer needs and information including a customer's previous interactions with us, account history and communication preferences
- Develop digital platforms and technology to enable better communication and opportunity for customers to self-serve if they prefer
- Resolve problems more quickly and provide customers better information about the progress of their query/issue
- Pursue more tailored services for key customer groups.

This work is a significant and transformational change for our business that will require investment in technology solutions to support process improvements.

2.2.8 Our values, our people, our success

We recognise our employees are key to achieving success for customers. Over the second regulatory period we will focus on improving our ability to attract, develop and retain talented individuals. We will continue to build a culture where our people are highly motivated and customer focused. We will remain committed to workplace safety and wellbeing by embedding a safety culture in everything we do, including work site upgrades to meet health and safety requirements for our workers. We remain true to our values.

2.3 Customer and stakeholder support

After developing our proposals for the second regulatory period we engaged with our customers and stakeholders again to confirm their support for our strategic direction.

2.3.1 Support from customers

In stage 5 of Your Say, we presented our proposed investments actioning customer feedback from stage 3. We also presented our proposed investments to our customer advisory groups. Full details of both stage 3 and stage 5 of Your Say is provided in attachment B.

A clear majority of our customers support our proposed investments to:

- Expand the Customer Assist program to give more assistance to customers experiencing financial hardship
- Implement a customer relationship management system
- Enhance digital services to improve the customer experience
- Maintain current service levels
- Install 11 water pressure reducing valves in the metropolitan area to modulate pressure in the network and reduce bursts
- Improve visual amenity of proposed upgrades of the Aldinga, Mannum and Murray Bridge WWTPs
- Improve water quality for residents in Orroroo
- Conduct research to inform environmental investments in response to the Adelaide Coastal Waters Quality Improvement Plan
- Maintain current water recycling schemes and seek opportunities in water recycling and industry development.

Our customer advisory groups also support our proposed investments. In particular, the residential customer advisory group support an expanded Customer Assist program and our proposed digital program to improve customer experience.

Our customers and customer advisory groups also support us delivering the proposed investment whilst keeping price increases below the rate of inflation over the second regulatory period.

2.3.2 Support from stakeholders

When briefed, industry regulators indicated their support for our strategic approach and investment to meet both existing and new regulatory standards. They understand the impacts of our expenditure proposals for customers. The EPA, for example, supports relocating the Murray Bridge WWTP to meet environment compliance obligations.

When briefed, customer representative groups indicated particular support for our engagement with customers and our focus on affordability. They showed support in regards to our proposals to reduce water and sewerage bills and to extend our Customer Assist program for customers experiencing hardship.

2.4 Summary

We engaged with our customers and key stakeholders to understand their needs and expectations for the second regulatory period through robust and early stakeholder engagement in our largest ever customer engagement undertaking. Our *Overview of Strategy 2016-20* outlines our strategic direction to respond to these needs and expectations and to respond to the key challenges and embrace the opportunities of the second regulatory period.

Chapter 3
Our commitment to service

KEY POINTS

Our performance against service standards in the first regulatory period has been strong and is meeting our customers' expectations.

As part of our customer engagement, Your Say, customers told us they are satisfied with the level of service we provide and are not willing to pay more for a better service or less for a lower level of service. We propose to align service standard targets for the second regulatory period with our performance levels at the time of customer engagement, with only one exception being the percentage of telephone calls answered within 30 seconds.

We will meet these service standards more efficiently in the second regulatory period than we have in the first regulatory period.

We propose a simplified list of 18 service standards for the second regulatory period rather than the 66 service standards used in the first regulatory period. This simplified list enables customers to understand and monitor our performance more easily, while still capturing a full picture of our service.

During the first regulatory period we have generally performed at or above our service standards and customers have advised us they are happy with our service.

Service standards, set by ESCOSA, are the level of service that we aim to provide customers over a regulatory period. They drive our costs and the level of investment we make, so they affect the price that customers pay. When setting allowable revenue for a regulatory period, ESCOSA considers our costs to meet the service standards it has set.

3.1 How are we performing in the first regulatory period?

We monitor our performance against regulatory service standards to ensure we provide the services customers value.

Overall, we perform well in:

- The telephone service we provide customers – answering queries and lodging faults
- The way we handle customer complaints
- The way we respond to urgent and critical water quality issues
- How quickly we process trade waste applications for our trade waste customers
- The way we respond to major water and sewerage events, ensuring interruptions to our customers and the general public are kept to a minimum.

ESCOSA assesses our performance against service standards each year. It uses a 'best endeavours' approach to assess whether we acted in good faith and used all reasonable efforts, skill and resources[1] to meet our service standards. ESCOSA assessed our performance for 2013-14 and found we met 65 out of 66 service standards. ESCOSA has not yet assessed our 2014-15 performance against service standards.

Whilst we use our best endeavours to meet service standards, meeting all service standards each year is challenging. This challenge partly arises from business changes we make to meet efficiency targets and the low occurrence of events against each service standard. For some service standards, missing 1 event in a year means we are unable to meet the target for the entire year. We are proposing to resolve this issue with a new set of service standards for the second regulatory period (section 3.3).

3.2 What customers told us about service standards

As part of our customer engagement program, Your Say, we consulted on service standards to inform our proposal for the second regulatory period. We specifically tested:

- Our response to water main bursts and sewage overflows
- Our restoration of water and sewerage services after outages
- Our clean-up of sewage overflows
- Our response to water quality issues
- Our response to and fixing of minor leaks
- Customer satisfaction with our performance against service standards at the time of Your Say
- Whether customers would be willing to pay more for a higher level of service or pay less for a lower level of service.

1 ESCOSA, *Water Regulatory Information Requirements for Major Retailers, Water Industry Guideline No. 2*, 2013 p. 72.

Your Say concluded customers were generally happy with the level of service that we provide and are not willing to pay more for a better service or less for a lower level of service.[2]

These discussions also highlighted that our customers want a certain level of information about service standards, and for that information to be easily understood. In other words, a framework of 66 service standards is too detailed, making it difficult for customers to understand performance against areas of service that they value and would be concerned about if an issue arose. The number of service standards also presents statistical issues that make it difficult for customers to monitor and understand our performance. We propose to rectify both of these issues with our service standard proposal (section 3.3).

3.3 Our proposal

We propose a hierarchy of service standards for the second regulatory period that makes it easier for our customers to understand and track our performance. Our proposed approach rolls the previous 66 service standards into a clear, concise set of 18 service standards, still covering the same scope of service criteria.

The proposed service standards:

- Focus on our core business, which is to deliver high quality and reliable water and sewerage services
- Simplify our service standards and make them easier for customers to understand and monitor
- Correct the impact of small datasets on overall performance results
- Balance the cost of monitoring and reporting performance with transparency and regulatory oversight
- Incorporate the 'best endeavours' approach favoured by ESCOSA.

Table 3.1 summarises our proposed service standards (and targets) for the second regulatory period, while attachment C compares them with our existing service standards. The proposed service standards focus on our core services of delivering safe, reliable drinking water and sewerage services and providing a great customer experience.

Customers told us they were happy with our performance at the time of Your Say, so we propose targets in line with that performance (rounded to the nearest 5%[3]). Where performance at the time of consultation was 100% we propose a 99% target in line with ESCOSA's approach to setting the initial service standards, to allow for one off incidents.

The only exception to this approach is the percentage of telephone calls answered within 30 seconds. At the time of consultation, we were achieving 88% against an 85% target. We propose to use the existing target of 85% for the second regulatory period because the Your Say feedback noted issues resolution at first point of contact is important to customers. To address this feedback, we will divert resources to resolving customer issues at the first point of contact (which may be online), while maintaining the service standard of 85% of calls answered within 30 seconds.

2 Deloitte, *SA Water Customer Engagement Program, Stage 3 Report*, 2014 p. 22.
3 ESCOSA, *SA Water Service Standards 2013/14 – 2015/16 Draft Decision*, May 2013, p. 2

Table 3.1 Our proposed service standards*

Proposed measure	Performance at time of consultation	Proposed target for second regulatory period
Percentage of telephone calls answered within 30 seconds	88%	85%
Percentage of written complaints that do not require investigation responded to within 10 business days	89%	90%
Percentage of complaints where an investigation is required responded to within 20 business days	92%	90%
Percentage of water quality complaints responded to within the required timeframe	95% 100%	95% (Adelaide metropolitan) 99% (Regional)
Percentage of water connections installed within the required timeframe	95%	95%
Percentage of sewerage connections installed within the required timeframe	95%	95%
Percentage of trade waste applications processed within 10 business days	99%	99%
Percentage of water events attended within the required timeframe	98% 99%	98% (Adelaide metropolitan) 99% (Regional)
Percentage of water events restored within the required timeframe	99% 99%	99% (Adelaide metropolitan) 99% (Regional)
Percentage of sewerage events restored within the required timeframe	97% 100%	97% (Adelaide metropolitan) 99% (Regional)
Percentage of sewage overflows attended within the required timeframe	98% 100%	98% (Adelaide metropolitan) 99% (Regional)
Percentage of sewage overflow clean-ups completed within the required timeframe	98% 99%	98% (Adelaide metropolitan) 99% (Regional)

*Definitions and required timeframes comply with ESCOSA guideline 2 and are unchanged.

3.4 How we will achieve our proposed service standards

To achieve the proposed service standards, we will maintain our commitment for:

- Expenditure on our water and sewerage networks to keep the number of bursts and chokes, and thus service interruptions, to current levels
- Resources that we have to respond to service interruptions and restore them within timeframes that our customers support
- Resources that we have to answer our customers' calls, respond to their queries and address their complaints
- Resources that we have to process applications for trade waste services and water and sewerage connections, and to install connections.

We aim to meet these service standards more efficiently than in the first regulatory period. To do so, we will improve processes, end-to-end process measurement and our technology. Combined with the other elements of our proposal, these improvements will result in lower prices for customers over the second regulatory period.

3.5 Service incentive schemes and guaranteed service level schemes

Although ESCOSA's Framework and Approach sets out schemes that can drive performance behaviours in a regulated environment,[4] it does not require us to propose a service incentive scheme or guaranteed service level scheme for the second regulatory period. We support not implementing either scheme for the second regulatory period, for the following reasons:

- The regulatory framework applying to the water and sewerage industry in South Australia is still developing, and the benefit to our customers of such schemes has not been tested
- The willingness of our customers to pay for such schemes has not been tested
- We do not have the systems or available funds to record and monitor the data needed to implement these schemes.

Instead, during the second regulatory period, we propose to:

- Undertake consultation that will assess the need and benefit of such a scheme for our customers
- Implement a customer relationship management system that will help close some of our data gaps.

In the second regulatory period, we will collect information to assess the value of these schemes for our customers, and to optimise the development of any such scheme.

4 ESCOSA 2014, SA Water Price Determination 1 July 2016 – 30 June 2020, Final Framework and Approach, p. 17.

3.6 Summary

Our performance against service standards in the first regulatory period has been strong and is meeting our customers' expectations.

As part of our customer engagement, Your Say, customers told us they were satisfied with the level of service we provide and were not willing to pay more for a better service or less for a lower level of service. We propose to align our service standard targets for the second regulatory period with our performance levels at the time of customer consultation, with one exception.

We propose a simplified list of 18 service standards for the second regulatory period rather than the 66 service standards used in the first regulatory period. This simplified list enables customers to understand and monitor our performance more easily, while still capturing a full picture of our service.

Chapter 4
Regulatory rate of return

KEY POINTS

The regulatory rate of return is a key determinant of water and sewerage prices. ESCOSA recommended a new method for calculating the regulatory rate of return to apply in the second regulatory period. We broadly support the new method as it improves price stability for customers and better reflects our actual financing costs.

Our proposal adopts a regulatory rate of return of 4.2% (post-tax real) assuming observable inputs at the end of April 2015. The actual regulatory rate of return will most likely be based on observable inputs in May 2016. Any changes will affect prices.

The proposed regulatory rate of return is based on immediate transition to a 10 year average cost of debt and a forward estimate of the cost of debt over the second regulatory period. These assumptions provide greater price certainty for customers while still keeping prices low.

Our approach to the regulatory rate of return provides greater price certainty for customers while still keeping prices low.

We propose a regulatory rate of return of 4.2% (post-tax real) for the second regulatory period. The proposed rate is based on ESCOSA's new method to calculate the regulatory rate of return and our assumptions outlined in sections 4.1.1 to 4.1.5.

4.1 Method

ESCOSA issued its *Report to the Treasurer on SA Water's regulatory rate of return 2016-20* (Rate of Return Report) on 30 March 2015. The Rate of Return Report proposes adopting a new method for calculating the regulatory rate of return for the second regulatory period.

The new method moves away from short term averaging periods for estimating the cost of debt. We broadly support the new method because it improves price stability for customers, reduces the chance of price shocks and better reflects the actual costs we incur to finance our business. Further, the new method is broadly consistent with regulatory precedent interstate and in particular the Australian Energy Regulator.

Specifically, we support:

- Retaining a 10 year term to maturity of market based parameters, because it reflects the long term nature of prudent borrowing to fund long lived assets
- Retaining a market risk premium of 6.0%, as it is generally consistent with regulatory precedent
- Retaining a gearing assumption of 60% and a gamma assumption of 0.50
- Moving to 10 year averaging of observable inputs to estimate the cost of debt, because it better reflects the borrowing activities and costs of an efficiently financed business and provides increased price stability for customers
- Moving to a cost of debt based on the cost of BBB rated bonds sourced from Reserve Bank of Australia (RBA) data, because the data is easily accessible and comes from a reliable source
- Introducing an allowance for debt raising costs, because it recognises the true costs incurred by an efficient business and is consistent with regulatory precedent.

We calculated our proposed regulatory rate of return for the second regulatory period in line with the new method. Our key assumptions and areas we consider warrant further deliberation are outlined in sections 4.1.1 to 4.1.5.

4.1.1 Transition and calculation of the weighted 10 year trailing average for the cost of debt

The Rate of Return Report adopts a weighted 10 year trailing average of observable inputs to derive the cost of debt. The Rate of Return Report does not stipulate how quickly we will move to the trailing average or how the trailing average will be calculated.

We propose adopting the weighted 10 year trailing average for the cost of debt immediately, using a simple unweighted 10 year trailing average of yields between April 2006 and April 2015. We calculated our proposed regulatory rate of return for the second regulatory period on this basis.

Whilst a delayed transition could provide even lower prices for customers in the second regulatory period, it would postpone the benefits customers receive by moving to longer term averaging for the cost of debt. These benefits include a lower likelihood and potential size of future price shocks. These price shocks could be significant under the previous method. Further, a delayed transition would increase the impact on customer prices of market movements between now and May 2016.

4.1.2 Averaging method for the cost of debt

The Rate of Return Report discussed weighting capital expenditure for timing as an option to determine the 10 year trailing average cost of debt. Our proposal does not weight capital expenditure for timing.

We consider weighting would complicate and skew the average without any material difference in the regulatory rate of return outcome. Weighting for capital expenditure is not relevant for past investments where the investment decision has already been made.

Applying weightings for future capital investment is relevant only when capital expenditure materially changes our level of borrowings. In a 10 year averaging model, 10% of borrowings mature and re-price each year. Capital expenditure in any year would need to exceed the level of assumed maturing borrowings (approximately $700 million) before a weighting would be necessary. This is not the case for our proposal.

4.1.3 Annual updates for the cost of debt

The Rate of Return Report proposed annual updates for the cost of debt during a regulatory period by moving the 10 year averaging period forward each year. This approach aligns with changes in our actual cost of debt and is consistent with recent regulatory precedents interstate.

Predictions of low forward interest rates, if correct, would mean annual updates would likely deliver price reductions each year during the second regulatory period. Rather than possible annual price reductions, we prefer to pass price reductions onto customers early (in 2016-17) and avoid the complexity of annual updates. Our proposal aims to achieve the same revenue outcome over the second regulatory period.

To implement our proposal, we would calculate annual changes in the 10 year trailing average cost of debt in the second, third and fourth years of the second regulatory period based on a forecast of interest rates. We consider the forecast interest rate information from the Bloomberg Australian dollar sovereign forward 10 year swap curve is a reliable, transparent and accessible source of forward market data. Equivalent forward data is not readily available from the RBA data that we use to calculate the current cost of debt.

Our proposed approach supports price stability and price certainty for customers over the second regulatory period and provides price reductions as early as possible. We acknowledge our proposed approach, compared with annual updates, may result in under – or over – recovery of revenue. We envisage these impacts will be relatively minor and we would work with ESCOSA to provide customers with a fair outcome.

4.1.4 Averaging method for the cost of equity

The Rate of Return Report retained a short term averaging period of 20 days to estimate the risk free rate in the cost of equity calculation. It considered that period provides the best estimate of the compensation currently required by equity investors. We consider a longer term averaging period (consistent with the

cost of debt calculation) would be in the long term interests of customers because it would reduce price volatility and the likelihood of price shocks for customers each regulatory period. It would also better reflect the long term investment horizon of our business.

Despite our preference for a longer term approach, we based the average cost of equity for the second regulatory period on the method outlined in the Rate of Return Report.

4.1.5 Method for estimating inflation

The Rate of Return Report required the inflation estimate[1] to be based on the RBA forecast for the first year of the regulatory period and the mid-point of the RBA's inflation target band for the remaining 9 years of the trailing average period. This inflation estimate will be close to 2.5% each regulatory period, equivalent to the long term estimate of inflation. We calculated our proposed regulatory rate of return for the second regulatory period on this basis.

However, we consider this method does not necessarily accurately estimate inflation over a regulatory period. Current economic and inflationary conditions do not reflect the long term average. A more accurate method to estimate inflation would be to align the period of inflation averaging with the regulatory period, and use actual market rates. For a 4 year regulatory period, for example, this approach would use the RBA forecast for first 2 years of the regulatory period and the mid-point of the RBA's inflation target band for the remaining 2 years. It would provide a more accurate outcome than the method suggested in the Rate of Return Report.

Despite preferring an alternative method, we acknowledge the current low levels of inflation would result in a higher regulatory rate of return, and therefore higher prices, for the second regulatory period. To reduce price impacts for our customers, we adopted the Rate of Return Report method for estimating inflation in the second regulatory period. However, we consider alternative methods should be examined as part of the third determination.

4.2 Our proposal

We calculated our proposed regulatory rate of return for the second regulatory period using the new method outlined in the Rate of Return Report and our assumptions outlined in sections 4.1.1 to 4.1.5. The proposed regulatory rate of return is based on observable market inputs at April 2015 extrapolated forward to May 2016. The regulatory rate of return ESCOSA uses in its second determination will be based on observable market inputs at May 2016. If observable market rates fall between now and May 2016, the regulatory rate of return will be lower than our proposed rate. Conversely, if observable market rates rise between now and May 2016, the regulatory rate of return will be higher than our proposed rate. This change will affect final water and sewerage prices for the second regulatory period.

1 Inflation estimate is used to convert historical observable market rates from nominal to real values

Table 4.1 compares key elements of the method used to calculate the regulatory rate of return for the first regulatory period and the method used for the second regulatory period. The new method generates a post-tax real regulatory rate of return of 4.2%. This rate is 0.3% lower than the regulatory rate of return used for the first determination, which helps to reduce water and sewerage prices over the second regulatory period.

Table 4.1 Regulatory rate of return comparison

Element	Determined by ESCOSA for first regulatory period	Proposed for second regulatory period
Cost of debt		
Risk free rate	10 year Commonwealth Government bond yield	10 year BBB corporate bond yield (sourced from the RBA series of credit spreads)
Debt risk premium	Extrapolated 7 year Bloomberg BBB fair value curve	
Averaging period	20 days	10 years*
Annual update	No	An option but not applied**
Debt transaction costs	Nil	0.125%
Cost of equity		
Risk free rate	10 year Commonwealth Government bond yield	10 year Commonwealth Government bond yield
Averaging period	20 days	20 days
Market risk premium	6.0%	6.0%
Equity beta	0.8	0.7
Other		
Inflation estimate	Market implied inflation (index bonds)	10 year average: RBA forecast for first year of regulatory period and mid-point of RBA inflation target band for remaining 9 years (2.5%)
Gearing (debt to total value)	60%	60%
Gamma	0.50	0.50
Credit rating	BBB	BBB
Corporate tax rate	30%	30%
Estimated outcome* **		
Pre-tax real regulatory rate of return	5.06%	4.66%
Post-tax real regulatory rate of return	4.50%	4.20%

*ESCOSA will determine how to undertake 10 year averaging in the lead-up to its second determination.
**We propose not to adopt annual updates to provide lower customer prices from the first year of the second regulatory period. Instead we propose to forecast the impact of annual updates over the regulatory period and provide those price benefits to customers in 2016-17.
***Based on observable market inputs at April 2015. The second determination is likely to use observable market inputs at May 2016 so the actual regulatory rate of return will not be known until May 2016.

Our proposed regulatory rate of return for the second regulatory period compares favourably against regulatory decisions and recently submitted pricing proposals in other jurisdictions and industries (see Table 4.2). A lower regulatory rate of return helps us to provide lower prices for our customers.

Table 4.2 Regulatory rate of return comparison with other jurisdictions

Organisation	Regulatory period	Post-tax real regulatory rate of return
Regulatory decisions		
SA Power Networks*	2010-2015	7.06%
Sydney Water**	2012-2016	5.60%
ElectraNet***	2013-2018	4.88%
Hunter Water****	2013-2017	4.60%
Melbourne Water*****	2013-2016	4.50%
SA Water	2013-2016	4.50%
Regulatory pricing proposals		
SA Power Networks******	2015-2020	5.12%
Sydney Water*******	2016-2020	4.62%
SA Water	2016-2020	4.20%

*Australian Energy Regulator, *South Australia distribution determination 2010-11 to 2014-15 – final decision*, 2010, p. 193.
**IPART, *Review of prices for Sydney Water Corporation's water, sewerage, stormwater drainage and other services – From 1 July 2012 to 30 June 2016*, 2012, p. 191.
***Australian Energy Regulator, *ElectraNet, Transmission determination 2013-14 to 2017-18 – final decision*, 2013, p. 133.
****IPART, *Hunter Water Corporation's water, sewerage, stormwater drainage and other services – Review of prices from 1 July 2013 to 30 June 2017*, 2013, p. 182.
*****ESC, *Price review 2013: Greater Metropolitan Water Businesses – Final Decision*, 2013, p. 110.
******SA Power Networks, *SA Power Networks Regulatory Proposal 2015-2020*, 2015, p. 342.
*******Sydney Water, *Our plan for the future: Sydney Water's prices for 2016-20*, 2015, p. 227.

4.3 Summary

We adopted ESCOSA's new method for calculating the regulatory rate of return to apply in the second regulatory period. We broadly support the new method as it provides improved price stability for customers and better reflects our actual financing costs.

We calculated a regulatory rate of return of 4.2% (post-tax real) assuming observable inputs at the end of April 2015. The actual regulatory rate of return will most likely be based on observable inputs in May 2016. Changes in observable inputs will affect prices.

The regulatory rate of return is also based on immediate transition to the 10 year average cost of debt and a forward estimate of the cost of debt over the second regulatory period. These assumptions provide greater price certainty for customers and greater price reductions to customers in 2016-17 than annual updating of the regulatory rate of return. ESCOSA will review the assumptions as part of its second determination. Any changes will affect prices.

Our water service

We are proud to deliver safe, reliable drinking water and sewerage services to South Australians across an expansive network of pipes, pump stations, treatment plants and other water infrastructure. Our business is quite unique in that we supply a relatively small number of customers across a relatively large network – unlike many of our peers in the industry, we have very low customer density. This presents an ongoing challenge for us in keeping capital and operating costs per customer to an absolute minimum while still maintaining the levels of service our customers expect, from Ceduna to Port Augusta, across to the Riverland, down to Mount Gambier and most places in between.

For water services, our primary responsibilities are to plan, build, operate and maintain our water network to reliably provide quality water to our customers. This overview provides context to our business of sourcing, treating and transporting water to our customers. The following chapters of our proposal set out the capital (chapter 5) and operating expenditure (chapter 6) we propose to enable us to do this safely, prudently and efficiently. We also set out the required revenue (chapter 7) and customer price impacts (chapter 8) of these levels of expenditure.

Our customers and levels of service

We deliver water across the state to all sectors of the community, with approximately 95% of the South Australian population receiving water from us. In 2014-15 we served 751,605 properties, and we continue to connect new properties every day. We classify our customers as residential (household), commercial or non-residential. Commercial customers include retail, wholesale and various other service providers. Non-residential customers include industrial and irrigation customers, hospitals and hotels.

The types of customers we service, and their locations are shown in Figures W.1 and W.2. They illustrate most of our customers are residential, and the majority are in the metropolitan area (while approximately 28% are in regional areas).

Figure W.1 Our customers, by type

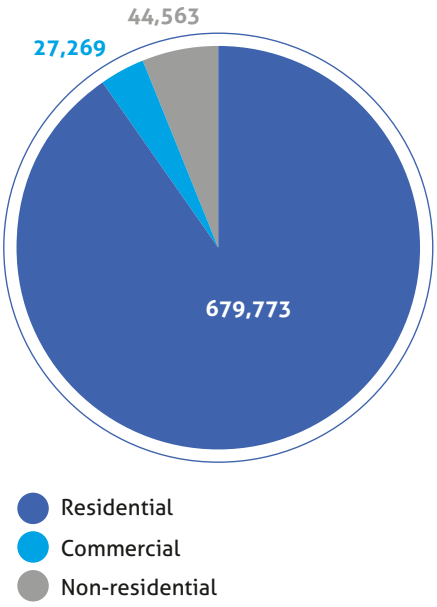
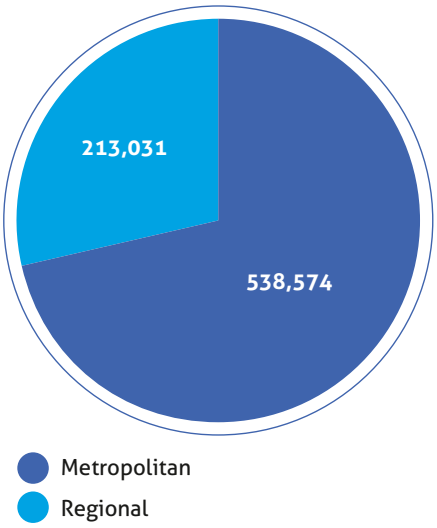


Figure W.2 Our customers, by location



Approximately 95% of the South Australian population receive water from us.

Our water infrastructure investment has returned to more stable levels. It is directed towards managing risk, renewing assets, responding to customer growth expectations and minimising environmental impacts.

Our customers expect the levels of service that we promise in our Customer Charter. Our performance during the first regulatory period against agreed service standards has largely delivered what we said we would. As part of our customer engagement program, Your Say, customers told us they are satisfied with the levels of service they receive from us. This proposal (RBP 2016) focuses on maintaining those service levels as efficiently as we can.

We acknowledge our customers are feeling the impact of rising household living expenses, including water. Affordability is a key customer concern, and we are committed to keeping water prices as low as possible. We achieved water price reductions in the first regulatory period, with a 6.4% reduction in 2013-14 followed by inflation only increases in 2014-15 and 2015-16. These price reductions reflected our focus on efficiency, which led us to restructure our business and commence a business wide transformation program to improve our service delivery. We will continue to drive efficiencies in our water service in the second regulatory period, to ease pressure on water bills.

In addition to lower prices, our Customer Assist program supports residential customers experiencing temporary or permanent financial hardship. Our strategy of early support means a large percentage of customers meet their financial obligations successfully.

Our infrastructure

To deliver services to our water customers, we have invested in 27,319 kilometres of water mains, 40 water treatment plants and 3 desalination plants. These assets – with a regulatory value of around $8 billion – are spread across the state (Figure W.3 and Figure W.4). We operate and maintain this extensive network of assets to ensure we continue to deliver the services that our customers expect.

Over the past 10 years, our investment in water security infrastructure to improve water security for all South Australians was significant. This investment included the construction of the Adelaide Desalination Plant (ADP) and the North South Interconnection System, which provides more network operational flexibility and a vital contingency for the Happy Valley Water Treatment Plant. This investment also means we can optimise operational and capital costs by using the ADP in place of Happy Valley Water Treatment Plant when it makes sense to do so. For the first regulatory period, our water infrastructure investment returned to more stable levels. It is directed towards managing risk, renewing assets, responding to customer growth expectations and minimising environmental impacts. Our investment proposals for the second regulatory period continue on this path.

Figure W.3 Statewide water infrastructure

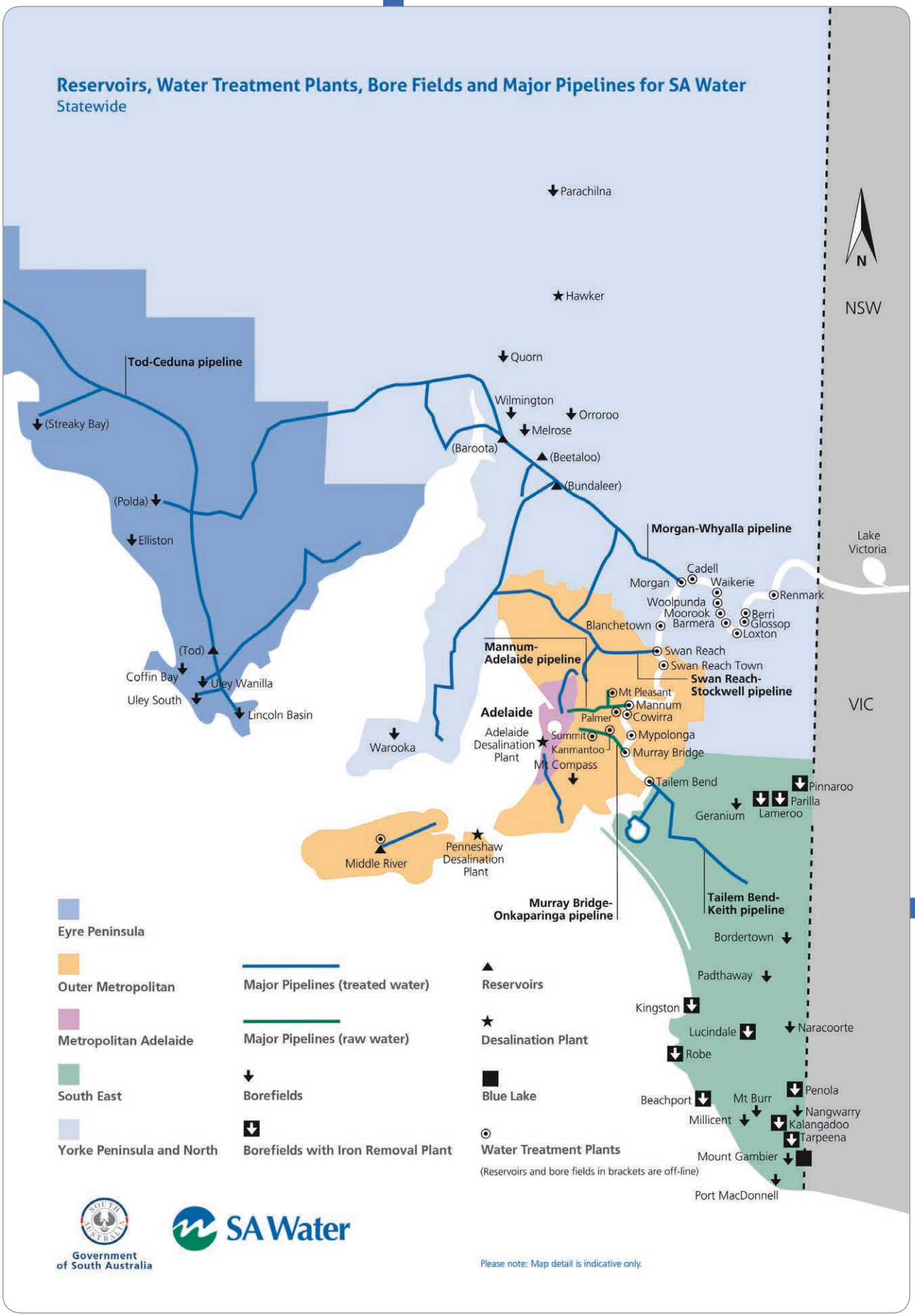
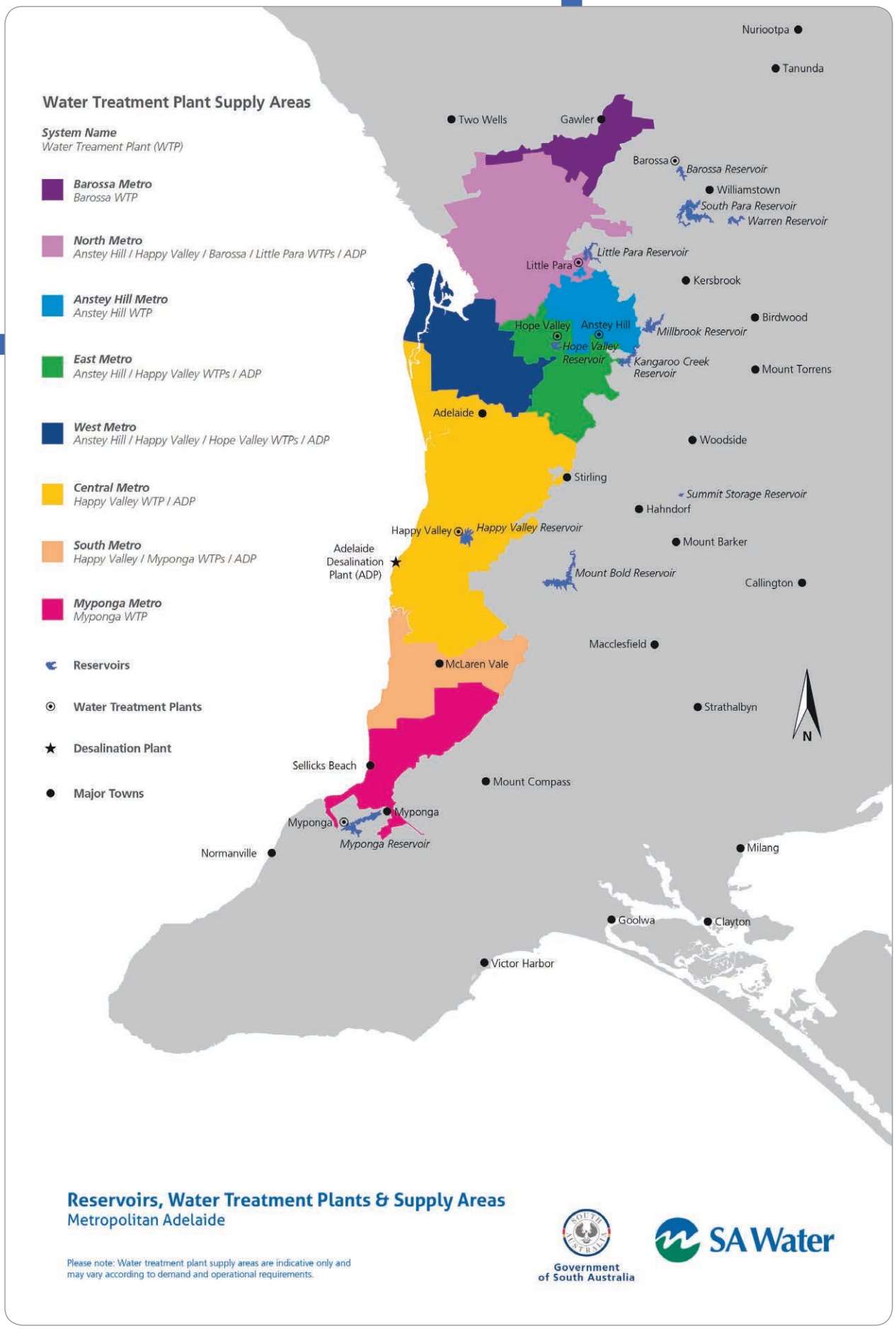


Figure W.4 Greater metropolitan water infrastructure



Water demand

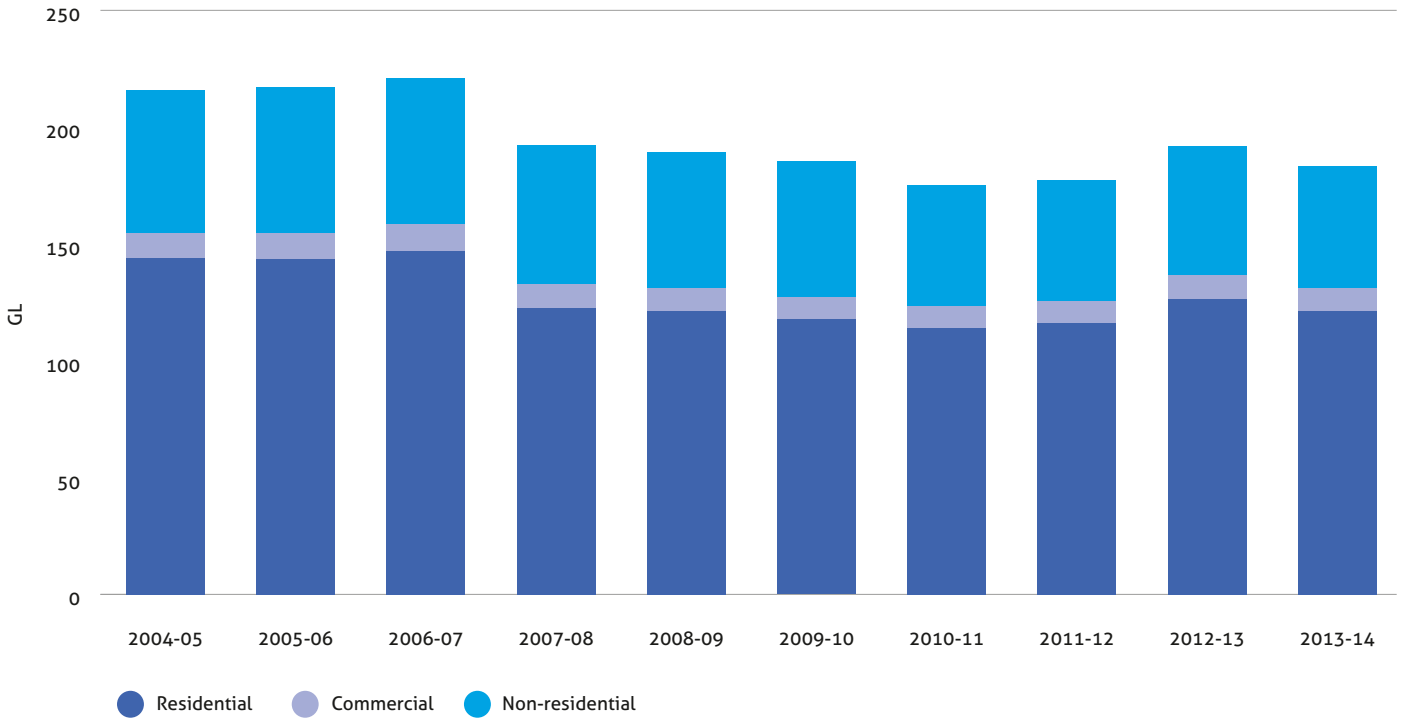
Customers have reduced water consumption over the last decade in response to prolonged drought conditions, water restrictions and increased water prices. This is illustrated in Figure W.5 below. Our customers' total annual water use is now around 184 gigalitres (2013-14).

Over the short to medium term, we do not expect water use to return to pre-drought levels:

- Because customers have implemented permanent water saving devices (for example, water efficient washing machines and dishwashers, and water efficient landscaping)
- Changes in housing stock and block sizes have reduced outdoor water use
- Current water price structures encourage relatively low water use.

Annual demand depends on weather and can fluctuate significantly from year to year, and from the forecast.

Figure W.5 Total demand for water (our billed water sales) over the past 10 years



Sourcing our water

Factors influencing water availability

Historically, we have delivered water to customers from a range of sources, including the River Murray, the Western Mount Lofty Ranges and various groundwater sources. The Department of Environment, Water and Natural Resources licenses us to extract water from these water sources. The amount of water we extract from these sources reflects a range of factors, including climate variability, climate change, availability of alternative sources and policy for the use and sharing of water.

Climate variability – coupled with low storage capacity in our metropolitan reservoirs (compared with other jurisdictions) – means the volume of surface water we use from the Mount Lofty Ranges can vary significantly from one year to the next. On average, the Mount Lofty Ranges catchment inflows provide 50% of Adelaide's water supply; in a low rainfall year, they provide as little as 10% (Figure W.6).

Climate change will likely make water supply more difficult and costly, because it is likely to:

- Vary water demand
- Reduce the quantity of surface water and groundwater
- Damage infrastructure via flooding, coastal erosion and bushfires
- Reduce water quality
- Increase the need for land management activity to minimise bushfire risk and ensure catchment recovery.

The *State of the Climate Report* 2014 (Bureau of Meteorology and CSIRO) predicts a range of impacts for South Australia. These impacts include increasing temperatures, more severe and frequent heatwaves, reduced precipitation with potentially higher intensity rainfall events, more severe and frequent drought, increased bushfire risk, rising sea levels and more frequent and intense storm surge events. We remain vigilant to manage the risks affecting our ability to supply water at an affordable price.

Alternative water sources such as recycled water and our recent investment in desalination technology has diversified our supply options by providing a reliable, non-climate dependent water source. The ADP is our most significant source of desalinated water. The Penneshaw and Hawker desalination plants also produce desalinated water.

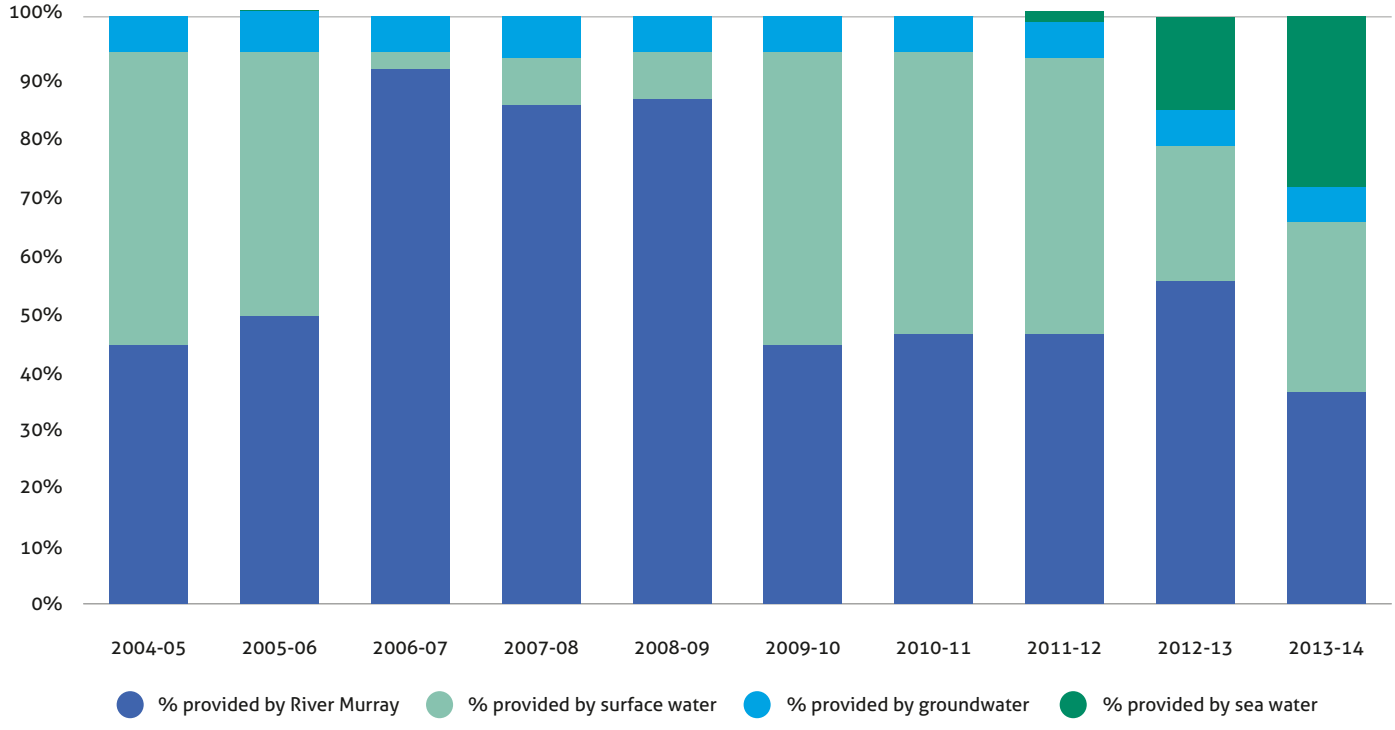
Government policy for using and sharing water in South Australia can affect our water allocations, thereby changing the cost to supply our customers. We are monitoring the development of the South Australian Murray Darling Basin Natural Resource Management Board's Water Allocation Plan for the River Murray Prescribed Resource, for example.

Our supply mix

Figure W.6 shows the change in our supply mix over the past 10 years. The low levels of availability from 2006-07 to 2008-09 illustrate the variability of surface water. The high volumes of desalinated water in 2012-13 and 2013-14 were driven by the ADP's implementation proving period and contract warranty provisions. Now the warranty period has passed, desalinated water will decline as part of our supply mix, unless South Australia experiences another drought.

Our recent investment in desalination technology has diversified our supply options by providing a reliable, non-climate dependent water source.

Figure W.6 Our water sources over the past 10 years



The River Murray and our surface and groundwater supplies will continue to play a critical part in South Australia's water supply, supplemented by desalinated water.

The River Murray and our surface and groundwater supplies will continue to play a critical part in South Australia's water supply. But the availability of desalinated water is changing our preferred mode of supplying customers in Adelaide. In the second regulatory period, we will continue to supply Adelaide primarily with water extracted from the Mount Lofty Ranges and River Murray, but use desalinated water to supplement these traditional supplies.

Keeping the ADP operational not only diversifies our supply options, but also helps us manage water quality risks, extend the plant's useful life, and allows us to defer capital expenditure in other parts of the water supply network.

In summary, the first regulatory period involved significant change in how we source water and how we plan and operate a more integrated water network. Now we no longer need to make significant investment in water infrastructure to achieve water security, we will focus on meeting customer needs to deliver services they value at an affordable price. The following chapters demonstrate how we will manage the challenges of our water service over the second regulatory period.

Water quality

Compared with other Australian jurisdictions, our traditional water sources are highly variable in terms of quality. We have consistently met the challenge to deliver reliable high quality water to customers and to meet the stringent water quality requirements of the *Australian Drinking Water Guidelines* and the *Safe Drinking Water Act 2011*.

Our investment to respond to water security during the drought was partly aimed at managing water quality risks from low natural flows. This investment involved lowering pump sets and infrastructure along the River Murray (particularly at Swan Reach, Mannum, Murray Bridge and Tailem Bend) and installing algal booms around key offtakes along the River Murray. We also installed some online monitoring and sampling equipment along the River Murray to give us early warning of issues and to feed into long term planning and models.

Despite our strong water quality focus, we face ongoing water quality challenges to supply our customers with the water they expect. These challenges include meeting increasingly stringent standards, balancing aesthetic requirements with water quality requirements and continuing to source water when droughts are likely to become longer and more frequent. Here, we discuss these challenges in turn.

First, we need to comply with standards that are continually being reviewed and adjusted to ensure the best possible outcomes for customers and the environment. They affect how we operate our infrastructure and the costs involved. Increased standards which will affect us in the second regulatory period include:

- A potential new health based target arising from revision of the *Australian Drinking Water Guidelines* (expected in 2016). Although the underlying water quality risk for our customers has not increased, to comply with a new health based target we will need to modify how we manage our water treatment plants, update our protocol for incident notification and communication, and appropriately train our staff. Because the health based target is not yet prescribed, we cannot estimate with certainty the capital investment or ongoing operational expenditure implications. For this reason, we did not factor the compliance costs into our proposal. While we forecast the impacts to be minimal in the second regulatory period, we will need to consult with the Department for Health and Ageing on how the target applies to us.

- Revised standards for the re-use of residual by-products (such as solid sediments, copper and alum) from our water treatment process. These standards are required by the Environment Protection (Waste to Resources) Policy issued by the EPA. The revisions require a material change to how we currently use these by-products. We are seeking to develop a code of practice with the EPA, so we can comply efficiently.

Customers in some regional areas value aesthetic improvement in their water supplies. Your Say showed customers support investment in water quality initiatives in areas experiencing significant issues. In the second regulatory period, we propose to address water quality issues at Orroroo and continue investigating how to improve water quality in other regional areas that would benefit.

In the previous decade, we experienced prolonged drought followed by a 'Black Water' event in 2009-10. The Bureau of Meteorology suggested in its April–June 2015 climate outlook we are likely to head into El Niño conditions characterised by dry weather patterns. Over the longer term, climate change is projected (according to the *State of Climate Report*) to result in more frequent and severe droughts. These conditions present us with increasing source water challenges. If the quality of our raw water sources deteriorates, we will incur additional costs from having to use more chemicals and/or source water from alternative supplies.

Chapter 5
Investment in our infrastructure

KEY POINTS

We are forecasting to achieve savings of $117 million against the water capital expenditure allowance set in the first determination. We will achieve this through a combination of prudent deferrals, capital delivery efficiencies and more favourable contract rates arising from a downturn in the construction market. We will achieve these savings without compromising levels of service to customers.

We propose to invest $675 million in water infrastructure over the second regulatory period. Our annual average investment in water infrastructure will be approximately 18% lower than the annual average water capital expenditure allowance set in the first determination. Lower capital expenditure will contribute to more affordable water prices over the longer term and we will do this without compromising levels of service to customers.

Our investment proposal for water infrastructure aligns with our strategic direction, considers what our customers told us in Your Say and delivers a range of benefits to our customers, our workers, our owner and the broader community. Our focus on customer outcomes is evident because 75% of our proposed investment is to deliver reliable services and quality water to customers.

Our investment proposal for water infrastructure is net of a further proposed efficiency saving of 5% ($35 million). It will be challenging achieving savings of this magnitude over the second regulatory period. However we are confident our enhanced capital delivery framework and innovative procurement practices will enable us to make these savings.

We will continue to demonstrate mature governance behaviours by improving our asset management and capital delivery processes over the second regulatory period, allowing us to maintain reliable services for the long term.

5.1 Our proposal

We understand affordability is a key concern for our customers. For the second regulatory period our capital investment proposal for water infrastructure balances current and future outcomes and maintains levels of service for customers while keeping investment at a modest level. Section 5.3 explains how we developed the capital investment proposal.

We propose efficient investment of $675.4 million in water infrastructure over the second regulatory period (Table 5.1) which benefits our customers, our owner, our workers and the community. Our proposed annual average investment in water infrastructure is approximately 18% lower than the annual average water capital expenditure allowance set in the first determination. Our performance in the first regulatory period is summarised in section 5.2.

Our investment proposal includes a savings commitment of approximately 5% in capital delivery costs (section 5.4.3). We will achieve these savings while delivering all the outcomes of the water technical capital plan. This cost saving will help reduce prices for our customers.

Our investment proposal also includes the $6.3 million of reverse osmosis membranes which are capitalised for regulatory purposes (further detail provided at section 5.4.1.6).

Table 5.1 Water capital expenditure by investment driver proposed for the second regulatory period

Investment driver	Proposed investment (Dec 2014 real $'million)
Safety for the community	90.6
Safety for our workers	44.5
Reliability for our customers	394.9
Quality for our customers	137.1
Financial outcomes for our customers/owner	36.7
Technical capital plan	**703.8**
Less capital delivery efficiency (approximately 5%)	-34.7
Capitalisation of desalination reverse osmosis membranes	6.3
Proposed investment (water capital expenditure)	**675.4**

5.2 How are we performing in the first regulatory period?

5.2.1 We will deliver outcomes promised for the first regulatory period

For the first regulatory period we committed to appropriately manage water infrastructure risks, to maintain high standards for the quality of water supplied to customers and not increase the number of supply interruptions to water customers. We are performing well against these commitments (see chapter 3). Table 5.2 summarises the overall outcomes we expect to achieve by expenditure category[1] from our water infrastructure investment over the first regulatory period.

1 Expenditure categories are the method we historically use to classify expenditure by driver i.e. the reason for undertaking the investment.

Table 5.2 Key expenditure category outcomes for first regulatory period

Expenditure category	Forecast capital (Dec 2014 real $'million)	Key outcomes
Asset renewal Maintain asset performance by refurbishing or replacing ageing infrastructure	280.0	• Customer interruption rate for water services forecast to be better than target over the first regulatory period with <2,300 properties having 3 or more interruptions statewide • Burst rate on pipes forecast to meet target across Adelaide metropolitan area; Country rates slightly above the 8 failures per/100 km per year • Reduced investment based on asset condition assessment of reticulated mains, structures and mechanical and electrical programs
External obligations Maintain or improve asset performance to comply with externally imposed standards	190.1	• Ongoing reliability and safety of critical dam infrastructure • Water quality incidents at June 2014 are significantly lower than previous years with 98.8% compliance with Australian Drinking Water Guidelines, across metropolitan Adelaide and country • Positive external audit results in 2014 against Safe Drinking Water Act 2011 • Field worker safety through site safety upgrades • Completion activities for Adelaide Desalination Plant (ADP) – decommissioning work and management of minor construction items post handover
Growth Connect supplies to new customers and then maintain asset performance as the growth in demand extends the existing asset in the system beyond its original design parameter	32.6	• Forecast 18,790 new connections (representing 3% growth in new connections) across metropolitan Adelaide and country areas by the end of the first regulatory period. Pressure and flow rates will be maintained for existing customers in these growth areas • Reduced investment in networks due to lower than expected growth

We are achieving the outcomes outlined in Table 5.2 by delivering asset programs[2] and a suite of major projects.[3]

Key asset programs across the first regulatory period include $113 million of mechanical and electrical work (structures on treatment plants, pipelines and networks), $36 million of external obligation work (water quality at treatment plants and networks) and $27 million of growth work (network and treatment). Across asset programs we also forecast to deliver 457 minor water projects (less than $1 million each) that help to maintain service levels.

During the first regulatory period we forecast to spend $67.7 million on the 10 highest value major water projects (13.5% of forecast capital water expenditure for the first regulatory period). Table 5.3 summarises the status of these 10 major water projects and the key outcomes they deliver. Figure 5.4 provides further detail about how the forecast expenditure compares to the capital allowances of the first determination.

2 Includes minor projects and/or a program of non-specific work for an asset class (e.g. upgrades of reticulation mains).
3 A project over $4 million for which we prepare major project justifications.

Table 5.3 Top 10 major project outcomes over first regulatory period (Dec 2014 real $)

Major projects to be completed in first regulatory period		
Major project	**Status and expenditure for first regulatory period***	**Key outcomes**
Plympton–Marion Road trunk main Replacement of 6.9 km trunk water main between Anzac Highway and Grange Road (constructed in 1898) experiencing above average bursts and supply interruptions to customers	Completed 2013 $9.0 million	• Reduces number of unplanned interruptions to water supply in the surrounding area
Happy Valley water treatment plant chlorine station upgrade Upgrade existing chlorine storage and dosing facilities to comply with new Work Health and Safety Regulations that came into effect 1 January 2013	Completed 2014 $7.4 million	• Water from the plant meets Australian Drinking Water Guidelines • Facility complies with major hazard facility requirements under the new Work Health and Safety Regulations
Minnipa high level tank replacement Maintain function of storage by replacing 2 concrete tanks in poor structural condition with an 18 megalitre earthen bank storage	Completion due 2015 $4.6 million	• Service capacity (and hence service levels to customers) maintained • Protect public and environment from spillage and reduce water loss through leakage
Hawker desalination Desalination plant and associated infrastructure at Hawker to deliver a long term sustainable potable water supply to customers	Completed 2014 $4.7 million	• A sustainable potable water supply for customers in the Hawker area • Complies with Australian Drinking Water Guidelines
Happy Valley water treatment plant Line and cover the filtered water storage to minimise water quality risks for the community	Completion due 2015 $3.8 million	• Ongoing reliability of drinking water for our customers • Compliance with Work Health and Safety Regulations

Major projects which will not be fully completed in first regulatory period		
Major project	**Status and expenditure for first regulatory period***	**Reason project deferred or stopped**
Kangaroo Creek Dam safety project Upgrade works across the first and second regulatory period to ensure safety of the community downstream of the dam and compliance with the Australian National Committee on Large Dams Incorporated guidelines	Construction works partially deferred to second regulatory period $29.1 million	• Initial investigation identified need for additional measures to reinforce dam structures against seismic events • Construction works partially deferred to second regulatory period to ensure engineering solution manages all flood risks during construction at the lowest possible cost • In the interim dam risks are being actively managed
Tod River Dam safety Increase flood capacity of dam and upgrade in line with Australian National Committee on Large Dams Incorporated guidelines	Project deferred until second regulatory period $3.8 million	• Additional scoping of works provided updated information. Significant diligence is being applied to early stages of this project to confirm delivery outcomes will be met using a staged upgrade approach
Hope Valley tank structure renewal Repair and replace cracked and spoiled structural elements of the tank	Project commenced but will not be completed until 2018 $3.2 million	• Project was slightly deferred to allow for further design investigation to ensure safe tank access for renewal works • Maintain water quality standards for in excess of 100,000 customers once complete

*Actual expenditure where project complete and forecast expenditure where project is underway or yet to commence.

Major projects which will not be fully completed in first regulatory period		
Major project	**Status and expenditure for first regulatory period***	**Reason project deferred or stopped**
Mount Barker water supply investigation Investigate expansion of existing water supply network to facilitate projected growth and development in Mount Barker region. Supports State Government's 30-Year Plan for Greater Adelaide	Project staged and will be completed in phases in future regulatory periods in line with growth rates $2.1 million	• Initial concept design completed • Based on current market conditions and progress in developing rezoned land, networks will be augmented based on rate of development
Kingscote water supply treated storage Maintain water supply to Kingscote community and surrounding districts by installing treated water storage	Project no longer required	• Additional network capacity was identified as part of initial due diligence • Pipework elements necessary to utilise that capacity were delivered as part of the Kingscote upgrade water supply network project

*Actual expenditure where project complete and forecast expenditure where project is underway or yet to commence.

5.2.2 We are delivering capital efficiently in the first regulatory period

We aim to deliver fit for purpose capital solutions efficiently and effectively. This means we continually review the need for proposed investments and the best delivery method to reduce the investment required.

ESCOSA's first determination provided a water capital expenditure allowance of $620 million including an efficiency target of 1% to deliver capital. We are forecasting to achieve those efficiencies plus additional savings of $117.3 million. Lower capital expenditure without compromised service levels is good news for customers because it helps to lower customer prices. Figure 5.1 shows how these forecast savings are expected to occur across the first regulatory period.

Figure 5.1 Water capital expenditure for first regulatory period

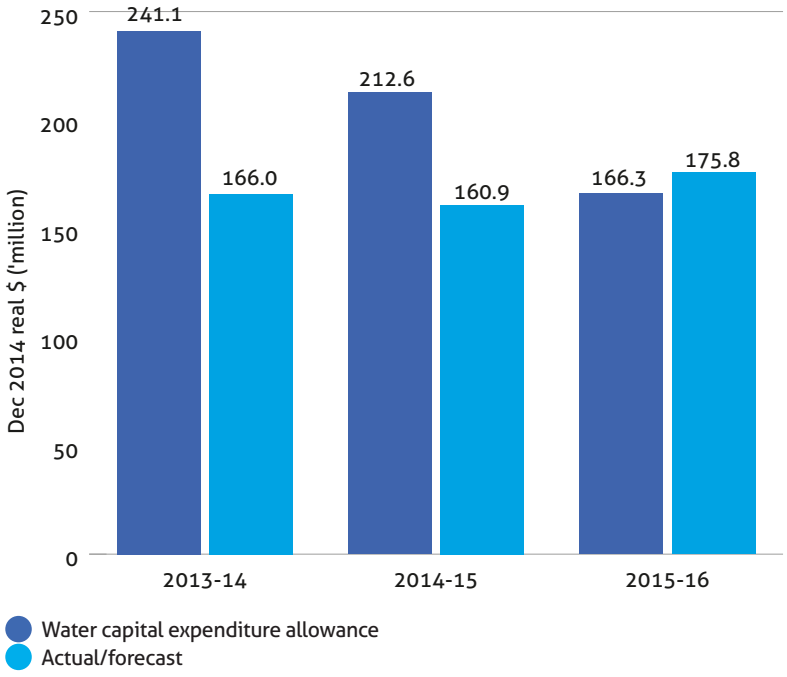


Figure 5.2 shows the forecast savings in water capital expenditure by expenditure category. External obligations are the largest area of saving across the first regulatory period.

Figure 5.3 and Figure 5.4 show how the asset programs and key major projects contribute to the savings forecast. We analyse these results later in this section.

Figure 5.2 Water capital expenditure over the first regulatory period

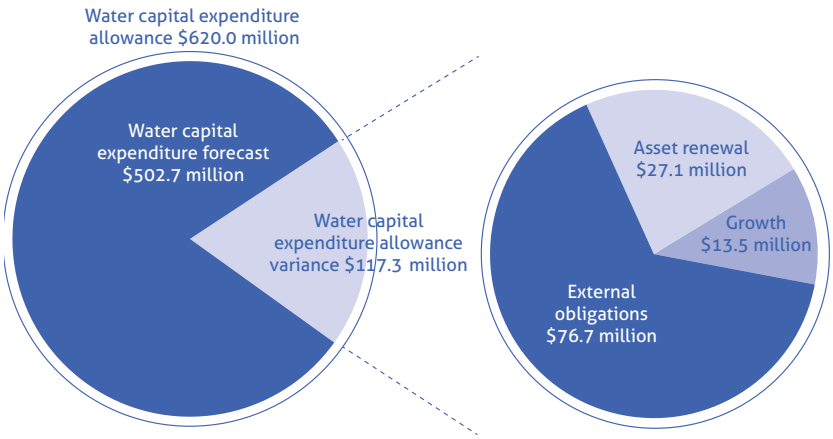


Figure 5.3 Forecast savings in water capital expenditure for the first regulatory period by asset program

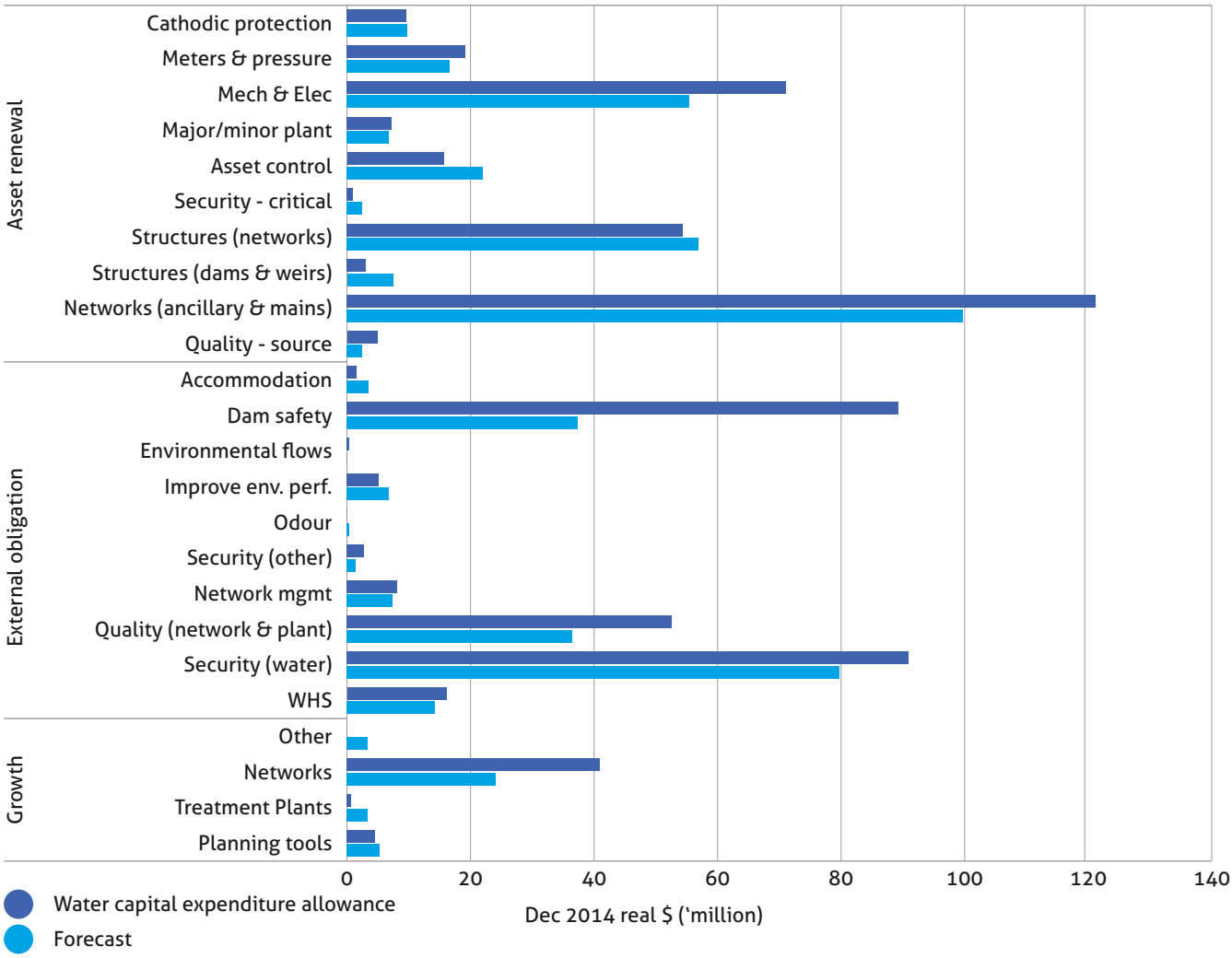


Figure 5.4 Forecast savings in water capital expenditure for the first regulatory period for 10 highest value water projects

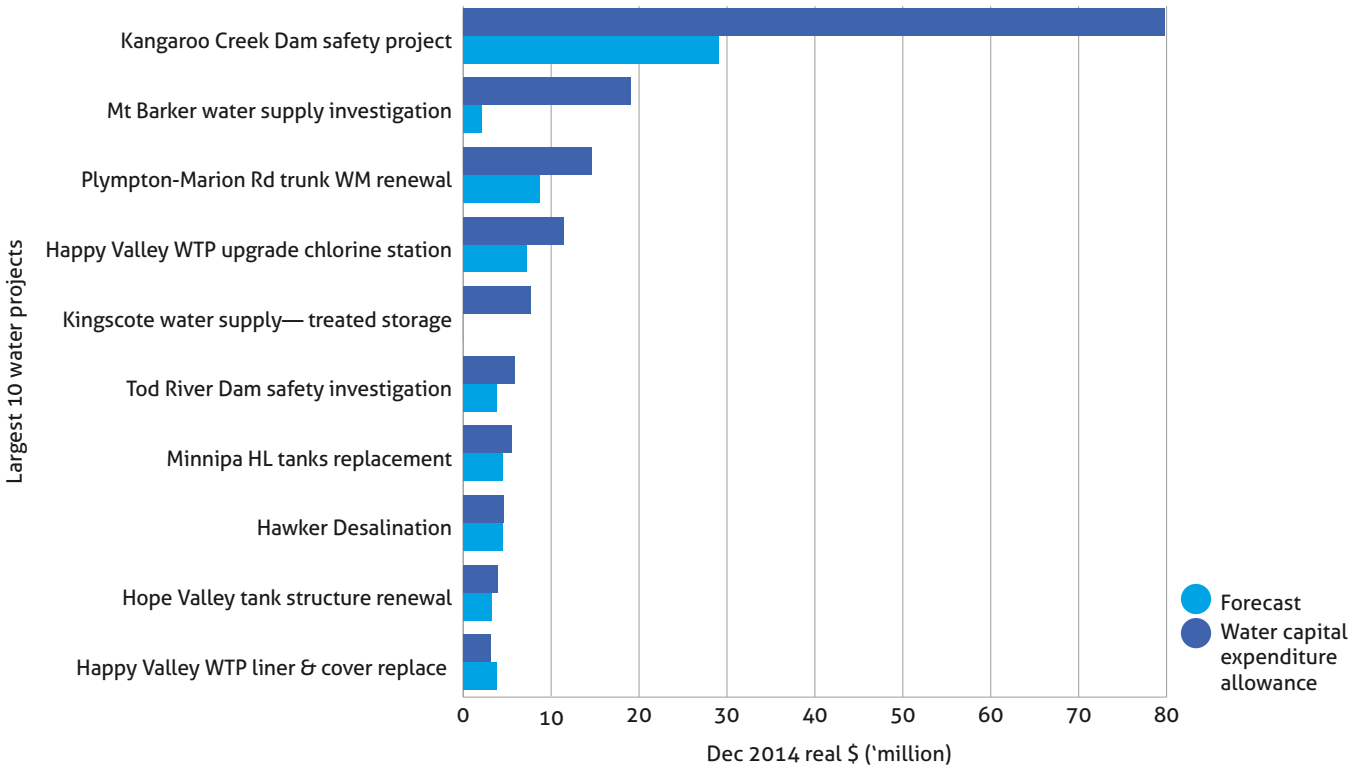


Table 5.4 summarises the savings against the water capital expenditure allowance in the first regulatory period. We will save:

- $102.1 million through prudent deferral of projects while still maintaining our levels of service to customers
- $12.3 million through improved capital delivery
- $8.5 million from more favourable contract rates arising from a downturn in the construction market.

These savings are partly offset by reprioritising $5.6 million of water capital to respond to challenges arising during the first regulatory period. We explore each reason later in this section.

Table 5.4 How we will achieve the savings

	Forecast savings (Dec 2014 real $ 'million)	Forecast savings (%)
First determination water capital expenditure allowance	**620.0***	
Prudent capital planning (deferral)		
Major project (dam safety)	-51.1	-8.2
Renewals	-33.0	-5.3
Growth	-18.0	-2.9
Efficiency	-12.3	-2.0
Market movement**	-8.5	-1.4
Reprioritisation***	5.6	0.9
Forecast savings	**117.3**	
Forecast water capital expenditure	**502.7**	

*Includes 1% efficiency savings as required in the first determination.
**Based on external market escalation of -1.7% per year on the capital expenditure forecast.
***Represents expenditure adjustments to meet challenges arising through the first regulatory period.

5.2.2.1 Major project deferral (dam safety)

Major project deferral is a timing change arising when a project needs additional planning (such as further design and scope investigation) to ensure it meets customer outcomes. The Kangaroo Creek Dam safety project was our largest deferral of expenditure to the second regulatory period (Figure 5.4). This deferral was also reflected in the savings on the dam safety asset program (Figure 5.3). This project needs further technical investigation to review safety issues and construction risks identified as part of the dam safety risk assessment. Our design solution will capture all present and future risks (including flood risks during construction) and will apply value engineering to achieve the lowest cost solution. Our plans for the design solution include regular review by experts specialising in dam structures and geological and hydraulic engineering (from University of New South Wales and GHD).

In the interim, we are managing any immediate safety risks by inspecting the dam wall structures and embankment daily, in accordance with the Australian National Committee on Large Dams Incorporated guidelines. These inspections are being undertaken from existing resources.

5.2.2.2 Renewals deferral

We challenged the need for renewing and refurbishing our assets throughout the first regulatory period. We increased asset condition assessments and established internal governance processes to challenge project requirements, scope and project benefits to customers. Savings from these improved processes are shown in Figure 5.3 and include:

- $9.2 million on mechanical and electrical assets for our treatment plants and networks
- $16.2 million on network assets for our reticulation mains
- $5.4 million on structures across major pipelines.

5.2.2.3 Growth deferral

Demand for water services is not growing as quickly as expected in some locations. We forecast to underspend $18 million on the Mount Barker water supply project due to slower than forecast housing development (Figure 5.4). We expect demand in Mount Barker to grow but we now plan to augment the network in phases in line with development.

5.2.2.4 Efficiency

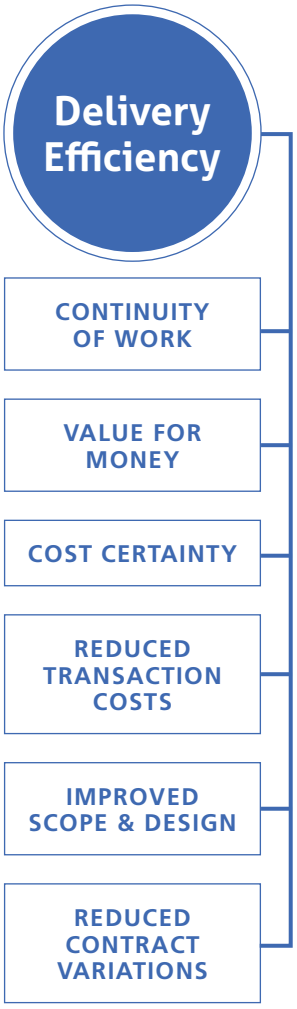
We forecast capital delivery efficiency savings of $12.3 million for water capital expenditure in the first regulatory period. Our enhanced capital delivery framework has been central to achieving these efficiencies. Key enhancements include our efficient capital delivery initiative, category management and estimating improvements.

Our **efficient capital delivery initiative** reduces costs by streamlining delivery methods and optimising contractor engagement. As part of this initiative we:

- Established effective capital delivery strategies by grouping projects so as to leverage synergies, exploit common delivery needs and promote smarter design and contracting
- Developed and implemented a comprehensive program management method and aligned stakeholders with this approach
- Improved and integrated the estimating function for capital planning and delivery
- Developed enabling capability in people, culture and technology.

We are trialling our improved approach across 4 program categories (strategically grouped projects) to test the governance arrangements and efficiency savings. Figure 5.5 shows the financial and non-financial benefits associated with the efficient capital delivery initiative.

Figure 5.5 Financial and non-financial benefits of the efficient capital delivery initiative



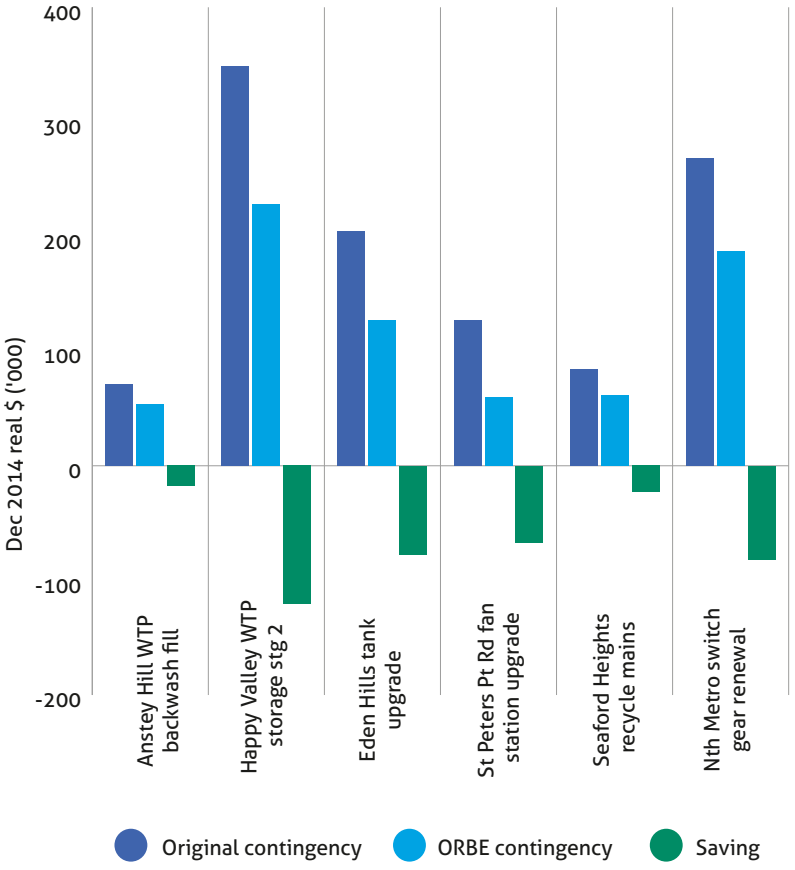
Category management is a strategic procurement approach used to achieve end-to-end management of the supply chain to drive innovation and commercial benefits. We started implementing category management during the first regulatory period. This approach is achieving savings through:

- Applying more developed cost models and price reviews
- Initiating supplier agreements that ensure best price outcome for capital projects
- Adopting single contact points for expert knowledge of the market, suppliers and construction options
- Strategically bundling projects and allocating work based on contractor performance and value for money
- Reducing cost (from leakage/ rationalisation of suppliers) by channelling upcoming contracts through established arrangements.

We also have a more rigorous approach to estimating project costs and contingencies. These **estimating improvements** contributed to efficiency savings in the first regulatory period through:

- Improved governance and revised estimating guidelines to deliver a consistent and measurable pricing framework. The revised guidelines reflect recommendations from ESCOSA's first determination and ESCOSA's recommendations in the Framework and Approach for the second determination
- Enhanced cost databases to accurately define scope and improved forecasting earlier in the project lifecycle
- Improved cost breakdown structures for all projects to support estimates for future capital projects
- Implementing opportunity and risk based estimating (ORBE) so the contingency for each major project/ asset program is based on potential/ known risks and opportunities rather than a predetermined amount. We forecast significant savings using ORBE for selected water projects in the first regulatory period (Figure 5.6).

Figure 5.6 Contingency saving from using ORBE – selected water projects



5.2.2.5 Market movements

PricewaterhouseCoopers estimates a real decrease of approximately 1.7% per year on the water capital expenditure allowance set in the first determination following more favourable contract rates arising from a downturn in the construction market. This result equates to forecast savings of $8.5 million in the first regulatory period. Attachment E contains further detail about PricewaterhouseCoopers analysis of the key cost drivers for our capital expenditure program.

5.2.2.6 Reprioritisation to meet new challenges

Providing water services to customers and managing an extensive network of water infrastructure presents challenges that are not always foreseeable when we submit our proposals to ESCOSA. During a regulatory period we reprioritise investment to ensure we respond to these challenges. We apply a robust reprioritisation process involving detailed project justification and independent management review to ensure we only invest when it is prudent. This approach means we only invest at an efficient level and we do not adversely affect customer outcomes in other areas.

We are reprioritising funds and savings to other projects in the first regulatory period. Table 5.4 shows we will reprioritise $5.6 million to meet infrastructure challenges and invest in priority areas including:

- Rehabilitation of treatment plant structures based on condition assessment that showed these assets reaching the end of their lives. This increase would have been larger if we had not applied improved asset management practices challenging the need to replace assets
- Allocation of funds to purchase River Murray water licences as a means of providing greater water security to regional areas
- Growth requirements at our treatment plants and for water extensions and capital subdivision repayments for water and recycled water services.

We consider these investments to be prudent. They were driven by enhanced information from physically examining our assets and by improving our infrastructure planning over the past 2 years to deliver required business/customer outcomes. We will deliver these investments efficiently.

5.3 How did we develop our water capital proposal?

As an asset intensive organisation, our asset management approach needs to ensure efficient and effective outcomes so customers receive the services they require at the lowest possible price.

5.3.1 We have enhanced our asset management framework

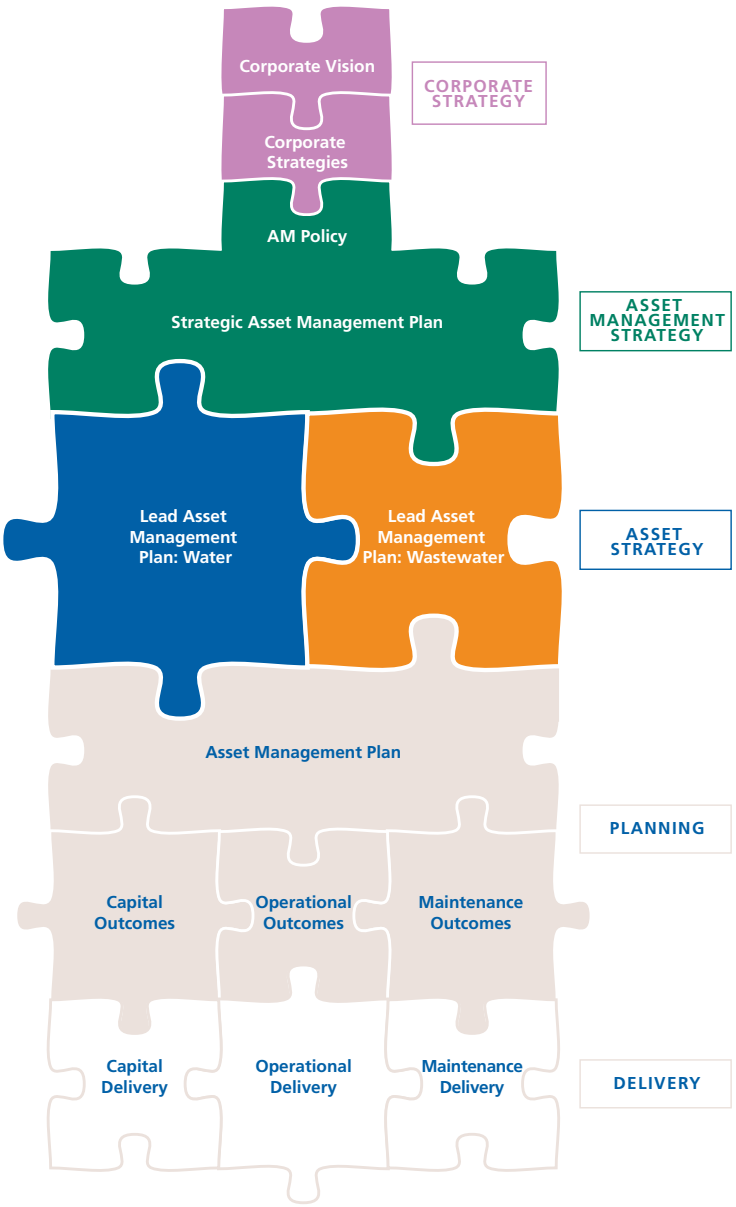
Consistent with mature company governance, our asset management framework evolved throughout the first regulatory period. Specifically, we updated the asset management framework to reflect the international standard for asset management (ISO55000 series) published in late 2014. Our asset management framework, illustrated in Figure 5.7, has line of sight between our corporate vision and strategy (attachment A), our overarching asset management policy (attachment D) and our strategic and lead asset management plans (provided to ESCOSA). This line of sight is prominent in all documents we use to justify capital expenditure for the second regulatory period.

Importantly, our enhanced asset management framework aligns proposed capital investment to primary investment drivers. This alignment means we understand how our investment in water infrastructure benefits our customers, our workers, our owner or the community. We also understand how the proposed investment helps deliver our strategic direction as each investment driver contributes to the key performance outcomes outlined in our *Overview of Strategy 2016-20* (attachment A). Table 5.5 lists the investment drivers for water infrastructure.

Each investment driver has a target level of performance for the second regulatory period as detailed in Table 5.5. We set the target levels of performance after considering the expectations of our customers and stakeholders and based on our performance against business key performance indicators (KPIs) in the first regulatory period. If our performance at June 2014:

- Met or exceeded the target for the first regulatory period we have adopted the new level of performance as our target for the second regulatory period. The only exception is for total overflows because this performance is heavily influenced by weather. We targeted continuous improvement for this target instead
- Did not meet the target for the first regulatory period, we either continued with the existing target for the second regulatory period (e.g. incidents per year) or we targeted continuous improvement in line with our strategic direction (e.g. serious injury frequency rate).

Figure 5.7 Our asset management framework*

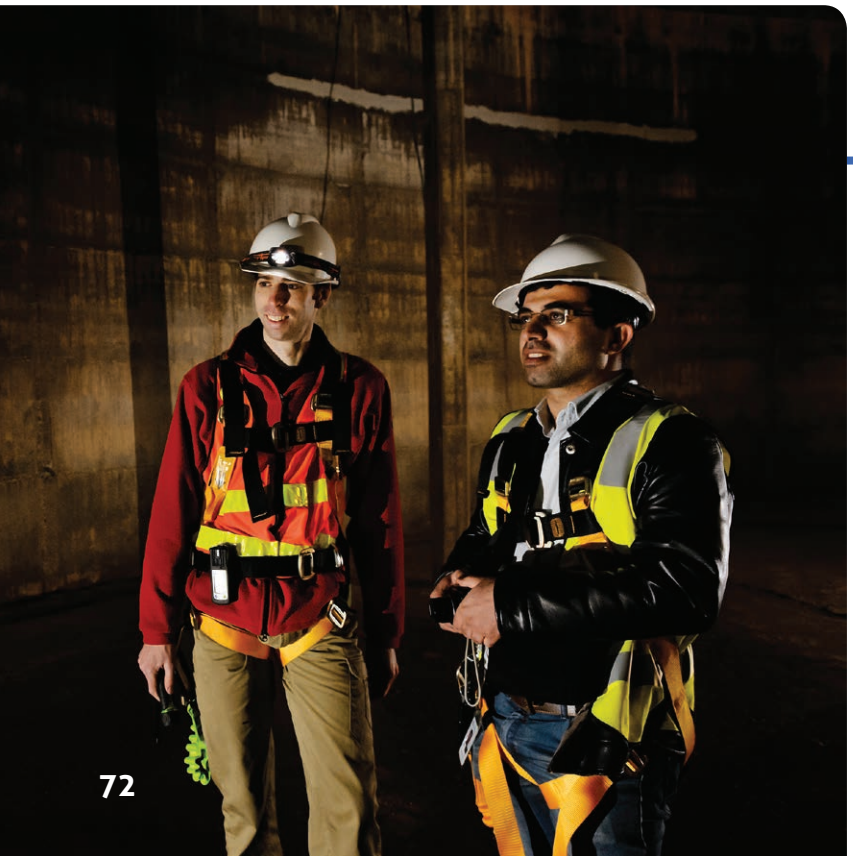


*Documents supporting the asset management framework are available for ESCOSA as part of the second determination

Table 5.5 Investment drivers and target performance

Investment driver	First regulatory period		Second regulatory period
	Business KPIs	Actual performance at June 2014	Target level of performance
Safety for the community	Zero serious injuries to members of the community	0	No change to target
Safety for our workers	Serious injury frequency rate <8.6	11.44	Serious injury frequency rate <5 by 2020
Reliability for our customers	<2,300 properties with 3+ interruptions	1,900	<1,900 properties with 3+interruptions
Quality for our customers	Compliance with Australian Drinking Water Guidelines: 100% metro 99.8% country	 99.81% 99.85%	No change to target
	Incidents per year: <2 priority type 1 <35 type 1 <60 type 2	 3 34 87	No change to target
Financial outcomes for our customers/owner	Provide long term financial benefit	100%	No change to target

As part of our preparation for the second regulatory period we also increased the number of asset condition assessments we undertook to ensure we are as informed as possible about the inherent risk of our assets. We used this information to compile our strategic and lead asset management plans which have driven our proposed investments.



We propose to invest $675 million in water infrastructure over the second regulatory period. This includes a commitment to achieve 5% capital delivery efficiency to reduce costs to customers.

5.3.2 We applied a robust planning and governance process

We developed our proposal for water capital expenditure via an extensive business planning and consultation process to align to our strategic priorities, including addressing the feedback from Your Say and stakeholder engagement. We also applied a comprehensive governance process to address competing priorities and to ensure our proposals are prudent and efficient.

Specifically we:

- Consolidated project, program and portfolio information to understand the current profile of investment and the current performance of our infrastructure
- Identified gaps between current asset performance and medium and long term requirements
- Developed a water technical capital plan to drive future performance of our infrastructure, which included management review and prioritisation to remove investments that could not pass prudency and efficiency tests
- Determined a capital delivery efficiency target for the second regulatory period to arrive at our water capital proposal.

Using this process, we consider our water capital proposal for the second regulatory period is:

- Prudent, containing only essential investment to deliver the required levels of service at an acceptable level of risk
- Efficient proposal based on lowest cost solutions, efficient costs and including a proposed efficiency target
- Aligned with customer and stakeholder expectations based on our more detailed understanding of their needs.

We are confident:

- The 25 year investment profile balances short term and long term planning horizons to avoid unnecessary spikes in expenditure with potential price shocks
- Our proposal is sufficient to avoid unacceptable impacts on levels of service, risk or lifecycle costs during the period and beyond
- The risks and consequences of projects not proceeding are understood given the significant number of condition assessments we undertook across all asset types
- Our customers, our workers, our owner and the broader community will receive clearly defined benefits from our proposed investment.

5.4 Our proposal for the second regulatory period

5.4.1 The water technical capital plan

The water technical capital plan is the level of investment we consider necessary to meet the performance targets outlined in Table 5.5. It is the level of investment we require to deliver benefits to our customers, our workers, our owner and the community. The water technical capital plan does not include our proposed capital delivery efficiency (see section 5.4.3).

We propose a water technical capital plan of $703.8 million for the second regulatory period. On average, this figure is 15% lower per year than the water capital expenditure allowance set in the first determination. Our improved asset management approach has been central to achieving lower capital spending while still providing the necessary infrastructure to manage risk and maintain levels of service to customers.

Table 5.6 compares the proposed water technical capital plan by investment driver to the water capital expenditure allowance for the first regulatory period. The comparison is based on annual averages given the different length of the regulatory periods being compared (3 years compared with 4 years). Of note Table 5.6 shows:

- The largest reduction is $22.7 million (annual average) to deliver reliable water services to our customers. This reduction will primarily be achieved through an enhanced approach to asset condition assessment
- A 26.1% reduction in average expenditure to deliver safety for the community. This is due to a higher level of expenditure in the first regulatory period to deliver large dam safety projects
- An increased level of capital expenditure to ensure ongoing safety for our workers
- Table 5.6 also shows our proposed capital delivery efficiency (discussed in more detail at section 5.4.3) and the capital costs associated with the ADP reverse osmosis membranes (discussed in more detail in section 5.4.1.6).

Table 5.6 Comparison of capital expenditure across regulatory periods (Dec 2014 real $'million)

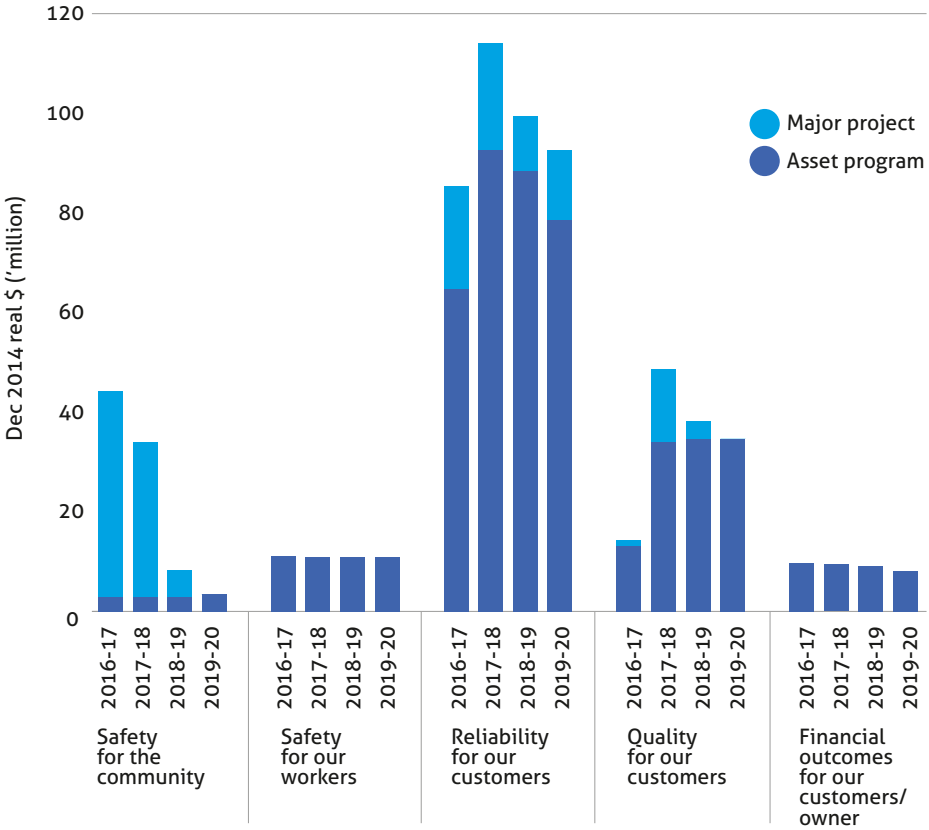
Investment driver	First regulatory period		Second regulatory period		Annual average variance
	Capital expenditure allowance (3 years)	Annual average	Proposed capital expenditure (4 years)	Annual average	
Safety for the community	92.0	30.7	90.6	22.7	-26.1%
Safety for our workers	17.9	5.9	44.5	11.1	88.1%
Reliability for our customers	364.2	121.4	394.9	98.7	-18.7%
Quality for our customers	107.0	35.7	137.1	34.3	-3.9%
Financial outcomes for our customers/owner	38.9	13.0	36.7	9.2	-29.2%
Total (Technical Capital Plan)	**620.0**	**206.7**	**703.8**	**176.0**	**-14.9%**
Less capital delivery efficiency (approximately 5%)*			-34.7	-8.7	
Capitalisation of desalination reverse osmosis membranes			6.3	1.6	
Proposed investment (water capital expenditure)	**620.0**	**206.7**	**675.4**	**168.9**	**-18.3%**

*Proposed efficiency has not been applied across investment drivers because we will determine how to achieve these efficiencies over the course of the second regulatory period.

Figure 5.8 summarises the proposed water capital expenditure for each year of the second regulatory period by investment driver. The figure shows how much of our proposed capital expenditure will be delivered as major projects and how much will be delivered through asset programs. Approximately 75% of the water technical capital plan is to provide reliable services and safe water to our customers, emphasising our strong customer focus.

Sections 5.4.1.1 to 5.4.1.5 provide more detailed analysis of the proposed capital expenditure. Consistent with ESCOSA's Framework and Approach, detailed business cases for projects greater than $4 million and summary information for asset programs have been made available to ESCOSA.

Figure 5.8 Summary of proposed investment for second regulatory period by investment driver



5.4.1.1 Safety for the community

Capital expenditure proposed for this investment driver relates primarily to maintaining the integrity of large dams to avoid the impact of a failure on the community. Dam failures can be catastrophic and cause damage to property, serious injury and death. We employ a range of risk mitigation strategies to ensure these incidents do not occur.

We propose to decrease investment in this driver compared with our capital expenditure allowance in the first regulatory period (Table 5.6). The primary reason for this decrease is the completion of dam safety projects in the first regulatory period. Although some projects, such as Kangaroo Creek, have been partially deferred into the second regulatory period this is still a reduction in expenditure. The partial deferral of the Kangaroo Creek dam safety upgrade ensures any dam safety solution captures all the issues of managing the flood risks through Adelaide during construction and to apply value engineering so the upgrade works achieve the lowest possible cost. We propose capital expenditure on this project of $54.8 million in the second regulatory period.

We will also conduct detailed investigations at Tod River, Baroota, Mount Bold and Hindmarsh Valley dams during the second regulatory period as part of the dam safety program. Table 5.7 summarises the key capital expenditure proposals for this investment driver.

Table 5.7 Safety for the community – key proposed investment in second regulatory period

Key major projects*	Details	Proposed investment (Dec 2014 real $)
Kangaroo Creek dam safety	Ensure the Kangaroo Creek dam meets the requirements of the Australian National Committee on Large Dams Incorporated guidelines	54.8 million
Key asset programs*	**Details**	**Proposed investment (Dec 2014 real $)**
Dam safety	Ensure our large dams meet the requirements of the Australian National Committee on Large Dams Incorporated guidelines	6.9 million

*Shows only the highest value major projects and asset programs for this investment driver.

5.4.1.2 Safety for our workers

We aim to provide a safe working environment for all of our employees because we take our work health and safety responsibilities seriously. We propose to invest $44.5 million on this investment driver over the second regulatory period which is 88.1% higher than the capital expenditure allowance for the first regulatory period (Table 5.6). This reflects a more proactive spend to meet our core value of 'safety above all else'. Our major focus, as shown in Table 5.8 is the workplace health and safety improvement asset program, which seeks to reduce safety risks by enhancing or renewing existing infrastructure to meet current safety standards. Examples of our investment in this area include replacement of ladders, railings and mesh walkways. We do not propose any major projects for this investment driver.

Table 5.8 Safety for our workers – key proposed investment in second regulatory period

Key asset program*	Details	Proposed investment (Dec 2014 real $)
Workplace health and safety improvement	Serious Injury Frequency Rate <5 by 2020	40.0 million

*Shows only the highest value asset program for this investment driver.

5.4.1.3 Reliability for our customers

Proposed expenditure against this investment driver represents our core business by ensuring we maintain a reliable water service to our customers at all times. Integral to achieving this investment driver is the replacement of ageing and unreliable assets. Figure 5.8 shows this investment driver as our most significant area of investment and highlights a significant portion of the proposed investment is for asset programs. Table 5.9 summarises the key capital expenditure proposals for this investment driver.

We propose to keep expenditure on this investment driver's asset programs relatively stable, for both the first regulatory period and for the longer term 25 year view. We propose stability despite the pressures of an ageing asset population. We will achieve it through improved asset management techniques, improved line of sight between our strategic key performance outcomes and our asset performance and an improved understanding of the relationships between capital and operating costs.

One exception to this expenditure profile is our investment in water network structures (steel and concrete water tanks). We propose an additional $21.4 million per year for this asset program to address the increasing risk of interruptions to water supply from water network structure asset failures. The first determination had an allowance of $4.7 million per year on average. For this asset program, asset condition assessments over the past 2 years identified a large number of tanks nearing the end of their useful lives and in poor condition. The asset condition assessments suggest such failures will become more frequent without increased investment.

Table 5.9 Reliability for our customers – key proposed investment in second regulatory period

Key major projects*	Details	Proposed investment (Dec 2014 real $)
Warooka and Point Turton water supply upgrade	Improve reliability of water supply by changing supply from bore fields to the River Murray water system	15.0 million
Mount Barker water supply	Provide safe, reliable drinking water supplies for Mount Barker by building a new trunk main to keep pace with the level of development	11.1 million
Hope Valley EL170 tank structure renewal	Reduce risk of supply interruptions by refurbishing a large tank at terminal storage to avoid structural failure	10.3 million
Key asset programs*	**Details**	**Proposed investment (Dec 2014 real $)**
Structures – water networks	Renew and replace elements of structures (e.g. concrete) to avoid failure and eventual loss of water supply	104.6 million
Water network – reticulation mains	Prioritise water mains renewal to avoid failure and resolve existing low pressure issues	83.5 million
Structures – major pipelines	Renew and replace elements of structures (e.g. concrete) to avoid failure and eventual loss of water supply	27.0 million
Mechanical and electrical – major pipelines	Renew and replace mechanical elements (e.g. pumps) and electrical equipment (e.g. switchboards) to avoid failure and eventual loss of water supply	26.6 million
Pressure management initiatives	Improve pressure related issues, including investment in pressure reducing values (which customers supported in Your Say)	13.4 million

*Shows only the highest value major projects and asset programs for this investment driver.

5.4.1.4 Quality for our customers

We operate within strict water quality standards regulated by the Department for Health and Ageing to provide safe water to our customers. We are required to comply with the Safe Drinking Water Act 2011, the Safe Drinking Water Regulations 2012 and the Australian Drinking Water Guidelines 2011.

We propose $137.1 million of water capital expenditure for this investment driver to ensure we maintain and, in some cases, improve the quality of water for our customers. This driver is our second highest driver over the second regulatory period (Figure 5.8). Over the second regulatory period we will:

- Improve aesthetics and reduce salinity in regional areas experiencing significant water quality issues (as supported by customers in Your Say)
- Protect source water assets to avoid contamination and other threats to the safety of our water supplies
- Protect water supplies by upgrading or renewing key water structures
- Comply with water quality requirements by renewing or upgrading water treatment plants.

Table 5.10 summarises the key capital expenditure proposals for this investment driver.

Table 5.10 Quality for our customers – key proposed investment in second regulatory period

Key major projects*	Details	Proposed investment (Dec 2014 real $)
Orroroo water quality improvement	Improve aesthetics and reduce salinity of water supply to Orroroo to meet Australian Drinking Water Guidelines.	12.6 million
Morgan Water Treatment Plant balancing storage	Replace a water storage tank in poor condition to maintain water quality at the Morgan Water Treatment Plant	7.0 million
Key asset programs*	**Details**	**Proposed investment (Dec 2014 real $)**
Water quality – water treatment plant	Upgrade existing processes (e.g. improved chemical dosing) or installing new process elements (e.g. filtration) to improve quality at water treatment plants	35.1 million
Structures – treatment plants (water)	Renew and replace elements of structures (e.g. concrete) to avoid failure and eventual loss of water quality	22.0 million
Mechanical and electrical – water treatment plants	Renew and replace mechanical elements (e.g. pumps) and electrical equipment (e.g. switchboards) to avoid failure and eventual loss of water quality	24.9 million
ADP ultra filtration replacement	Replace filtration equipment in line with maintenance plans for the ADP	12.8 million
Water quality – network	Prioritise installations of dosing and booster stations to increase chlorine residuals to improve water quality	10.5 million

*Shows only the highest value major projects and asset programs for this investment driver.

We considered our future challenges when assessing capital expenditure for this investment driver. The Australian Drinking Water Guidelines will be updated to include new requirements for Health Based Targets in 2016. The Health Based Targets approach to microbial risk helps water providers assess source water risk and guides us on necessary treatment processes and performance requirements. We have not proposed increased expenditure for the second regulatory period but provided for this in our longer term plans (section 5.4.2).

5.4.1.5 Financial outcomes for our customers/owner

We propose expenditure for this investment driver of $36.7 million during the second regulatory period, which is 29.2% lower than the annual average expenditure allowance in the first regulatory period (Table 5.6). We are able to propose lower investment by either deferring investment without impacting on levels of service (using our enhanced approach to asset condition assessments) or through our ability to better align projects with the primary beneficiary (using our improved investment driver framework).

We propose 2 key asset programs (Table 5.11). Both programs favour proactive renewal of infrastructure to avoid failure and reduce the risk of significant expenditure increases in the future. We want to optimise lifecycle by rehabilitating and upgrading critical assets when it is cost effective and to avoid significant cost increases when infrastructure fails. We calculate the net present value of various options and, unless there are exceptional circumstances, we proceed with the lowest or least negative value option. Lower cost for us results in lower prices for customers.

We propose no major projects for this investment driver.

Table 5.11 Financial outcomes for our customers/owner – key proposed investment in second regulatory period

Key asset programs*	Details	Proposed investment (Dec 2014 real $)
Customer meter fleet management	Renew water meters to ensure all customers pay for what they receive	13.2 million
Cathodic protection system management	Protect our steel pipes so they last as long as economically practicable	11.6 million

*Shows only the highest value asset programs for this investment driver.

5.4.1.6 Capitalisation of desalination reverse osmosis membranes

The ADP has been operating in minimum production mode post completion of the proving period at the end of December 2014. We propose to continue to operate the ADP in minimum production mode for the second regulatory period. In the first determination, ESCOSA classified the ongoing program to replace the reverse osmosis membranes as capital investment, rather than operating expenditure. We are proposing to adopt the same approach of capitalising this expenditure for the second regulatory period. The proposed replacement cost of the reverse osmosis membranes is $6.3 million for the second regulatory period.

5.4.2 Long term profile of water infrastructure capital investment

Our water infrastructure has a relatively long life, so we need to consider its long term profile to balance short and long term imperatives. Table 5.12 shows the 25 year capital expenditure profile by 4 year regulatory periods and Figure 5.9 shows the annual profile and comparison against the first regulatory period.

Table 5.12 25 year capital expenditure profile, by investment driver and regulatory period (Dec 2014 real $'million)*

Investment drivers	2016-20	2020-24	2024-28	2028-32	2032-36	2036-40
Safety for the community	90.6	107.1	70.2	37.8	24.8	23.8
Safety for our workers	44.5	48.0	50.0	50.0	50.0	50.0
Reliability for our customers	394.9	338.1	379.3	408.7	453.4	524.7
Quality for our customers	137.1	188.3	191.0	201.6	174.9	187.9
Financial outcomes for our customers/owner	36.7	24.4	24.8	24.6	24.8	24.6
Total	****703.8**	**705.9**	**715.3**	**722.7**	**727.9**	**811.0**

*First regulatory period is not shown because it was a 3 year rather than 4 year period. Figure 5.9 compares the longer term plan against the first regulatory period.
**For comparative purposes in this table, the investment does not include 5% capital delivery efficiency saving or capitalisation of the desalination membranes.

We plan to keep capital expenditure as low as possible until around 2035. We expect water capital expenditure to grow by around 1% per regulatory period, which is less than our predicted growth in customer numbers. This relatively flat profile will help to meet our customers' desire for affordability while maintaining our level of service. We can only achieve this outcome by continuing to improve our asset management practices. Such continuous improvement addresses an increasing level of replacement as higher proportions of assets come to the end of their useful lives and responds to increasing stakeholder expectations of improved standards of service. Beyond 2035 we expect investment in reliability for our customers will grow as an increasing proportion of our assets near the end of their useful lives.

The quality for our customers investment driver is a notable exception to our long term plan reflecting the Health Based Targets added to the Australian Drinking Water Guidelines. We need increased capital expenditure in the regulatory period 2020-24 and beyond to meet those targets.

Figure 5.9 shows a generally flat long term trend for future water capital expenditure. Capital expenditure by year varies due to timing of the construction works for major projects. The increased capital expenditure in 2017-18 is an example where a number of major projects commence.

Figure 5.9 25 year expenditure profile by investment driver and year

5.4.3 How are we going to deliver the capital plan efficiently?

We focus on the affordability of prices for customers in the second regulatory period and so continue improving capital delivery. Our water technical capital plan already reflects the efficiency savings of the first regulatory period. We propose additional savings of approximately 5% ($34.7 million) of the water technical capital plan for the second regulatory period (Table 5.1). We consider this savings proposal to be a stretch target, but it is in the best interests of our customers because it will help keep prices lower.

We will achieve the proposed savings target by:

- Further implementing our enhanced capital delivery framework discussed in section 5.2.2 (i.e. efficient capital delivery initiative, category management and estimating improvements)
- Drawing on our relationship with Kellogg Brown and Root to access leading capital delivery practices from around the world. We are trialling innovative continuous improvement practices within the metropolitan capital delivery environment. If they are beneficial, we will apply them to other parts of our capital delivery program during the second regulatory period
- Introducing a formal innovation process to promote collaboration and idea generation for implementation. We will capture ideas and benefits across 5 categories (people, schedule, cost benefits, reputation benefits and transferability).

Over the longer term we are working towards a 'one team' leadership vision for capital delivery. This vision aims to align our 4 capital delivery models so we can:

- Lead and manage our overall performance more effectively by aligning delivery strategies, governance, processes, systems and skills
- Collaborate throughout the asset lifecycle and fully use talent where it adds most value
- Leverage supply chain capability and innovation.

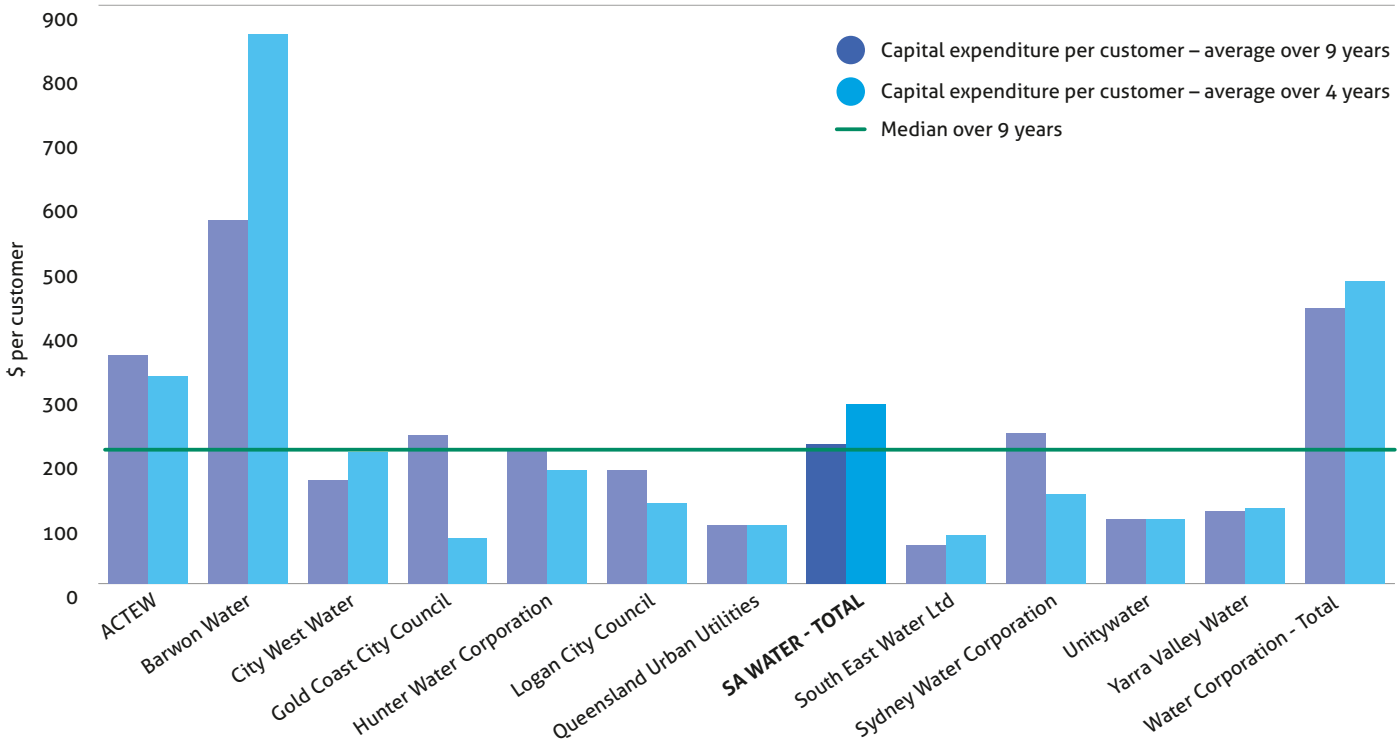
We have already started working towards this vision and will have fully developed the enhanced delivery approach by late in the second regulatory period. This timing gives us the best capability to plan for the third regulatory period. In the interim we are applying detailed change management processes so we can achieve our proposed efficiency savings during the second regulatory period.

5.4.4 Benchmarking – how our capital proposal compares

To demonstrate our capital expenditure is both prudent and efficient, KPMG benchmarked our performance against our peer utilities interstate. The report[4], contained in attachment F, uses the publicly available 2013-14 National Performance Report (NPR)[5] data and assesses comparative capital expenditure by number of customers.

Capital expenditure is difficult to compare across utilities. It can vary significantly by year and there are many factors (such as geography, customer density and source water quality) that affect the level of investment. KPMG analysed expenditure over 4 and 9 year periods to address the variability of investment across years. KPMG concluded our level of investment is comparatively efficient given our large geographical coverage and low customer density. Our investment in water infrastructure was around the mid point of peer utilities, based on the 9 year average (Figure 5.10). For the 5 year period, our investment in water infrastructure was marginally above the average of peer utilities, driven largely by our investment in water security.

Figure 5.10 Average adjusted water capital expenditure per customer



This benchmarking compares our investment in infrastructure favourably with our interstate peers, but we did not rely on this analysis when assessing the prudence and efficiency of our capital expenditure proposal. As discussed earlier in this chapter, we assessed each element of our expenditure profile to ensure the expenditure is necessary, provides customer benefits and we deliver the benefits in the most efficient manner.

4 KPMG, *SA Water NPR cost benchmarking study*, June 2015.
5 The NPR is compiled by the Bureau of Meteorology based on submissions from responding utilities.

5.5 Summary

Our proposed water capital investment aligns with our strategic objectives and benefits our customers, our workers, our owner and the community. We propose to invest $675.4 million in water infrastructure over the second regulatory period. Our investment proposal includes a savings commitment of approximately 5% in capital delivery costs. We will achieve these savings without compromising the planned outcomes of our water investment. Our proposed water capital investment forms part of the capital expenditure used to calculate the allowable water revenue in chapter 7.

Chapter 6
Operating expenditure

KEY POINTS

We implemented significant efficiencies in the first regulatory period and as a result are forecasting to spend $58 million less than the water operating expenditure allowance set in the first determination. We still expect to perform well against our service standards.

We propose to spend $1,307 million for the 4 years of the second regulatory period to operate and maintain our water infrastructure and deliver water services to our customers.

While our operating expenditure is already efficient compared with our peers, our proposal includes an efficiency target of 1% of base water operating expenditure each year of the second regulatory period, growing to 4% by 2019-20.

Our proposed operating expenditure includes $43 million in unavoidable operating expenditure increases – primarily external requirements, cost escalation, network growth and investment in technology to reduce future operating costs.

We propose to operate the Adelaide Desalination Plant in minimum production mode in the second regulatory period. That mode provides the best long term value to customers, improves operational resilience and risk management capability, delivers greater water security to customers and avoids operational difficulties and costs of re-committing the plant after an extended shutdown.

6.1 Our proposal

We significantly transformed our business during the first regulatory period to reduce our cost base, exceeding the efficiency targets for that period. We built on this efficient cost base to produce our operating expenditure proposal for the second regulatory period. Our proposal of $1,307 million across the second regulatory period consists of the efficient base year costs (our usual operating costs) plus new and/or unavoidable requirements we will encounter in the period and a 1% efficiency target per year. These are set out in Table 6.1. The new requirements are explained further in section 6.4.1.

Table 6.1 Water operating expenditure proposal (Dec 2014 real $'million)*

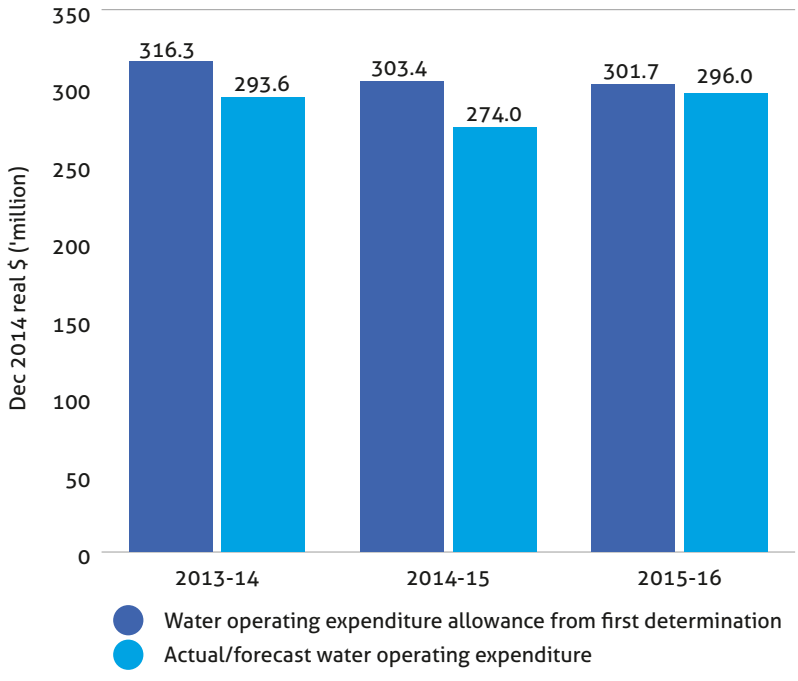
	Base year**	2016-17	2017-18	2018-19	2019-20
Efficient proposal***	325.7	318.7	318.1	314.8	312.2
New expenditure requirements	-	8.9	10.5	11.8	12.2
Water operating expenditure proposal	325.7	327.6	328.6	326.6	324.4

*Presented using the cost allocation method for the second regulatory period.
**The base year is the 2014-15 water operating cost forecast (at December 2014) presented under the cost allocation method for the second regulatory period and normalised to include $28.8 million of Adelaide Desalination Plant (ADP) operating costs which were capitalised during the proving period. Other sections of our proposal refer to the 2014-15 water operating cost forecast to analyse performance during the first regulatory period. In these cases, the forecast is presented under the cost allocation method used for the first regulatory period and the costs have not been normalised for ADP operating costs.
***Includes an efficiency reduction of 1% per year of total water costs. Annual operating costs vary due to operating costs associated with the ADP as discussed in section 6.4.2.

6.2 How are we performing in the first regulatory period?

The first determination set annual water operating expenditure allowances, including cumulative annual efficiency targets. We forecast to spend less than the allowance in each year of the first regulatory period as shown in Figure 6.1.

Figure 6.1 Operating expenditure against allowances from the first determination*



*Presented under the cost allocation method used for the first regulatory period.

Figure 6.1 gives the impression of water operating expenditure increasing from 2014-15 to 2015-16 but this is due to the regulatory treatment of the Adelaide Desalination Plant (ADP) operating costs during the plant's proving period. ESCOSA treats these costs as capital expenditure. This treatment lowers water operating costs for regulatory purposes by $37.8 million in 2013-14 and $28.8 million in 2014-15, compared with the accounting treatment of operating costs. This treatment applies only to the proving period, which is why operating expenditure increases in 2015-16. We will treat any ADP operating costs outside the proving period as operating costs.

Table 6.2 shows the cumulative efficiency targets set in the first determination and the efficiencies we expect to deliver in water operating expenditure over the first regulatory period. We forecast to achieve an additional $57.7 million of savings above the targets set by ESCOSA. We also forecast to achieve the savings earlier than required, while continuing to perform well against our service standards. Chapter 3 details our performance against service standards in the first regulatory period.

Table 6.2 Operating expenditure cumulative efficiency target applied by ESCOSA in first determination*

	2013-14	2014-15	2015-16	Total
Cumulative efficiency target	1.00%	2.98%	4.92%	
Cumulative efficiency target for water operating expenditure (Dec 2014 real $'million)	3.2	9.4	15.6	28.2
Actual/forecast water operating expenditure efficiencies (Dec 2014 real $'million)	25.9	38.8	21.2	85.9

*ESCOSA's publication of SA Water's water and sewerage revenues 2013-14 – 2015-16, Final determination statement of reasons, May 2013, p.133.

Achieving additional savings, and achieving them early, has not been easy. We did so only by transforming our business. This business change was driven not only by our regulatory efficiency targets but also in response to customers' desire for lower prices. The magnitude of our efficiencies was also driven by the South Australian Government's direction to achieve even higher efficiencies than set by ESCOSA in the first determination to drive down prices for customers.

To do this we:

- *Significantly restructured our business.* Our new organisational structure supports more efficient end-to-end process delivery. It has clear accountabilities for delivery across the entire process stream
- *Continued to improve processes and initial investment in information technology (IT) systems* to increase efficiency and enhance customer service outcomes
- *Optimised how we source water to minimise operating costs while increasing supply security and service reliability for customers.* We achieved these reductions via a custom built technology solution that integrates real time operational data from the network, which allows us to optimise supply to save energy and treatment costs. Global Water Intelligence recognised this solution as the 2015 Water Performance Initiative of the Year
- *Invested in critical infrastructure such as the ADP and North-South Interconnection System* to increase flexibility and resilience in the water supply network. These assets mean we can more efficiently manage and maintain assets without compromising service to our customers.

We are proud of the efficiencies we will achieve over the first regulatory period, and their ongoing benefit to customers. We know similar reductions will be more difficult to make in the future, because we've already changed contracts, processes and business structure. Accordingly, whilst we are committed to achieving further efficiencies in the second regulatory period, we forecast the efficiencies will be lower than those achieved in the first regulatory period.

6.3 Our approach to developing our proposal

Our operating expenditure proposal for the second regulatory period uses a base year method consistent with ESCOSA's requirements and normal regulatory practice. Our proposal represents incremental annual changes to the base year for efficiency savings and unavoidable cost increases.

We applied a robust process to develop our operating expenditure proposal with detailed input from our entire business. We:

- Put the customer at the forefront of all decision making and focused on reducing customer prices while maintaining or improving levels of service and maintaining appropriate risk levels
- Undertook bottom–up reviews of our entire business and long term financial plans to identify efficiencies. In particular, we implemented internal governance, subjecting each change proposal to management review and prioritisation. These reviews had the context of ensuring our proposal provides value to customers in the second regulatory period
- Developed our water operating expenditure proposal in conjunction with our capital expenditure and IT plans, because they are highly interrelated. We manage our assets to deliver the required service for optimal lifecycle costs at an acceptable level of risk. This approach involves selecting from operating levels and capital expenditure to deliver the lowest lifecycle cost for customers.

6.3.1. The base year

The base year is our December 2014 forecast for the 2014-15 financial year. We used a December 2014 forecast because it was the most current information available when we developed our water operating expenditure proposal.

It should be noted that the base year does not include costs to comply with the Federal Government's former carbon pricing mechanism, which was repealed from 1 July 2014. Although the operating expenditure allowances of the first determination provided for these compliance costs, the December 2014 forecast reflects the amended policy position.

Further, as noted in section 6.1, the 2014-15 water operating expenditure used for regulatory purposes is lower than expected as a result of the regulatory treatment applied to the ADP operating costs during the plant's proving period. The ADP is no longer in its proving period and for this reason the base year has been normalised to remove the impact of this regulatory adjustment. This results in an upward adjustment of $28.8 million. The normalised base year provides a more accurate view of our underlying operating costs in 2014-15. Further detail of how we propose to operate the ADP over the second regulatory period is provided in section 6.4.2.

We go into the second regulatory period with the benefit of a step change in our baseline efficiency as a result of our efforts in the first regulatory period (discussed in section 6.2). We consider the water operating expenditure base year to be efficient because it is below the level deemed efficient in the first determination and it compares favourably with our peers interstate.

To demonstrate our efficiency, KPMG benchmarked our operating costs, using 2013-14 National Performance Report (NPR)[1] data, against a peer group of Australian water utilities. KPMG's benchmarking study is included as attachment F[2]. Overall, KPMG concluded our performance is amongst the most efficient for a combined water and sewerage service provider. This result is despite being exposed to a number of unfavourable environmental conditions including our large geographic footprint, unfavourable topography and low rainfall[3]. KPMG also noted we improved our efficiency since the benchmarking study used to support our first regulatory proposal.

1 The NPR is compiled by the Bureau of Meteorology based on submissions from responding utilities.
2 KPMG, SA Water Corporation NPR cost Benchmarking Study, June 2015.
3 Ibid, p. 2.

Table 6.3 shows the peer group selected by KPMG. The selection was guided by the availability of public information and the need for the peer group to have broadly similar characteristics. The peer group are the water utilities defined as 'major' in the NPR. A notable exclusion from the peer group is Melbourne Water, which supplies bulk water to the 3 main Victorian retailers. The nature of its business (in not providing a retail service) means it is subject to different customer service requirements compared with other utilities. Melbourne Water, along with other bulk utilities, was not considered a comparable utility for benchmarking.

Table 6.3 Peer group for KPMG benchmarking of water operating costs (2013 – 2014)*

Utility	State	Desalination	Connections ('000)	Length of water mains (km)
SA Water (All)	South Australia	Yes	753	26,984
ACTEW	Australian Capital Territory	No	162	3,188
Barwon Water	Victoria	No	146	3,903
City West Water	Victoria	No	403	4,746
Gold Coast City Council	Queensland	No	235	3,427
Hunter Water Corporation	New South Wales	No	236	4,893
Logan City Council	Queensland	No	103	2,083
Queensland Urban Utilities	Queensland	No	562	9,028
South East Water	Victoria	No	696	9,432
Sydney Water Corporation	New South Wales	Yes	1,848	22,105
Unity Water	Queensland	No	289	5,763
Yarra Valley Water	Victoria	No	737	9,882
Water Corporation – Perth	Western Australia	Yes	787	13,859

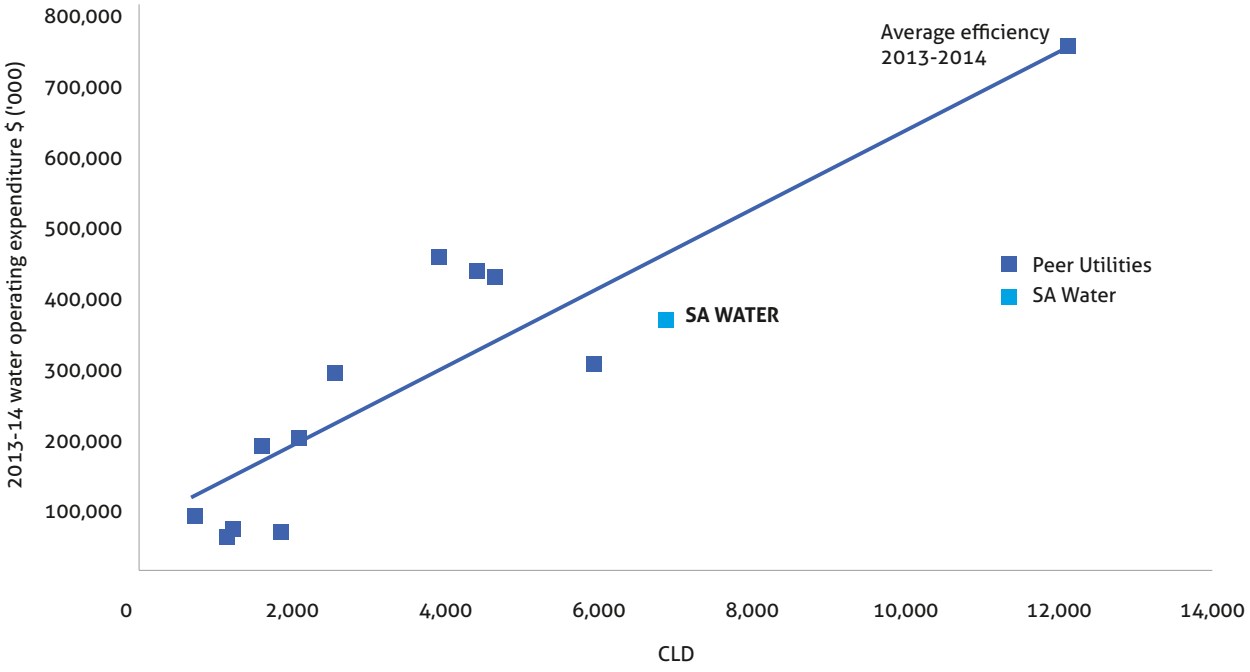
*KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015, p. 18.

Comparison of water utility performance is difficult given each utility's vastly different geographic nature and source water quality challenges. KPMG used a variety of benchmarking methods and considered a range of qualitative and quantitative cost drivers to assess relative efficiency.

We consider the most powerful benchmarking method to be the multi-dimensional efficiency analysis, which combines 3 key drivers of productivity – customers, length of pipe and demand (CLD)[4] – to assess relative efficiency. We have used KPMG's CLD analysis to discuss relative efficiency in our proposal, consistent with the method used in the first regulatory proposal. We do not feature KPMG's other benchmarking methods in our proposal, but they are included in attachment F.

KPMG's CLD graph for water operating costs is shown at Figure 6.2. It demonstrates we provide both our metropolitan and country water services more efficiently than the average of the peer group. This result means we have established ourselves as one of the most efficient water utility providers in Australia based on this measure.

Figure 6.2 CLD analysis of 2013-14 water operating cost*



*KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015 p. 49.

Throughout the second regulatory period, we expect continued improvement of our comparative efficiency. The rate of improvement will be more modest given the improved efficiency already incorporated in our base year. Given our comparative performance against the peer group, we consider the application of catch-up efficiencies in the second regulatory period would be inappropriate.

4 CLD analysis is a multi-dimensional efficiency analysis using 3 compounding input parameters considered to be key cost drivers of the business: Customer number (C), Length of Pipe (L) & Demand (D). CLD is calculated using the formula CLD = $C^{0.5}$ x $L^{0.3}$ X $D^{0.2}$.

6.4 Our proposal for the second regulatory period

Delivering more affordable water prices for customers is a key driver of our water operating expenditure proposal. Table 6.4 details this proposal for the second regulatory period.

Table 6.4 Water operating expenditure proposal (Dec 2014 real $'million)*

	Base year**	2016-17	2017-18	2018-19	2019-20
Efficient proposal***	325.7	318.7	318.1	314.8	312.2
New expenditure requirements	-	8.9	10.5	11.8	12.2
Water operating expenditure proposal	325.7	327.6	328.6	326.6	324.4

*Presented using the cost allocation method for the second regulatory period.
**The base year is the 2014-15 water operating cost forecast (at December 2014) presented under the cost allocation method for the second regulatory period and normalised to include $28.8 million of ADP operating costs which were capitalised during the proving period. Other sections of our proposal refer to the 2014-15 water operating cost forecast to analyse performance during the first regulatory period. In these cases, the forecast is presented under the cost allocation method used for the first regulatory period and the costs have not been normalised for ADP operating costs.
***Includes an efficiency reduction of 1% per year of total water costs. Annual operating costs vary due to operating costs associated with the ADP as discussed in section 6.4.2.

The efficient proposal line in Table 6.4 incorporates efficiencies already being achieved in the first regulatory period. This is achieved by embedding the forecast efficiency of $38.8 million for 2014-15 in the base year. The efficient proposal line also incorporates our commitment to ongoing annual efficiencies in the second regulatory period, of 1% of base costs at the beginning of each financial year. Further detail of how we will become more efficient during the second regulatory period is provided at section 6.4.3.

The base year has been normalised upwards by $28.8 million to reflect the ADP operating costs which were capitalised during the proving period. We normalised for this amount as in a 'normal' year we would not expect operating costs to be capitalised. Further details of this adjustment are provided in section 6.4.2.

We will incur $43.2 million of unavoidable operating cost increases and additional costs arising from network growth and technology investment. These are reflected in the new expenditure requirements line in Table 6.4 with further detail provided in section 6.4.1. For this reason, the water operating expenditure proposal is only marginally decreasing over the second regulatory period.

6.4.1 New and unavoidable expenditure requirements

Some increases in operational expenditure provide direct value for customers or are unavoidable. These costs primarily relate to growth in our network, IT investments to reduce costs, investments to improve customer support, cost escalation above the rate of inflation and unavoidable external requirements. Unavoidable external requirements are cost increases applied by government or regulators, which we have little or no control over and cannot avoid.

Our proposals for new expenditure are based on evidence from the first regulatory period such as cost pressures already occurring in the first regulatory period or increased requirements from our customers or stakeholders. Other proposals are necessary to achieve future efficiencies.

We developed our operating and capital expenditure plans together. Our operating efficiency proposal largely depends on our capital expenditure proposal. Any changes in one will affect the other.

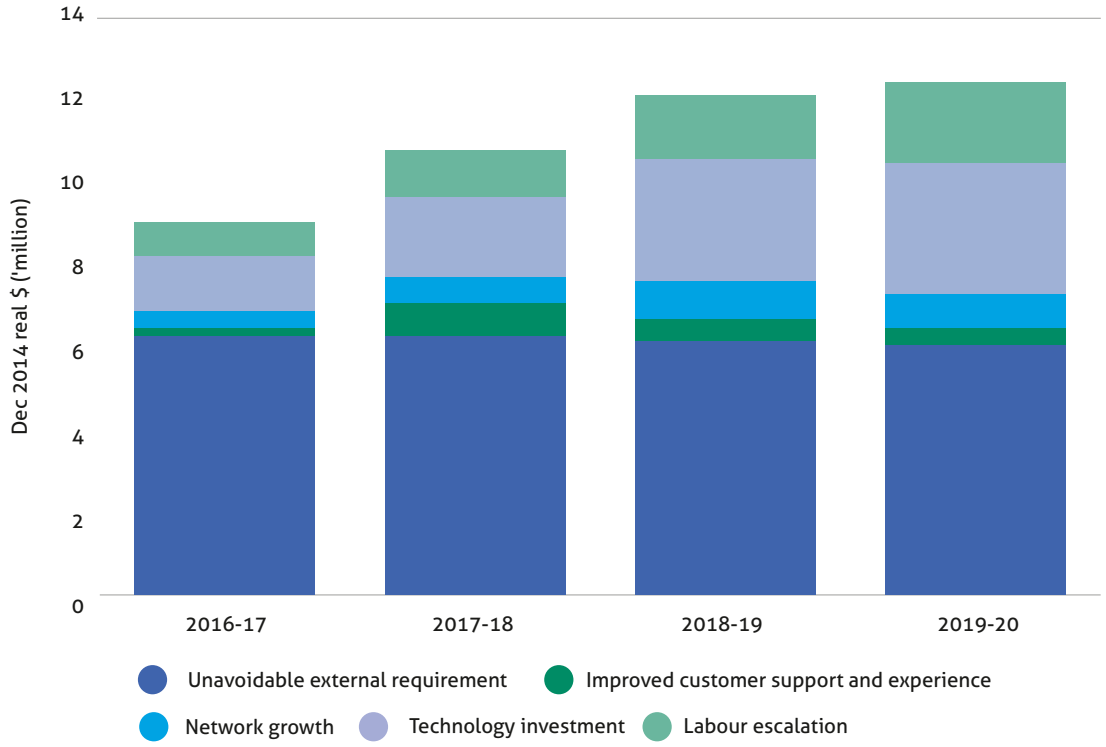
Many of our proposed operating expenditure requirements apply across our whole business. We allocate costs across our water, sewerage and non-regulated services in accordance with the cost allocation method for the second regulatory period. This cost allocation method has been reviewed by KPMG (attachment G). Table 6.5 and Figure 6.3 summarise the incremental costs from the base year that we allocated to water. Below the table we briefly discuss each new expenditure requirement. Detailed business cases are available for ESCOSA to review as part of its second determination process.

Table 6.5 New or unavoidable operating expenditure increases from base year (Dec 2014 real $'million)

		Operating expenditure increase from base year			
		2016-17	2017-18	2018-19	2019-20
Unavoidable external requirements	Water industry licence fees	2.8	2.7	2.7	2.6
	Past service superannuation liability	0.7	0.7	0.7	0.8
	Water treatment plant residuals	2.1	2.1	2.1	2.1
	Safety, health, wellbeing and training	0.5	0.5	0.5	0.5
Improved customer support and experience	Customer Assist program	0.1	0.4	0.4	0.4
	Your Say program	0.1	0.4	-	-
Network growth	Growth in water demand	0.3	0.3	0.5	0.7
	Capital plan impacts	0.2	0.3	0.5	0.1
Technology investment	IT business change projects*	1.3	1.9	2.9	3.1
Labour escalation	Labour price escalation above inflation (CPI)	0.8	1.2	1.5	1.9
Total		**8.9**	**10.5**	**11.8**	**12.2**

*Includes operating expenditure increases from the base year related to IT capital expenditure of the first and second regulatory periods.

Figure 6.3 Operating expenditure increases from base year



6.4.1.1 Water industry licence fees

ESCOSA collects these annual licence fees under sections 19 and 24 of the Water Industry Act 2012 on behalf of other regulators. These fees include a licence fee to ESCOSA, the Office of the Technical Regulator, the Department of Environment, Water and Natural Resources and the Department of Treasury and Finance for regulatory functions performed within the water industry.

The total of these fees was $3.1 million per year in the first regulatory period. We expect our annual water industry licence fees to increase by $4.2 million from 2016-17 to $7.3 million per year. ESCOSA will confirm the value of these fees as part of its second determination.

The increase is primarily due to including the cost of functions transferred to the Office of the Technical Regulator when independent economic regulation began. These costs are not already in our base year because the timing of the function transfer meant the fees charged during the first regulatory period did not include the costs.

This cost increase is unavoidable because we are legally obliged to pay the fees under the Water Industry Act. Of the increase, we allocated $2.7 million per year on average to water operating expenditure and $1.3 million per year on average to sewerage operating expenditure.[5]

6.4.1.2 Past service superannuation liability

There will be increases of $1.1 million per year in our unfunded liability obligations to our employees under defined benefit superannuation schemes. Of this increase, we allocated $0.7 million per year to water operating expenditure and $0.4 million per year to sewerage operating expenditure.

We need to fully fund this liability by 2033-34, consistent with government policy. Super SA determines the value of the unfunded liability and the payments required to fund it, conducting actuarial reviews every 3 to 4 years. The most recent actuarial review (September 2014) requires increases in past service superannuation payments, compared with the amounts allowed in the first determination. These increases will commence in 2016-17, to align with the start of the second regulatory period. They are unavoidable because we are legally obliged to pay the amounts determined by Super SA.

6.4.1.3 Water treatment residuals

We are required to comply with revised EPA standards for our water treatment residuals. We are forecasting to spend $2.1 million in 2015-16 to comply with this new requirement and will need to spend this amount each year over the second regulatory period to achieve ongoing compliance. The ongoing cost is higher than our base year costs and as such has been identified as a new expenditure requirement.

We need to dispose of water treatment residuals from our sites across the Riverland, South East, Adelaide Hills, Kangaroo Island and metropolitan areas.

Our historic practice was to re-use the material for quarry rehabilitation, agricultural spreading, backfill and surface treatments. This was permitted under an EPA Guideline for Use of Water Treatment Solids which ceased in 2010 when the EPA's Environment Protection (Waste to Resources) Policy came into force. Since this time, we have been permitted by the EPA to continue to place the material only in existing quarry sites and to stockpile at water treatment facilities while we transition to new practices in line with current EPA policy. This approval will expire on 31 January 2016.

Compliance with the EPA's Environment Protection (Waste to Resources) Policy requires us to classify, transport and dispose of water treatment residuals at EPA licensed facilities. We are undertaking these new activities in the most prudent and efficient manner.

We calculated the increased cost from the forecast production at each water treatment plant, factoring in historical data to calculate the expected volume and category of water treatment residual

5 The total average allocation does not equal $4.2 million (quoted fee increase in 2016-17) due to the impact of inflation across the 4 year period.

generated. We will competitively tender transport and disposal costs.

This cost increase is unavoidable because failure to appropriately dispose of water treatment residuals would breach EPA requirements.

6.4.1.4 Safety, health, wellbeing and training

To comply with evolving workplace health and safety (WHS) standards and workforce competency standards across our business, we propose an additional $0.7 million per year on average of operating expenditure. Of this increase, we allocated $0.5 million per year on average to water operating expenditure and $0.2 million per year on average to sewerage operating expenditure.

Safety of our employees and our community is our highest priority, and we actively seek to reduce risk in this area. The National Certification Framework for Water Operators sets minimum standards of competence for field operators. These standards continue to evolve and failure to comply may result in breaches of WHS compliance requirements and breaches of water quality regulatory standards. To avoid this risk we provide training for existing and new employees to ensure ongoing compliance with these competence standards. The proposed expenditure will also allow us to identify our highest risk assets and develop WHS risk mitigation plans and risk reduction activities.

During the organisational restructure, our investment in training needed to reduce to enable our employees to transition to the new structure. This reduction largely occurred in 2014-15 meaning our base year for the second regulatory period does not reflect our ongoing training needs. The proposed expenditure enables us to provide the appropriate level of training for staff over the second regulatory period.

We based this cost increase on the scheduled fees of registered training organisations (Technical and Further Education South Australia, Water Industry Training Centre). We will commence the increased expenditure in 2015-16 to ensure our compliance with new and evolving WHS requirements.

6.4.1.5 Customer Assist program

We propose enhanced hardship provisions at a cost of approximately $2 million over the second regulatory period. Of this amount, we allocated $1.3 million to water operating expenditure and $0.7 million to sewerage operating expenditure.

Our Customer Assist program helps customers who are deemed to be in a hardship situation. We propose an incentive scheme to help these customers continue to meet their payment obligations. The most common support measure across Australia is a payment matching scheme, whereby following a certain number of payments made by the customer we will make a payment on their behalf.

This type of scheme is offered by most water utilities in the eastern states and by major energy retailers in South Australia. Our following investigations supported its implementation:

- A social research collaboration agreement with South Australian Council of Social Service supported an initiative to provide financial incentives within payment plans. Participants gave almost unanimous support for this initiative and considered it provides a goal and motivation to stay on track with payment plans
- Your Say indicated support to expand the Customer Assist program to offer measures such as debt forgiveness in cases of extreme hardship at a cost of $1 per annum.[6] The results indicated 64% support from customers completing an online survey and 71% support from customers in customer survey workshops.

We propose to initially offer the scheme to hardship customers on a pension concession through Centrelink. In the second year, we intend to expand the scheme to other hardship customers. The expenditure we propose is less than $1 per annum per customer.

6 Deloitte, *Customer Engagement Program Stage 3*, 2015, p. 19.

6.4.1.6 Customer engagement

We are committed to ongoing engagement with our customers to understand their needs and what they value about our services. Building on the success of our recent customer engagement program, Your Say, we propose a similar program of customer engagement in the second regulatory period. The program will cost $0.7 million over the period. Of this amount, we allocated $0.5 million to water operating expenditure and $0.2 million to sewerage operating expenditure. While we undertook engagement activities in the first regulatory period, this new initiative shows as a cost increase because we incurred most of the prior expenditure in 2013-14 (before our base year).

The Customer Engagement Program (2016-20) will consist of research and engagement activities with customers to assess their satisfaction with current and future service levels and their willingness to pay for proposed changes to services and investments. It will also test and develop solutions with customers.

The program will involve us working with our customers to identify preferred pathways for contact and to improve the end-to-end customer experience. This work will help us make service delivery efficiencies aligned with customer expectations. It will also help us remove red tape, identify customer 'pain points' and make it easier for customers to interact and do business with us.

This customer engagement initiative will also provide customers with the opportunity to engage in the development of our next regulatory business proposal, and thus help us align our regulatory business proposal with customer needs.

6.4.1.7 Growth in water demand

As detailed in chapter 8, we expect total water demand to increase over the second regulatory period from 190.0 gigalitres in 2014-15 to 194.5 gigalitres in 2019-20. We will meet this growth in demand with our River Murray allocations, which will require $1.8 million of additional costs to transport and treat the additional water over the second regulatory period. We used our supply mix optimisation model to estimate the costs of meeting this demand. MWH independently reviewed our supply mix optimisation model (see attachment H). The additional water volume sold will fund the additional cost, so we will not increase prices to our retail water customers.

6.4.1.8 Capital plan impacts

We will incur additional operating expenditure in the second regulatory period as a result of newly constructed assets and deferral of capital expenditure (discussed in chapter 5). For our water service, we estimate average annual operating cost increases of $0.3 million over the second regulatory period.

We manage infrastructure assets to deliver the required levels of service for optimal lifecycle cost at an acceptable level of risk. This requires a trade-off between operating and capital expenditure to deliver the most efficient lifecycle cost. The increased water operating expenditure largely reflects an increase in the size and overall age of our network and treatment plants. That is, we need funding to maintain our infrastructure in a way that ensures water quality and reliability for our customers. Our investments in pressure management and facilities accommodation partly offset these costs by reducing operating cost.

We estimated the capital plan impact using the bottom–up method, which complies with our standard estimating practices. We also used our experience in managing these assets.

6.4.1.9 Information technology business change projects

In the first regulatory period, we invested in IT to transform the way we do business and will continue to do so over the second regulatory period. Chapter 13 presents more information on our IT proposal.

Our proposed IT investment has associated operating costs. For example, in 2015-16 we forecast an additional $0.8 million of water operating costs associated with our IT investment in the first regulatory period. For the second regulatory period, we estimate additional operating costs associated with our IT investments over the first and second regulatory periods to be $13.7 million[7] (over the base year costs). Of this amount, we allocated $9.2 million to water operating expenditure and $4.5 million to sewerage operating expenditure.

This IT driven investment will deliver operating cost savings, enhance workforce productivity, improve customer experience and interaction, ensure compliance with external obligations and maintain risks at an acceptable level. The investment will make us a smarter, more efficient and more responsive organisation. Customers will benefit from improved service channels, more responsive and consistent service and lower prices over the longer term.

The savings from our IT investment will more than offset the ongoing support costs and licence fees needed for the new IT investments as detailed in chapter 13.

Without the IT business change initiatives, we will not achieve the operating cost efficiencies and service improvements in our proposal.

We determined the IT operating expenditure increase from detailed cost estimates for each IT project, including vendor estimates of licence fees and industry benchmarks for implementation costs.

6.4.1.10 Labour price escalation above inflation

Labour prices have historically increased at a higher rate than general inflation. For our water service, we estimate labour price escalation above inflation to be $5.3 million over the second regulatory period.

We engaged independent consultant BIS Shrapnel to advise us of wages growth in the utilities sector over the second regulatory period. Their report, included at attachment I, advises underlying wages growth in the 'utilities' sector is estimated to average 4% per year over the second regulatory period. While current labour market conditions are subdued, BIS Shrapnel expected wages growth to pick up from 2017-18. This rise reflects increased demand for labour from the broader utility sector as engineering construction ramps up.

Labour price growth has historically exceeded the general rate of inflation in Australia. Australian Bureau of Statistics (ABS) figures indicate wages price growth exceeded inflation by 1.0% on average over the past 10 years[8]. We expect this trend to continue over the second regulatory period.

For the first regulatory period, ESCOSA did not support our proposal for real labour price escalation. ESCOSA acknowledged that labour prices increase at a rate higher than inflation but that efficient, well run businesses can control total labour costs to the rate of inflation through efficiencies.

We maintain our position that escalation above inflation is warranted for labour costs. In the interests of containing wage price escalation to achieve lower prices for customers, we propose labour price escalation of 3% per year (0.5% per year above the expected rate of inflation). The proposed labour price escalation is below the rate expected by BIS Shrapnel and below the long term average of real labour price growth in Australia. This increase in the cost of labour includes the additional costs of movements in pay scales as well as general wage escalation. Adopting a lower rate means our labour costs will already include an implied efficiency of 1% each year. We will also apply the broader 1% efficiency target to labour costs each year as detailed in section 6.4.3.

We propose separate ongoing operating expenditure savings, which we will partly achieve through labour efficiency and cost reductions. We ask ESCOSA to consider the cost increase of labour price escalation in conjunction with those operating cost savings.

7 The $13.7 million includes $7.7 million in operating expenditure increases from the base year as a result of IT capital expenditure in the first regulatory period.
8 Comparison of the 10 year average of the ABS *All groups CPI: Australia (series ID A2325847F) to the ABS Total hourly rates of pay excluding bonuses: Australia (series ID A2705194A).*

6.4.2 How the ADP impacts our operating expenditure proposal

The ADP's original production plan for the 2 year proving period (to December 2014) was proposed and accepted in the first determination. We reduced production levels over the last 6 months of the proving period, in recognition of satisfactory proving test results. This enabled us to extend the original production plan to consider the plant's longer term operability and resilience over an expanded period (to June 2016), while remaining within the original allowed cost.

We engaged independent consultants Aurecon to review potential operating regimes for the ADP, ranging from zero production to full production of 300 megalitres per day. This review, provided at attachment J, leveraged the latest industry information in what is an evolving area for Australian utilities. Aurecon[9] recommended minimum production mode as the optimal mode from a whole of life perspective, compared with other production regimes. In minimum production mode, the plant operates to produce 30 megalitres per day for 9 months of the year (approximately 8 gigalitres per year).

Based on our analysis and Aurecon's advice, we propose to operate the ADP in minimum production mode.

This decision is driven by asset stewardship and mitigation of operational and strategic supply risks. Operating expenditure over the second regulatory period has been calculated in accordance with the plant's contract conditions. Operating at minimum production means we have been able to marginally reduce our operating costs compared to the base year.

We assumed the full availability of our River Murray water allocations in arriving at this proposal. So, we may need to revise the ADP's operating regime if the Water Allocation Plan for the River Murray Prescribed Resource (in its current draft form) is adopted. Similarly, if drought conditions are declared during the second regulatory period we will need to revise the ADP's operating regime to ensure ongoing supply to the Adelaide metropolitan area and take the pressure off regional supplies.

6.4.2.1 Why we propose minimum production mode

The incremental average annual operating cost of minimum production rather than zero production for the second regulatory period is estimated at $5.7 million (Figure 6.4). Notably, a zero production regime still incurs significant annual fixed operating costs from contractual obligations.

Operating the ADP in minimum production mode rather than at zero production mode over the second regulatory period provides both financial and non-financial benefits to customers. Financially, that mode provides best value to customers over the longer term because it:

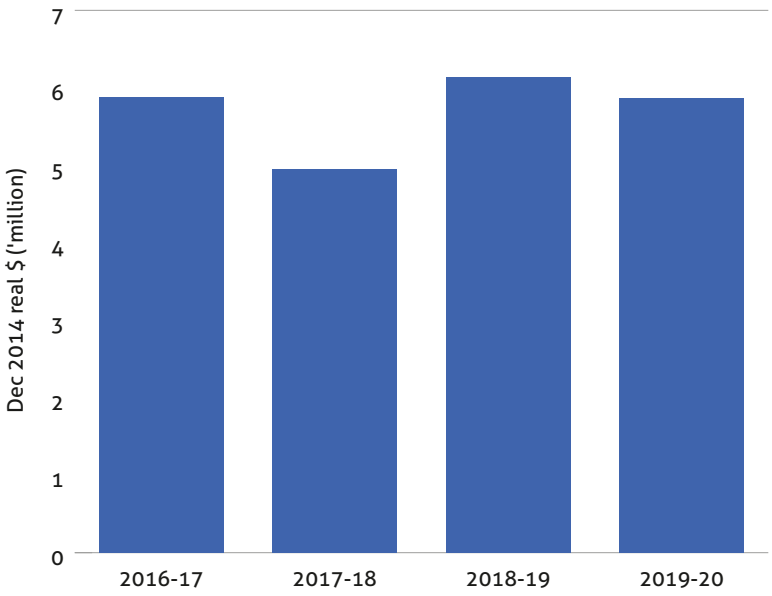
- Maximises the life of the plant, so defers future capital expenditure to replace or renew elements of the plant
- Avoids, or defers $5-6 million per year in capital expenditure in other parts of the water treatment and supply network, because the plant provides an alternative to those water supply sources.

From a non-financial perspective, minimum production mode:

- Generally improves drinking water quality (salinity) in metropolitan Adelaide
- Improves the security of supply to customers who rely on the Happy Valley water treatment plant as their sole source of supply, in the event of a loss of distribution at the plant (such as a power failure)

9 Aurecon Australasia 2014, *Adelaide Desalination Plant asset stewardship review.*

Figure 6.4 Incremental cost of operating the ADP in minimum production mode rather than zero production



- Enables us to rapidly address disruption in the supply sources (such as deterioration of water quality due to algal blooms in the reservoirs poor quality inflow from catchments, and elevated salinity from the River Murray)
- Avoids the operational difficulties and costs of re-commissioning the plant after an extended shutdown. Interstate and overseas utilities have experienced issues with desalination plants that were shut down for extended periods. Recent documentation supports that it is difficult to bring complex facilities (such as desalination plants) back online after shutdown mode, regardless of the maintenance during the shutdown. The Santa Barbara Desalination Plant in the United States lost 80% of its original asset value as a result of being in full shutdown for more than 20 years[10]
- Leverages staff experience and our investment in training by keeping a skilled workforce to operate and oversee a complex plant, thereby reducing future risk
- Provides opportunity to assess the risk of dropping reservoir levels to better collect rainfall inflows into the reservoirs without spill which optimises raw water collection.

10 Aurecon Australasia 2014, *Adelaide Desalination Plant asset stewardship review.*

6.4.3 How we will become more efficient in the second regulatory period

We are focused on keeping prices affordable for customers. While challenging, we propose an annual efficiency target of 1% of our base costs each year from 2016-17. This target equates to a 4% reduction in our proposal by 2019-20.

Our proposed annual efficiency target compares favourably with efficiency targets in other jurisdictions (which average around 1% per year of total operating expenditure) as shown in Table 6.6. Some regulators apply efficiencies to subsets of operating expenditure (for example, controllable or discretionary costs) so, to help comparisons, we converted headline efficiency targets to a common base of total operating expenditure.

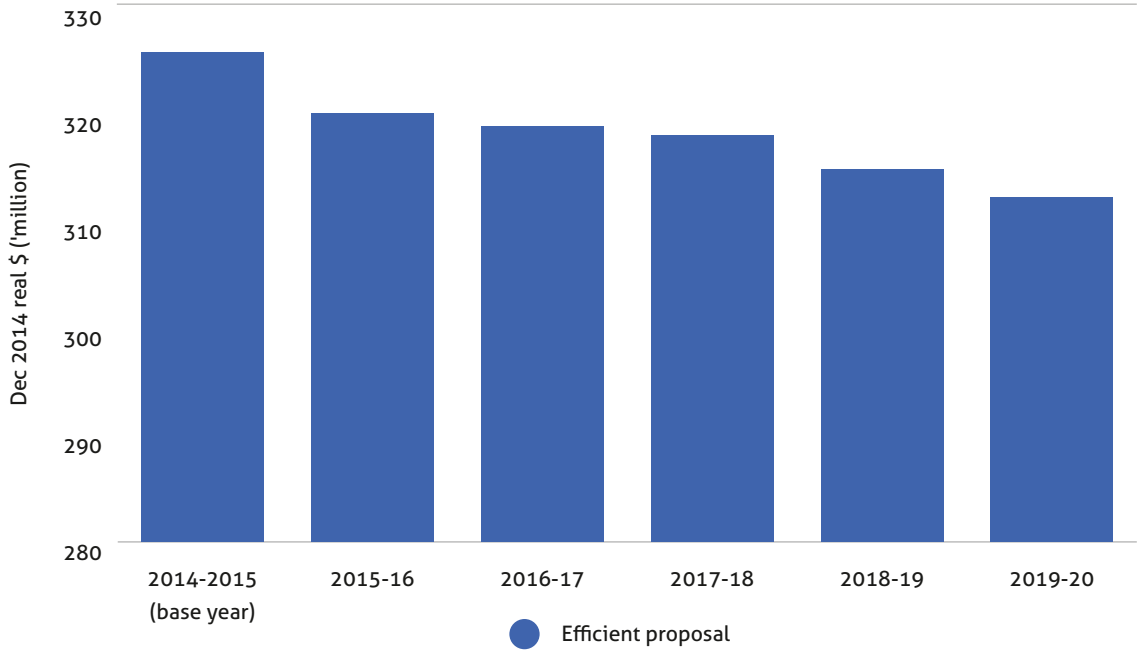
Figure 6.5 presents our efficient proposal after applying our proposed efficient target.

Table 6.6 Operating expenditure efficiency targets applied by Australian water regulators[9]

Regulator	Determination	Headline efficiency target	Applied to	Efficiency target as % of total base operating expenditure
ERA	March 2013 inquiry	2% pa*	Business as usual operating expenditure	1.6% pa
ESC	Price review 2013: greater metropolitan water businesses	1% pa	Controllable business as usual operating expenditure	0.4% pa
IPART	Hunter Valley Water price review	1% pa	Total operating expenditure	1% pa

*Applies to 2005-06 base year costs and relates to a 2% reduction on operating costs per connection. This makes comparison to our efficiency target difficult as Water Corporation experience a significantly higher growth in connections meaning a larger proportion of operating costs do not change with higher numbers of connections.

Figure 6.5 Efficient base water operating expenditure proposal



11 Essential Services Commission, *Proposed approach to Melbourne Water's 2016 water price review consultation paper, 2015, p. 34*

The proposed efficiency target applies to total base water operating costs despite many of those costs being fixed or uncontrollable. For this reason, the proposed efficiency target represents more than 1% per year of the base water operating costs we can control or influence in the second regulatory period. For example:

- We forecast ADP operating expenditure in 2014-15 of $47 million (under accounting standards). The annual efficiency target will apply to these costs even though the majority are fixed contractual costs payable irrespective of the ADP's operating regime. If we excluded these costs, then our efficiency proposal would equate to around 1.2% per year (around 4.7% by 2019-20)
- We forecast government taxes, fees and charges (such as land tax, water planning and management fees and regulatory fees) of $51 million per year in the second regulatory period. If we excluded the portion of these costs allocated to the water service, then our efficiency proposal would equate to around 1.7% per year (around 6.8% by 2019-20).

Achieving the 1% annual efficiency target against our base water operating costs will be a challenge, especially while maintaining our level of service to customers, managing risks and meeting future challenges. It will become progressively more difficult each time we make cost reductions. For these reasons, we consider the 1% proposed efficiency target to be a stretch target.

We will partly achieve the proposed efficiency target through our business change IT program, which is transforming how we operate. We developed this program by analysing how we can operate more efficiently and be more responsive to customer needs. It will start delivering operating expenditure efficiencies (IT enabled savings) from the beginning of the second regulatory period, by:

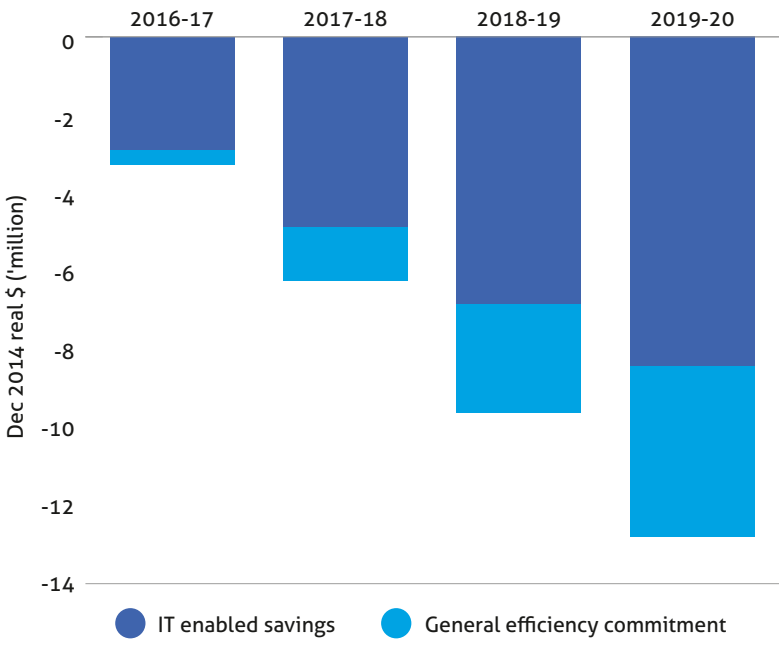
- Improving the safety and efficiency of our field force. It will enhance access to systems and provide centralised visibility of resources, enabling more intelligent and automated management
- Streamlining work practices through integrated systems, leading to increased workforce productivity
- Improving our data collection, reporting and data analysis capabilities to enhance process efficiency and decision support tools
- Enhancing energy management systems to eliminate intermediary administration costs and provide better information for decision making.

The IT enabled savings will not be sufficient to achieve our proposed 1% efficiency target. We will plan how to meet the remaining part of the proposed efficiency target as we move towards the later years of the second regulatory period. In the first regulatory period, we found better ways to do business to achieve our efficiency target. In the second regulatory period, we will seek continuous improvement opportunities to deliver against the efficiency proposal.

Achieving the 1% annual efficiency target against our base water operating costs will be a challenge, especially while maintaining our service to customers, managing risks and meeting future challenges. Achieving efficiency becomes progressively more difficult each time reductions are made.

Figure 6.6 breaks down how we aim to achieve our proposed water operating expenditure efficiency target, between IT enabled savings and general efficiency improvements.

Figure 6.6 How we plan to meet our proposed efficiency target for water operating expenditure



6.5 Summary

We outperformed the operating expenditure allowances made in the first determination by around $57.7 million. External benchmarking demonstrates that we provide both our metropolitan and country water services more efficiently than the average of the peer group.

We propose to spend $1,307 million over the second regulatory period to operate and maintain our water infrastructure and deliver water services to our customers.

We applied a robust process to determine the additional operating costs necessary for the second regulatory period. Our proposed operating expenditure includes $43.4 million in unavoidable operating expenditure increases, primarily external requirements, cost escalation, network growth and investment in technology to reduce future operating costs.

While our operating expenditure is already efficient compared with that of our peers, our proposed operating expenditure includes an efficiency target of 1% on base water operating expenditure each year of the second regulatory period, growing to 4% by 2019-20.

We propose to operate the ADP in minimum production mode in the second regulatory period. That mode provides the best long term value, improved operational resilience and greater water security to customers.

Chapter 7
Required revenue

KEY POINTS

We are focused on the affordability of water services for our customers. The allowable water revenue that we propose for the second regulatory period is, on average, 1.6% less than the allowable water revenue for the first regulatory period. This reduction will mean lower water prices for customers.

We propose to use mechanisms that bank the costs and benefits arising from any revenue variations generated by changes in demand. These banking mechanisms promote price stability for customers over the second regulatory period.

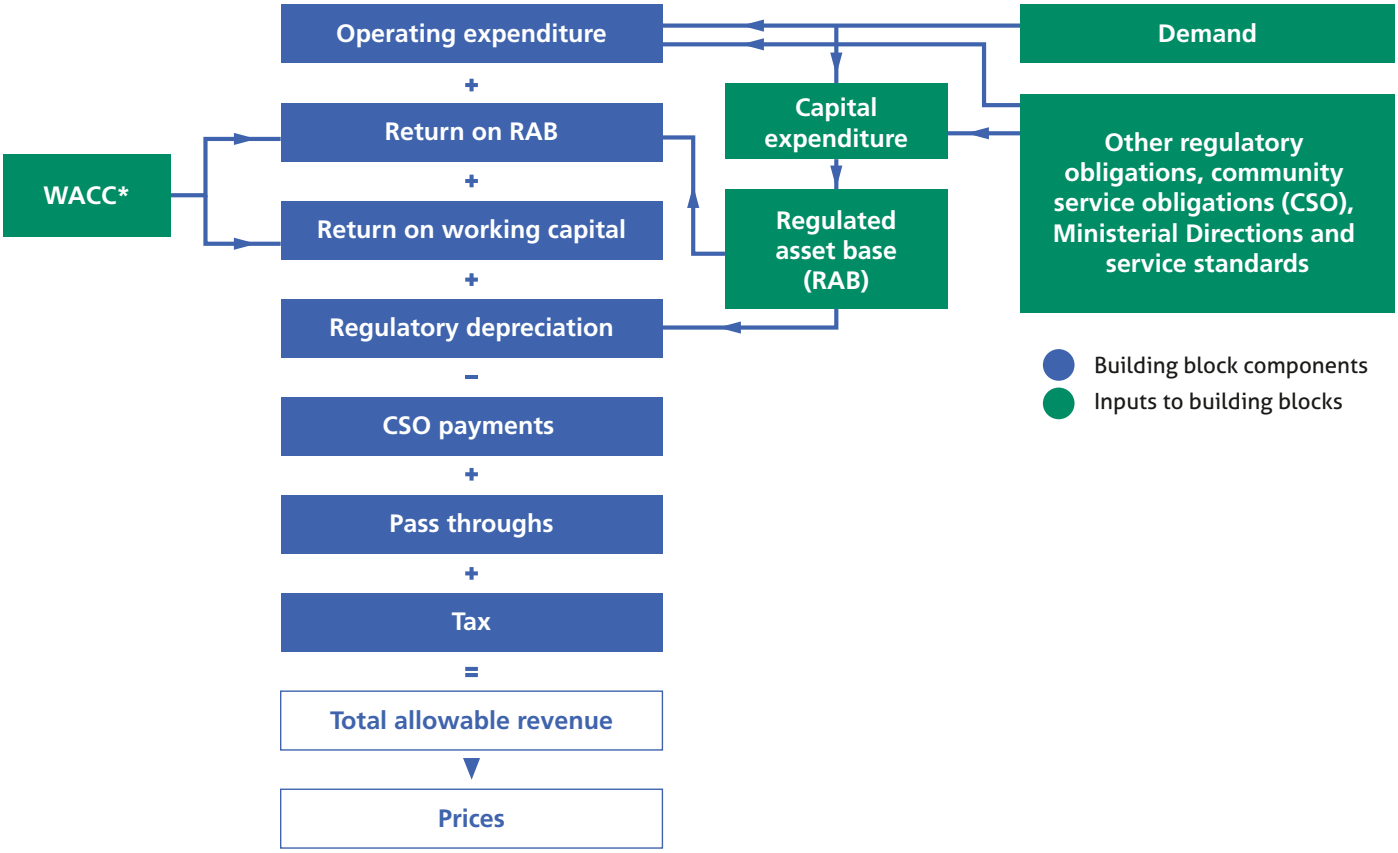
Our revenue proposal is based on current observable market inputs for the rate of return at the time of preparing this document. These may be different at the time of the second determination, which will affect the final allowable revenue.

7.1 Revenue approach

ESCOSA uses a building block method to assess our proposals and determine the maximum allowable revenue we should recover from customers in exchanges for the services we provide (Figure 7.1). This method complies with the National Water Initiative pricing principles. It also considers the Treasurer's pricing orders.

To calculate the building blocks, we used ESCOSA's revenue model (revenue model), which was also used for the first determination. We engaged KPMG to perform an independent examination of the revenue model to identify any issues and thereby reduce the risk of error. KPMG's factual findings did not identify any issues which would have a material impact on the results. KPMG's report has been provided to ESCOSA in support of the populated revenue model.

Figure 7.1 Revenue building block method[1]



*Weighted average cost of capital. In our proposal, called the regulatory rate of return.

1 ESCOSA, SA Water Price Determination 1 July – 30 June 2020, Framework and approach, November 2014 p. 7.

7.2 How are we performing in the first regulatory period?

The first determination set the annual total allowable revenue for the first regulatory period and converted it into a form of revenue control based on revenue per kilolitre (kL). This form of control is called an average revenue control. Before each year, we set water prices to earn revenue that does not exceed the average revenue control. Annually, we publish a statement (available on our website) showing our compliance with the average revenue control.

Table 7.1 presents the average revenue per kL earned, or forecast to be earned, for direct control water services compared with the average revenue control. It also shows the actual and forecast revenue compared with the allowable revenue set in the first determination. Since the first regulatory period began, variations have arisen in our forecasts, including forecast customer numbers and demand (chapter 8). These variations mean actual average revenue per kL will be different, even though we set prices to achieve the average revenue control.

Table 7.1 Revenue compliance for water services (Dec 2013 real $)*

	2013-14	2014-15 (forecast)	2015-16 (forecast)
Average revenue control			
Average revenue control from first determination**	4.098/kL	4.098/kL	4.098/kL
Average actual/forecast revenue***	4.095/kL	4.086/kL	4.091/kL
Variance %	-0.07%	-0.29%	-0.17%
Allowable revenue			
Allowable revenue as per first determination**	778.6 million	778.6 million	778.6 million
Actual/forecast revenue***	754.4 million	767.6 million	777.3 million
Variance****	-24.3 million	-11.0 million	-1.3 million

*Based on December 2013 real dollars in line with ESCOSA's first determination and the 2015-16 Statement of Compliance issued to ESCOSA.
**Based on water sales of 190 GL forecast in the first determination.
***Based on actual water sales of 184 GL in 2013-14 and current forecast water sales of 188 GL in 2014-15 and 190 GL in 2015-16.
****Variances may not add due to rounding.

The first determination outlined a revenue adjustment mechanism where a cumulative revenue variation greater than 1% in the first regulatory period would result in 30% of the variation being rolled into the second determination. The current variation between the allowable revenue for the first regulatory period and the actual/forecast revenue suggests an under recovery of revenue in the first regulatory period of around $38 million (Table 7.1). This amount would be sufficient to trigger the revenue adjustment mechanism, meaning we would need to recover around $11 million over the second regulatory period. At the time of writing the proposal, final water sales revenue is uncertain, so we did not factor a revenue adjustment into our proposal. ESCOSA will consider our latest revenue information as part of the second determination, to assess whether the revenue adjustment mechanism has been triggered.

7.3 Our proposal

The building blocks and total allowable water revenue we propose for direct control water services for each year of the second regulatory period is shown in Table 7.2. Our proposals require $3.2 billion of revenue from water customers over the second regulatory period. Section 7.4 discusses the key inputs of the revenue model, and section 7.5 outlines the calculation of each building block.

Table 7.2 Proposed allowable revenue – water (Dec 2014 real $'million)*

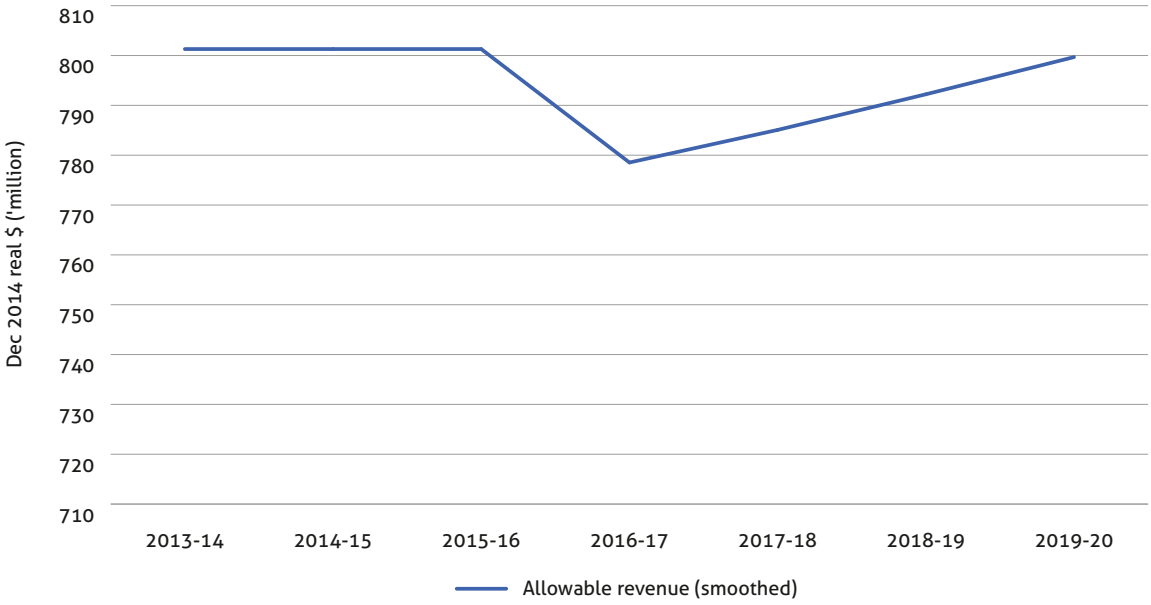
	2016-17	2017-18	2018-19	2019-20
Return on asset (RAB)**	344.8	345.6	346.2	345.5
Return on working capital***	1.5	1.5	1.5	1.5
Operating expenditure	327.6	328.6	326.6	324.4
Depreciation***	174.7	177.7	180.8	184.3
Tax	5.4	5.6	6.1	6.5
Community service obligations (CSOs)	-72.7	-71.1	-69.6	-68.2
Pass throughs	–	–	–	–
Total allowable revenue	**781.3**	**787.9**	**791.6**	**794.0**
Smoothed allowable revenue****	**778.5**	**785.1**	**792.2**	**799.7**
Smoothed total				**3,155.5**

*Building blocks and allowable revenues are summarised outputs from the revenue model. KPMG independently examined the revenue model and did not identify any issues which would have a material impact on the results.
**Calculated on mid-year asset values.
***Discounted to mid-year values.
****Calculated as a net present value. Smoothed prices rather than revenue which means smoothed allowable revenue increases slightly each year in line with growth in demand and customer numbers.

The efficiencies we propose over the second regulatory period, combined with favourable financial market conditions, means our proposed allowable revenue is, on average, 1.6%[2] (in real terms) less than determined for the first regulatory period. The real revenue reduction we propose for the second regulatory period is shown in Figure 7.2. After allowing for inflation (estimated at 2.5% per year), proposed allowable water revenue is an average 6.7% higher (in nominal terms) than determined for the first regulatory period.

Chapter 8 discusses the impact of the proposed revenue on water prices, along with the price impacts of other changes (such as changes in demand, customer numbers and other sources of revenue, like stormwater). For the second regulatory period, we propose to smooth prices rather than revenue. As a result, smoothed allowable revenue will naturally increase over the second regulatory period as demand and customer numbers grow.

Figure 7.2 Allowable water revenue*



*We smoothed allowable revenue during the first regulatory period, whereas we will smooth prices for the second regulatory period.

7.4 Inputs to building blocks

The building block method to calculate the allowable revenue has 7 building block components (Figure 7.1). These building block components are calculated using 5 inputs. These inputs are detailed in the following areas of our proposal:

- Water regulated asset base (RAB) – section 7.4.1
- Regulatory rate of return (post-tax real) of 4.20% – chapter 4
- Other regulatory obligations – chapter 2, community service obligations (CSOs) and Ministerial Directions – section 7.5.6 and service standards – chapter 3
- Water demand of 190.1-194.5 GL per year – chapter 8
- Capital expenditure for our water service of $740.3 million which is made up of a:
  - $682.8 million proposed investment in water infrastructure – chapter 5. This value reflects the total water capital investment before the credit for reverse osmosis membranes which has been treated as an asset disposal in the revenue model
  - $57.5 million proposed investment in IS infrastructure (50% of IS capital expenditure has been allocated to the water service) – chapter 13.

2 Average allowable revenue from 2016-17 to 2019-20, divided by average allowable revenue from 2013-14 to 2015-16, less 1.

7.4.1 Regulated asset base

The water RAB reflects our investment in assets over time to deliver direct control water services. The water RAB value is important for calculating the return on assets and depreciation.

The Treasurer's Second Pricing Order established the initial water RAB value at 1 July 2013 of $7.8 billion (Dec 2012 real $) or $8.2 billion (Dec 2014 real $). The initial water RAB value has been updated to reflect asset changes since the value was set and to reflect a proposed new asset class.

7.4.1.1 Asset classes

The water RAB for the first regulatory period comprised 5 asset classes, each with an estimated useful life for regulatory purposes. As allowed in ESCOSA's Framework and Approach, we propose a new asset class for the second regulatory period: short life assets of the Adelaide Desalination Plant (ADP). For accounting purposes, the ADP membranes would normally be operational costs. For regulatory purposes, they were capitalised and included as part of the ADP asset class.

As a result, we are depreciating these assets over 56 years even though they are expected to last only 7 years. So, current customers receive a discount (via lower depreciation) at the expense of future customers. For this reason, we propose the new asset class (assets with a shorter useful life – that is, 7 years), which will increase our regulatory depreciation in the short term and put some pressure on prices for the second regulatory period. We consider this treatment more correctly approximates the asset's actual life and, therefore, is in the long term interests of customers because it will reduce future price pressures.

7.4.1.2 Opening water RAB at 1 July 2016

Table 7.3 details how the initial water RAB value has been rolled forward to derive an opening water RAB value of $8.3 billion for the second regulatory period (at 1 July 2016). Attachment K outlines the roll forward for each asset class.

Table 7.3 Rolling forward the water RAB value – first regulatory period (Dec 2014 real $'million)

	2013-14	2014-15	2015-16
Opening value	8,192.1	8,259.2	8,281.6
Capital expenditure	249.9	200.1	190.8
Disposals	10.0	1.1	1.1
Depreciation	172.8	176.6	179.9
Closing value	**8,259.2**	**8,281.6**	**8,291.4**

The opening water RAB value at 1 July 2016:

- Separates the newly proposed asset class for short life ADP assets
- Converts values to December 2014 real dollars[3]
- Incorporates actual and forecast outcomes for the first regulatory period, including capital expenditure, asset disposals and depreciation.

As a result, the opening water RAB value at 1 July 2016 is $37.2 million lower than forecast in the first determination. A lower opening water RAB reduces pressure on water prices over the second regulatory period, via a lower return on the water assets and lower depreciation. The opening water RAB is subject to change, pending the results of ESCOSA's review of capital expenditure for the first regulatory period.

3 Consumer price index (CPI, weighted average of 8 capital cities) is applied on a 9 month lag. We converted the values from December 2012 to December 2014 based on the observed CPI from March 2012 to March 2014, which was 5.5%.

7.4.1.3 Water RAB values over the second regulatory period

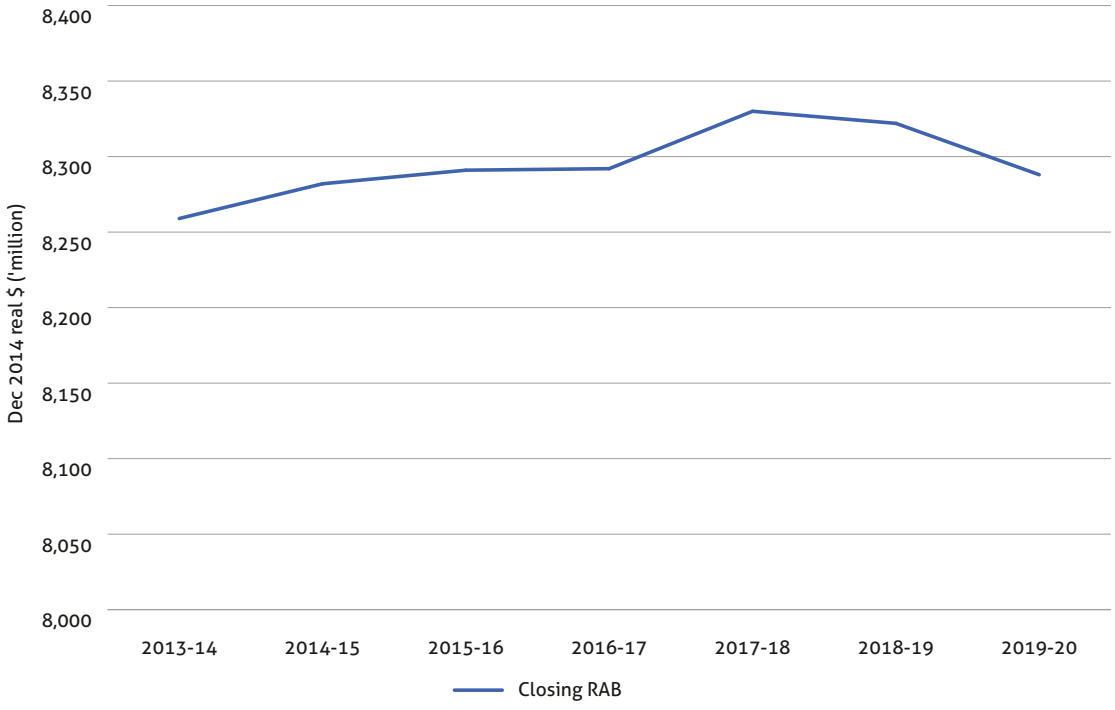
We rolled forward annual water RAB values for the second regulatory period, consistent with ESCOSA's Framework and Approach. Under this method, we adjust the opening water RAB value for capital expenditure, asset disposals and depreciation, to determine a closing water RAB value. The closing water RAB value then becomes the opening water RAB value for the following year. The rolled forward water RAB for each year of the second regulatory period is shown in Table 7.4 with more detailed information by asset class provided in attachment K.

Table 7.4 Rolling forward the water RAB value – second regulatory period (Dec 2014 real $'million)

	2016-17	2017-18	2018-19	2019-20
Opening value	8,291.4	8,291.6	8,329.5	8,322.2
Capital expenditure	179.6	227.6	178.2	154.9
Disposals	1.2	8.1	1.2	1.1
Depreciation (end of year value)	178.4	181.4	184.5	188.1
Closing value	**8,291.6**	**8,329.5**	**8,322.2**	**8,287.9**

The trend in closing water RAB values over the first and second regulatory periods is shown in Figure 7.3. Importantly, by the end of the second regulatory period, water RAB values will be marginally lower than at the beginning of the period. The temporary increase in 2017-18 reflects increased investment in information technology projects. This increase is then offset by lower ADP values from adopting the shorter asset life for membranes. We expect the ADP value to continue to decrease over the medium term then stabilise at the time we need to make significant investment to refurbish elements of the plant (such as pumps and electrical equipment). The timing of ADP membrane replacements causes an increase in disposals for 2017-18.

Figure 7.3 Closing water RAB values



7.5 Calculation of the building blocks

The building block method in Figure 7.1 has 7 building block components to calculate the allowable revenue. The building block values (Table 7.2) we calculated are detailed in this section.

7.5.1 Return on water RAB

As a result of a reasonably stable water RAB value and the lower regulatory rate of return, we forecast the return on asset the building block to be an average 6.3% ($23 million) per year less than it was in the first regulatory period.

We calculated the return on the water RAB for each year of the second regulatory period by multiplying the water RAB (mid-year value) by the post-tax real regulatory rate of return. The detail is provided in attachment K. This approach is consistent with the method used in the first regulatory period.

7.5.2 Return on working capital

Working capital is the smallest building block, and we forecast it to be stable across the first and second regulatory periods.

We calculated the return on working capital for the second regulatory period using the same method and assumptions used for the first regulatory period. The allowable revenue calculation is based on a uniform collection of expenditure and revenue across the year, even though revenue is delayed compared with expenditure. To fund this delay, we borrow to ensure we have sufficient cash (that is, capital) to operate. The revenue model allows us to recover this additional cost. In accordance with the method used for the first determination, we discounted the end-of-year working capital to a mid-year value to calculate the building block in the revenue model.

7.5.3 Operating expenditure

We forecast operating expenditure to be on average 6.4% higher in the second regulatory period than in the first regulatory period. This increase, which is below the rate of inflation, will add about $20 million per year, on average, to the allowable revenue.

Chapter 6 details the operating expenditure that we propose for the second regulatory period for the prudent and efficient delivery of direct control water services. We propose efficiency savings on base water expenditure, which partially offset new initiatives to improve services for customers and by external obligations.

7.5.4 Regulatory depreciation

We forecast depreciation to be an average 3.0% higher in the second regulatory period than the first regulatory period. This increase will add $5 million per year to average allowable revenue. The growth in depreciation largely reflects the new asset class we created for short lived ADP assets.

Regulatory depreciation accounts for around one quarter of allowable revenue. For this reason, the depreciation method can significantly affect allowable revenue over a regulatory period. We propose to update our depreciation method so regulatory and tax useful lives for each asset class are based on a weighted average. The proposed method is consistent with interstate practice, provides appropriate cash flows and ensures customers fairly and evenly contribute to the costs of the infrastructure used to provide their service. Further support for this method (including a worked example) is provided in attachment K.

Based on a weighted average method and the latest available information (particularly capital[4] expenditure over the first regulatory period), we reviewed the useful life of each asset class for regulatory purposes. We propose the useful lives in Table 7.5 for the second regulatory period for new and existing assets.

Table 7.5 Proposed regulatory useful life, by water asset class (years)

Water asset class	Average remaining life of existing assets (at 1 July 2016)	Average economic life of new assets
Pipes	59.6	103.0
Non-pipes	33.6	64.0
ADP	52.7	57.0
ADP short lived assets	3.9	7.0
Corporate depreciable	7.7	15.0

When we incur expenditure on new assets, only 50% of the annual depreciation for that asset is reflected (for regulatory purposes) in the first year. This approach is consistent with the first regulatory period and with the revenue model's assumption for expenditure to be applied evenly across the year.

Table 7.6 outlines the proposed end-of-year depreciation for each water asset class. This depreciation value is used for rolling forward the water RAB by subtracting the value from the opening RAB each year. We discounted the total end-of-year depreciation to a total mid-year value to calculate the depreciation building block in the revenue model.

Table 7.6 Proposed depreciation, by water asset class (Dec 2014 real $'million)

Water asset class	2016-17	2017-18	2018-19	2019-20
Pipes	74.2	75.0	75.9	76.6
Non-pipes	56.9	58.4	59.8	60.8
ADP	29.7	29.7	29.7	29.7
ADP short lived assets	5.2	4.8	4.6	5.6
Corporate depreciable	12.4	13.4	14.5	15.4
Total end of year	**178.4**	**181.4**	**184.5**	**188.1**
Total mid-year value*	**174.7**	**177.7**	**180.8**	**184.3**

*Total mid-year value discounted by half a year's regulatory rate of return.

4 ESCOSA indicated we should update depreciation to account for actual capital expenditure.

7.5.5 Tax

The increased cost of debt for the second regulatory period will result in lower taxable income for regulatory purposes. So, our proposed tax building block for the second regulatory period is, on average, $17 million lower than that for the first regulatory period. We calculated regulatory tax using the same method used in the first regulatory period, as confirmed in ESCOSA's rate of return report[5]. The method assumes a tax expense for a benchmarked efficient entity using the cost of debt assumptions of the regulatory rate of return. We use this method as we are exempt from paying income tax to the Australian Government as we are wholly owned by the South Australian Government. To ensure competitive neutrality with private businesses, we pay income tax equivalents to the South Australian Government.

Unlike the rest of the revenue model, the tax calculation includes the impacts of inflation,[6] capital contributions from property owners and developers, and gifted assets from developers.

7.5.6 Community service obligation payments

Compared with the first regulatory period, we forecast CSO funding in the second regulatory period will decrease by 3.6% ($3 million) per year, on average. This decrease will add pressure to water prices.

The section 6 Ministerial Direction issued under the *Public Corporations Act 1993* and as part of the government's 2014-15 Budget[7] states the South Australian Government will make CSO payments for the non-commercial activities that the government requires us to undertake. Table 7.7 outlines the CSOs over the second regulatory period as stipulated by the section 6 Ministerial Direction.

Table 7.7 CSO payments for water services (Dec 2014 real $'000)

	2016-17	2017-18	2018-19	2019-20
Statewide pricing	64,930	63,340	61,800	60,290
Exemptions and concessions	6,700	6,770	6,830	6,900
Emergency management services	360	360	360	350
Emergency service concessions (SAPOL)	40	40	40	40
Administration of pensioner concessions	260	250	250	230
Government radio network	370	360	360	350
Total	**72,660**	**71,120**	**69,640**	**68,160**

7.5.7 Pass throughs (first regulatory period)

The pass through mechanism for the first regulatory period allows us to pass on to customers any material costs or benefits of unforeseen events or legislative changes that we could not plan for or mitigate. It banks material variances, passing through any permissible costs or benefits as part of the second determination.

At the time of writing our proposal, we had not experienced any pass through events that materially changed the costs of running our water service. For this reason, we do not seek to recover any additional costs for the first regulatory period through the second determination.

5 ESCOSA, *SA Water Regulatory Rate of Return 2016 – 2020, Final Report to the Treasurer*, March 2015
6 For tax purposes, we calculated inflation based on a CPI of 2.5%.
7 A number of the CSO values are stated at a whole of business level in the section 6 Ministerial Direction. We allocated them between water and sewerage.

7.6 Revenue adjustment mechanisms for the second regulatory period

7.6.1 Demand

As requested in ESCOSA's Framework and Approach, we propose a revenue adjustment mechanism for the second regulatory period. The mechanism that we propose:

- Calculates the annual variation in total revenue (that is, allowable revenue less actual revenue)
- Banks the annual revenue variations over the second regulatory period
- Assesses whether the total variation in revenue over the regulatory period is material. We propose a 1% materiality threshold (approximately $32 million)
- Adjusts the allowable revenue in the third determination by 50% of the total variation if the variation is material. To ensure price stability for the third determination, we propose to spread the adjustment over the full regulatory period.

We consider this approach shares forecasting risk evenly with customers, promotes price stability and accounts for the impact of demand changes on our revenue. Further, it meets the requirements of the Third Pricing Order for a revenue adjustment mechanism that is 'relevant and material' and that promotes 'a stable price path for retail services'.[8]

7.6.2 Pass through

The benefits or efficient costs of unforeseeable or uncertain events that occur during the second regulatory period are subject to a pass through mechanism. The mechanism enables us to pass through these benefits or costs to customer prices, on determination by ESCOSA. Its benefits are that it:

- Keeps prices down for customers, because our proposal includes only foreseeable, prudent and efficient expenditure
- Protects customers during the second regulatory period by passing on the benefits of unforseen events that materially reduce our costs
- Protects us during the second regulatory period by maintaining our future financial viability if an unforeseen event materially increases our costs.

The first determination outlined a pass though mechanism to apply to the first regulatory period. We propose a similar mechanism for the second regulatory period which will apply when:

- Our legal obligations change or an extraordinary event occurs, and the change affects the costs of providing our retail service
- The event is material and we could not have avoided it by acting prudently and efficiently
- We could not mitigate any cost impacts through prudent management.

The pass through mechanism for the first regulatory period allowed for the pass though of costs or benefits to be considered as part of the second determination. Although this supported price stability for customers it did not allow customers to get the immediate benefit of any cost reduction which we would pass on through reduced prices. It also did not consider the financial impact on our business. To address this outcome for the second regulatory period, we propose pass throughs be considered as they occur, with costs or benefits passed on to customers as part of the next annual price reset or, if practical, deferred to the next price determination to maintain price stability for customers.

8 Section 3.5 of the Third Pricing Order.

7.7 Summary

We focused on the affordability of water services for our customers when developing our proposal and assessing the required revenue for the second regulatory period. The allowable water revenue that we propose for the second regulatory period is, on average, 1.6% less than the allowable water revenue for the first regulatory period. This reduction will mean lower water prices for customers.

We developed the revenue proposal using the ESCOSA proposed method. We were guided by the approach used for the first determination if ESCOSA did not propose particular requirements.

The allowable revenue that we propose is based on current observable market inputs for the rate of return at the time of preparing this document. These inputs may be different when ESCOSA makes its determination and this would affect the final allowable revenue.

Chapter 8
Customer impacts and price benchmarking

KEY POINTS

Affordable water bills remain one of our key priorities. To achieve more affordable bills we reduced water prices by 6.4% in 2013-14 and we propose to reduce them again by 0.7% in 2016-17. We propose inflation only increases for the remaining 3 years of the second regulatory period. Under this proposal, water prices and customer bills will rise at a rate lower than inflation over the second regulatory period.

The low density of our statewide customer base is a key driver of water prices. Our water prices compare favourably against other jurisdictions when benchmarked by length of water mains and by customer numbers.

8.1 About our customers

We have 679,773 residential (household) customers, 44,563 non-residential customers and 27,269 commercial customers. While a number of non-residential customers consume large volumes of water, residential customers account for 66% of our annual water consumption (Figure 8.1).

Figure 8.1 Billed consumption, by customer type

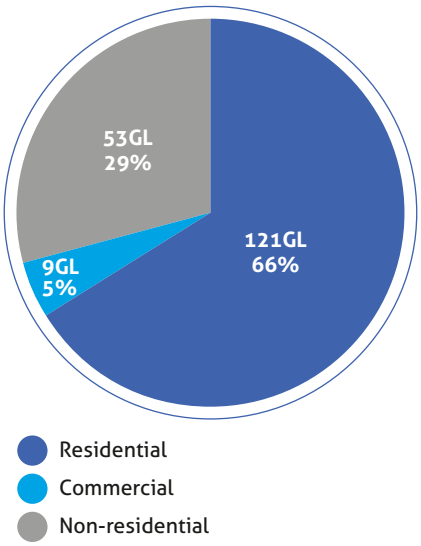
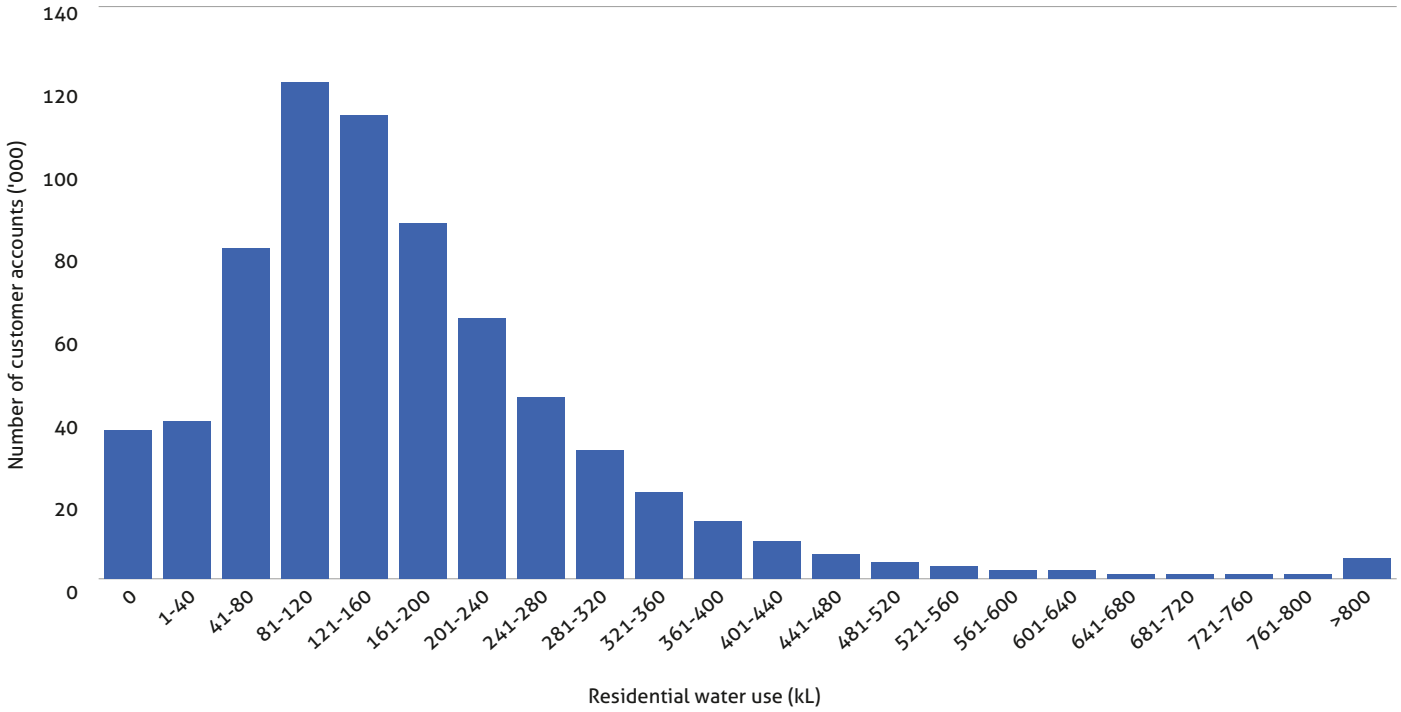


Figure 8.2 illustrates most residential customers consume around 80-160 kilolitres (kL) per year. However, as some residential customers consume large volumes of water, the average consumption per residential customer is around 184 kL per year.

Figure 8.2 Residential customers, by consumption (per year)



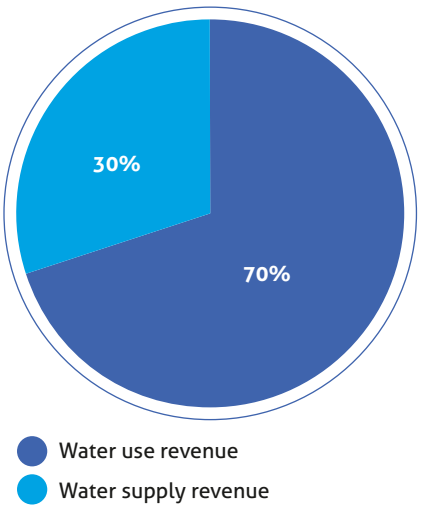
8.2 Our price structure

Our current price structure for water includes:

- A water supply charge – that is, a fixed amount paid quarterly to deliver water to a property
- A water usage charge – that is, a variable amount based on the volume of water used. Residential water use charges are calculated on a 3 tier pricing system, whereas non-residential water usage charges are calculated at a single rate per kL.

Figure 8.3 shows we earn 70% of our water revenue from water usage charges. This percentage is also similar for residential customers – around 65% of a typical residential bill relates to water usage charges. This shows that customers have a reasonable level of control over their water bills through their usage which is something they told us is important to them.

Figure 8.3 Split between water supply and usage revenue over the second regulatory period



8.3 Indicative price changes

Based on our proposed allowable water revenue (chapter 7), water prices will fall by 0.7% in 2016-17, but rise by inflation in each of the following 3 years. Affordability is a key concern for customers, so we worked to reduce prices by keeping our costs under control.

We set prices annually to achieve the allowable revenue determined by ESCOSA. Prices are usually set in May or June each year, following the Australian Bureau of Statistics (ABS) release of inflation values (for the 12 month period ending in March). We do not know the actual rate of inflation, so the price impacts in Table 8.1 are only indicative at this stage.

To estimate the impacts of our revenue proposal on customer prices, we calculated indicative prices and charges for each year of the second regulatory period, and then worked out indicative bills for average customers. We based these calculations on our proposed allowable water revenue (chapter 7).

Table 8.1 outlines the indicative water price changes we propose and the inflation estimates over the first and second regulatory periods. We propose an indicative decrease in water prices for customers of 0.7% in 2016-17, followed by inflation only increases in the following 3 years. This meets our commitment to keep price increases below the rate of inflation over the second regulatory period. After allowing for the impact of inflation the water price changes we propose equate to a 3.1% reduction in 2016-17 with no change in the remaining 3 years.

Table 8.1 Change in nominal water prices

	First regulatory period			Second regulatory period					Total (across both regulatory periods)
Change (%)	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total	
Water price	-6.4%	2.9%	1.3%	-0.7%	2.5%	2.5%	2.5%	6.9%	**4.3%**
Inflation*	2.5%	2.9%	1.3%	2.5%	2.5%	2.5%	2.5%	10.4%	**17.9%**

*Based on actual inflation for 2013-14 to 2015-16 (March to March, ABS, All groups – weighted avg. eight capital cities, 6401.0). We used a forecast of 2.5% for 2016-17 to 2019-20.

The indicative charges for the second regulatory period are shown in Table 8.2. These assume pricing structures stay the same and reductions are applied evenly across all customer groups.

Table 8.2 Indicative nominal water charges

		First regulatory period			Second regulatory period			
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Indicative residential water tariff								
Supply charge	$293	$275	$283	$286	$284	$292	$299	$306
Usage charge – tier 1 (<30 kL/quarter)	$2.42	$2.26	$2.32	$2.35	$2.33	$2.39	$2.45	$2.51
Usage charge – tier 2 (>30 kL/quarter)	$3.45	$3.23	$3.32	$3.36	$3.34	$3.42	$3.51	$3.60
Usage charge – tier 3 (>130 kL/quarter)	$3.73	$3.49	$3.59	$3.63	$3.60	$3.69	$3.78	$3.87
Indicative non-residential/commercial water tariff								
Supply charge/minimum charge*	$293	$275	$283	$286	$284	$292	$299	$306
Commercial property rate	0.0764%	0.0700%	0.0713%	0.0722%	0.0717%	0.0735%	0.0753%	0.0772%
Usage charge	$3.45	$3.23	$3.32	$3.36	$3.34	$3.42	$3.51	$3.60

*Charges to commercial customers are based on property value, subject to a minimum charge.

8.3.1 Demand assumptions

The indicative water price changes are based on assumptions of future water demand. We forecast water demand to start around 190 gigalitres (GL) per year in the second regulatory period, increasing to around 194 GL by 2019-20 (Table 8.3). These forecasts are slightly higher than the demand assumption used for the first regulatory period. Along with other elements of our proposal, they will help to lower water prices.

Table 8.3 Demand forecast for second regulatory period

Year	Demand (GL)
2016-17	190.1
2017-18	191.4
2018-19	192.9
2019-20	194.5

Weather is the main risk for forecasting annual water demand. The impact of a cool wet year compared with a hot dry year, for example, is around 15 GL. This difference equates to a variation of around $45 million per year in water sales.[2] To reduce this variation, we used median weather outcomes. We will deal with any variations in sales (positive or negative) via our proposed revenue adjustment banking mechanism (chapter 7), to ensure prices are not volatile over the period.

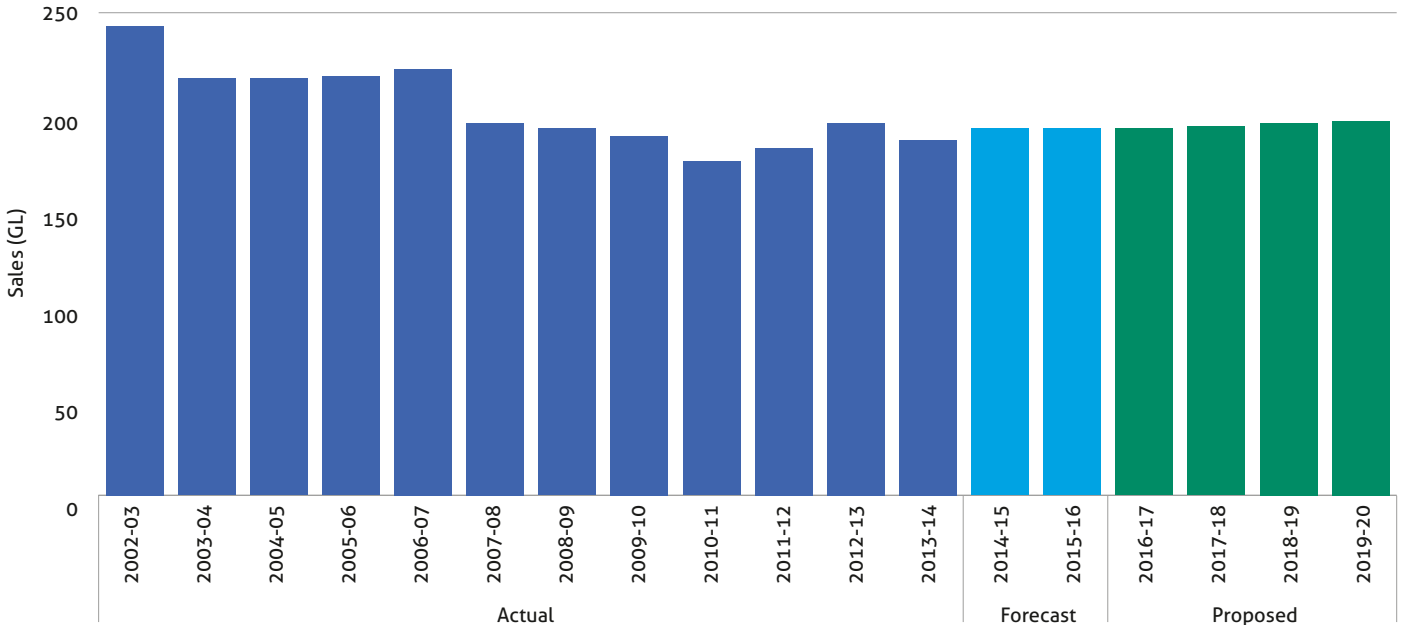
We derived our demand forecasts from a regression model that we developed with independent expert advice. Regression analysis relies on historical information to indicate future outcomes. Water sales fell significantly over the past 10 years due to:

- Water restrictions imposed in severe drought conditions
- Prudent water use and water conservation by our customers
- Price increases made to cover necessary investment in water security measures.

1 Sales throughout the year relate to water consumed during the financial year and charged at that financial year's price. However, due to the timing of meter reading, customers may not be billed for this consumption until the following financial year. In contrast, water billed during a financial year may actually relate to water consumed in previous financial years, and may be charged at a combination of previous and current prices.

Billed water sales dropped from 243 GL in 2002-03 to 184 GL in 2013-14 (Figure 8.4). We found no evidence of a 'bounce back' in water use after restrictions eased in 2010, and water use in 2014-15 is consistent with use levels when level 3 water restrictions were in place. For these reasons we do not expect water consumption to return to pre-drought levels in the second regulatory period.

Figure 8.4 Our water sales, 2002-03 to 2019-20



We are committed to keeping customer bills as low as possible over the second regulatory period. We propose reducing prices by 0.7% in 2016-17.

8.3.2 Customer growth assumptions

The indicative changes in water prices are also based on our assumptions of customer growth. The higher the customer growth, the lower prices can be (all other things being equal) because the allowable revenue is spread over more customers.

In the first regulatory period, actual and forecast customer growth has been around 0.9%, rather than the growth of 1.4% used in the first determination. As a result, prices for the first regulatory period were set lower than what was required to achieve the allowable revenue.

Table 8.4 outlines the average growth rates to 2014-15 by customer group. For the second regulatory period, we propose to adopt the 15 year average customer growth rate of 1.2% across residential, commercial and non-residential customers. Using a longer term average rather than recent history captures the overall trend for customer growth and provides a better pricing outcome for customers.

Table 8.4 Average customer growth rates by customer class to 2014-15

Average	Residential	Commercial	Non-residential	Total growth
5 years	1.3%	0.4%	0.1%	1.2%
10 years	1.4%	0.7%	0.6%	1.3%
15 years	1.3%	0.7%	1.1%	1.2%

This growth forecast is 0.2% per year lower than the growth assumption used in the first determination, so will add slight pressure to water prices in the second regulatory period.

8.4 Indicative customer bill impacts

We are committed to keeping customer bills as low as possible over the second regulatory period. The price reduction in 2016-17 will keep water bill increases lower than the rate of inflation over the second regulatory period.

Table 8.5 presents indicative bills over the second regulatory period for:

- A low water use household using 120 kL per year
- An average water use household using 184 kL per year
- A high water use household using 340 kL per year.

The table compares these indicative bills to 2015-16 bills for the same customer type.

Table 8.5 Indicative residential water bills (nominal $)

	2015-16	2016-17	2017-18	2018-19	2019-20
Low water use – 120 kL/year	568	564	578	593	608
Average water use – 184 kL/year	783	778	797	817	838
High water use – 340 kL/year	1,308	1,299	1,331	1,365	1,400

Table 8.6 shows examples of commercial and non-residential customer bills. While the bills will rise in nominal terms over the second regulatory period, they will do so at a rate lower than inflation.

Table 8.6 Indicative non-residential/commercial water bills (nominal $)

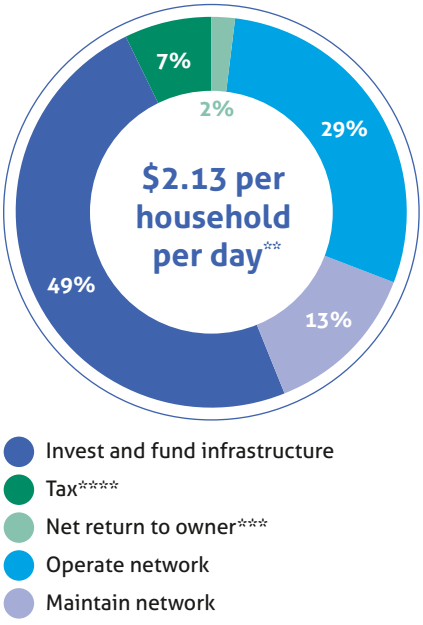
	Water use	Property value *	2015-16	2016-17	2017-18	2018-19	2019-20
Non-residential							
Paper printing	400 kL	N/A	1,630	1,620	1,660	1,703	1,746
Fish processing	4,000 kL	N/A	13,726	13,644	13,972	14,339	14,706
Winery	10,000 kL	N/A	33,886	33,684	34,492	35,399	36,306
Dairy manufacturing	19,000 kL	N/A	64,126	63,744	65,272	66,989	68,706
Iron and steel manufacturing	28,000 kL	N/A	94,366	93,804	96,052	98,579	101,106
Abattoir	60,000 kL	N/A	201,886	200,684	205,492	210,899	216,306
Commercial							
Fruit and veg shop	140 kL	500,000	831	826	846	868	890
Chicken shop	450 kL	580,000	1,931	1,919	1,965	2,016	2,068
Delicatessen	500 kL	290,000	1,966	1,954	2,002	2,054	2,106
Service station	600 kL	1,100,000	2,810	2,793	2,861	2,934	3,009
Restaurant	800 kL	900,000	3,338	3,317	3,398	3,486	3,575
Supermarket	1,200 kL	3,700,000	6,703	6,661	6,824	6,998	7,176
Car wash	3,000 kL	740,000	10,614	10,551	10,804	11,087	11,371
High rise hotel	30,000 kL	40,700,000	130,185	129,382	132,515	135,947	139,420
Major shopping centre	70,000 kL	500,000,000	596,200	592,300	606,900	622,200	638,000

*Property value is not applicable to industrial customers.

8.5 What does this pay for?

Our proposal represents value for money for our customers. We invest the majority of the money we receive from customers directly into the provision of water services (Figure 8.5). The government receives only marginal returns.

Figure 8.5 What water prices pay for*



*Based on 2016-17 bills and allowable revenue.
**Based on average residential customer using 184 kL of water per year (nominal $).
***Net return to owner is net of Community Service Obligation payments from the South Australian government.
****Tax is based on accounting values and paid to the South Australian Government as a tax equivalent.

8.6 Price benchmarking

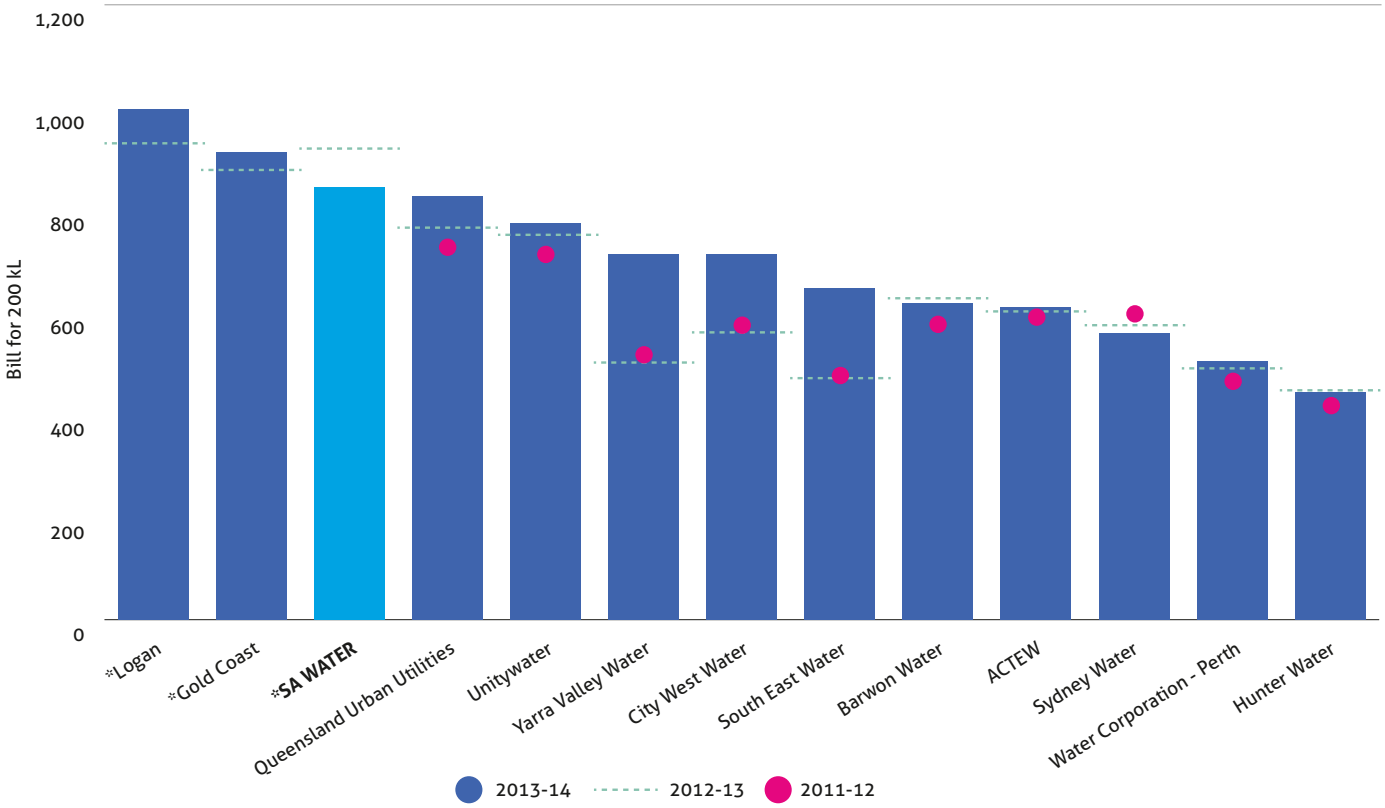
Water bills for our customers increased significantly from 2008-09 to 2012-13 as we invested in necessary water security measures to respond to unprecedented drought conditions. We understand the impact of these increases on customers. Customers elsewhere also faced price changes: water prices increased across Australia over the past 5-10 years as other utilities invested in water security.

Price setting is influenced by a range of factors unique to each utility including historical precedent, ownership structure, government policy, service levels, geography, customer profile and consumption patterns. Similarly, each utility has responded to drought conditions from a unique perspective.

Despite this difficulty, Figure 8.6 compares 2012-13 and 2013-14 water bills (based on consumption of 200 kL per year) across a peer group of large interstate utilities. We sourced this information from the 2013-14 *National performance report* (NPR).[3] We were the only utility to significantly reduce bills between 2012-13 and 2013-14 for customers using 200 kL of water per year. We are proud of this achievement as it reflects our strong drive for efficiency in the first regulatory period. The lower bills our customers received in 2013-14 moved us from having the second highest bill to the third highest bill of the peer group.

2 Bureau of Meteorology 2014, *National performance report 2013-14: urban water utilities*, Part B dataset.

Figure 8.6 NPR interstate water bill comparison of utilities with 100,000+ connections, for water consumption of 200 kL

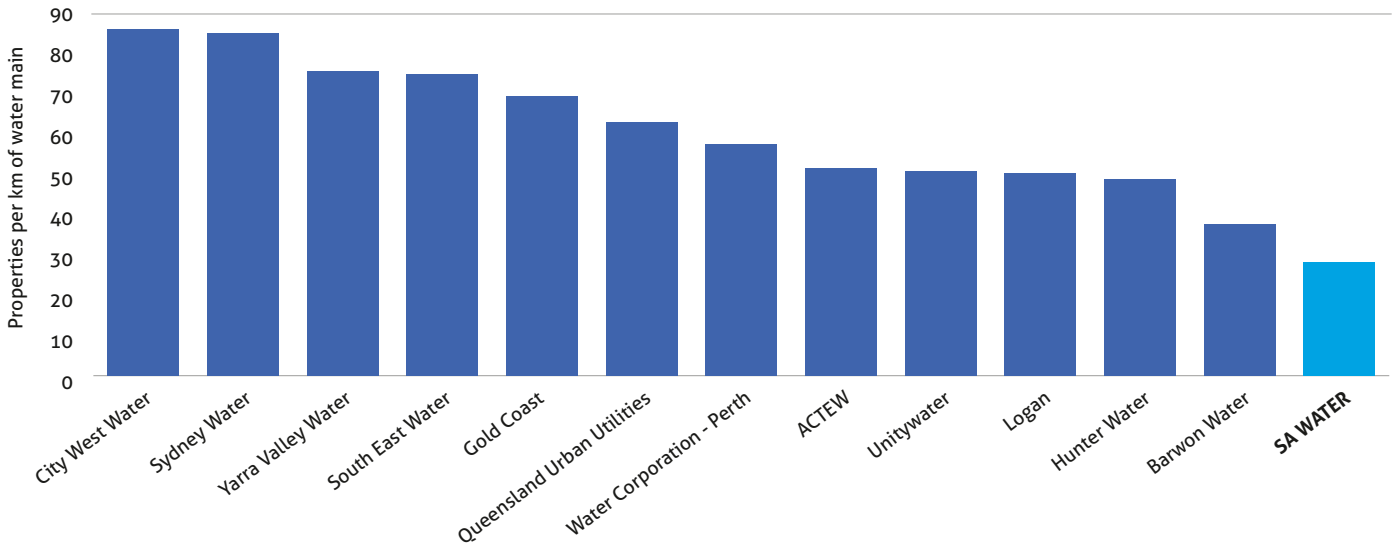


*Did not report against the indicator for 2011-12

Benchmarking shows utilities with more connections per kilometre of water main tend to have lower prices because they can recover costs from a wider customer base.

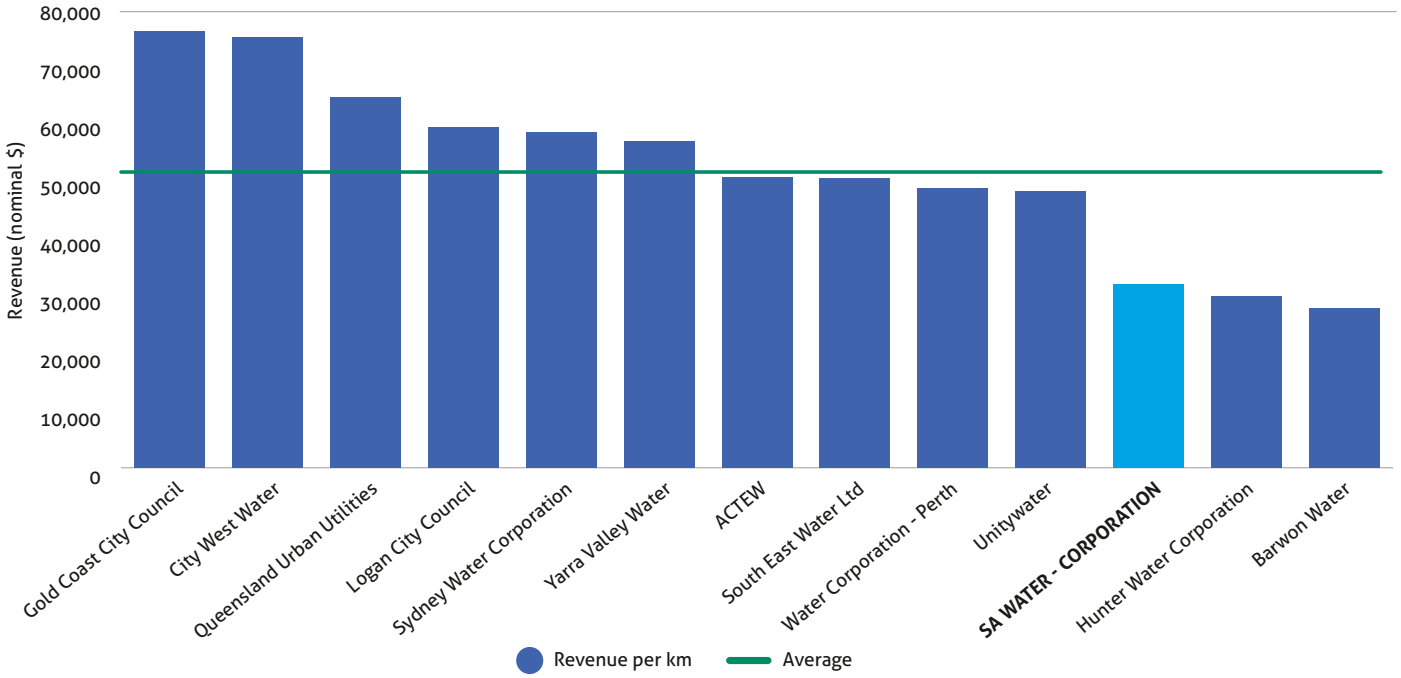
We serve the lowest number of properties per kilometre of water main of all utilities in the peer group (Figure 8.7). This means our cost of supply is spread over a smaller number of customers. Further, we require longer pipes, and more diverse water sources, to deliver water to our customers, who are spread over a large geographic area.

Figure 8.7 Properties serviced per kilometre of water main, by utility, 2013-14



To effectively benchmark water prices against interstate utilities we compared the revenue received per kilometre of water main. This analysis shows the revenue we earn per kilometre of water main is well below the average of the peer group (Figure 8.8). Our investment in providing water services across the state, and the resultant low density of customers, is the main driver of our water price. Affordability of water prices is an ongoing challenge we are working hard to address in the second regulatory period.

Figure 8.8 Revenue per kilometre of pipe – water, 2013-14



8.7 Summary

We understand affordability of water bills is a key concern for customers and we are committed to reducing prices where we can. We propose a price reduction of 0.7% in 2016-17 with increases limited to inflation for the remaining 3 years of the regulatory period.

In recent years water prices have increased significantly to fund investment in water security infrastructure. This trend changed in 2013-14 when water prices reduced by 6.4% with increases limited to inflation for the remaining years of the first regulatory period. Our current pricing proposal will continue this path of below inflation price increases across the period.

Low density of customers across our statewide infrastructure is a key driver of water prices and our prices compare favourably against other jurisdictions when benchmarked by length of water mains and by customer numbers.

Our sewerage service

We are the major provider of sewerage services in South Australia. Our primary responsibilities are to plan, build, operate and maintain our sewerage networks and treatment plants to minimise environmental harm and to provide an effective sewerage service to our customers. We are one of the cheapest sewerage service providers in Australia according to national benchmarking. The following chapters of our proposal set out the levels of capital (chapter 9) and operating expenditure (chapter 10) we need to continue in a safe, reliable, efficient and prudent manner. Chapters 11 and 12 set out the required revenue to fund these levels of expenditure and the impacts on customer prices.

Our customers and levels of service

We collect, treat and dispose of sewage for customers across the state. We provide approximately 76% of the South Australian population with sewerage services. In 2014-15 we served 586,998 customers (account holders) and we continue to connect new customers every day. We have fewer sewerage customers than water customers because local councils provide the sewerage services in some regional areas, and some customers manage their own sewerage treatment and disposal needs. Figure S.1 and Figure S.2 show the diversity of our customer base in terms of customer type and location.

Figure S.1 Our customers, by type

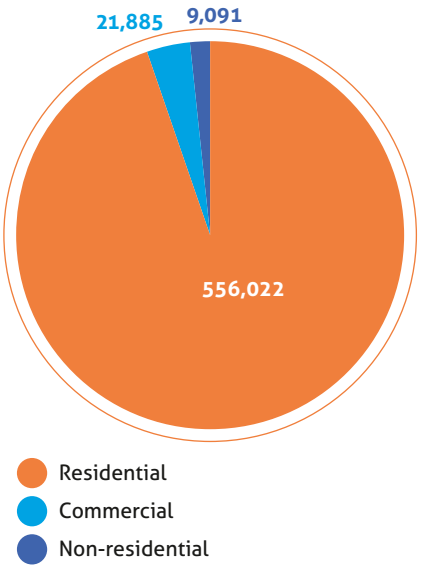
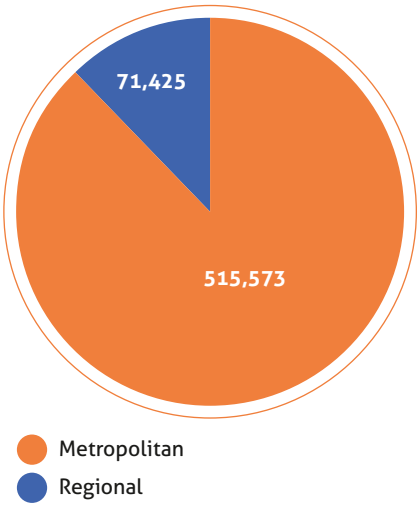


Figure S.2 Our customers, by location



We provide approximately 76% of the South Australian population with sewerage services across 8,853 kilometres of sewerage mains, 25 wastewater treatment plants and 4 recycled water treatment plants.

As part of our customer engagement program, Your Say, customers told us how quickly we respond to issues with their sewerage services (and how frequently they occur) is important to them. They also told us they are satisfied with the levels of service we currently provide in relation to their sewerage services. For this reason, our proposal focuses on maintaining those service levels as efficiently as we can.

Our commitment to delivering the same levels of service more efficiently is driving lower sewerage prices for customers. In addition to lower prices, our Customer Assist Program supports residential customers experiencing temporary or permanent financial hardship. Our strategy of early support means a large percentage of customers can successfully exit the program.

Our infrastructure

To deliver services to sewerage customers, we operate and maintain 8,853 kilometres of sewerage mains, 25 wastewater treatment plants (WWTPs) and 4 recycled water treatment plants. These assets, with a regulatory value of around $3.5 billion, are spread across the state (Figure S.3 and Figure S.4).

Our WWTPs employ a range of technology, from modern, activated sludge processes to more traditional technologies at our older treatment plants. This technological range affects the way we operate each plant and the costs that we incur to operate them.

Our largest WWTP, Bolivar, services approximately 68% of metropolitan customers, and treats and disposes of 86% of Adelaide's trade waste. It is a critical metropolitan plant, and we need to maintain it to ensure its reliability.

A number of other WWTPs are experiencing growth, leading to capacity issues that we will need to address during the second regulatory period.

Population growth in the southern suburbs, for example, is causing capacity issues for the Aldinga WWTP. The licence for the Aldinga WWTP requires 100% re-use of the treated sewage, which rules out discharge to the ocean. However, due to recent capacity issues, emergency discharge to the ocean has been required on some occasions (with EPA approval). This cannot continue and needs to be rectified – we propose to address this issue (see chapter 9).

Likewise, Murray Bridge WWTP (servicing approximately 14,000 people) has experienced growth in sewerage connections of 2% per year over the past 5-10 years. The WWTP is now operating 20% above its nominal design capacity. Further, residential development in close proximity to the WWTP means odour complaints are becoming an issue. Based on historical growth and current demand, the Murray Bridge WWTP will not be capable of servicing future demand without expansion in the second regulatory period.

Customers told us how quickly we respond to issues with their sewerage services (and how frequently they occur) is important to them.

Figure S.3 Greater metropolitan sewerage service areas

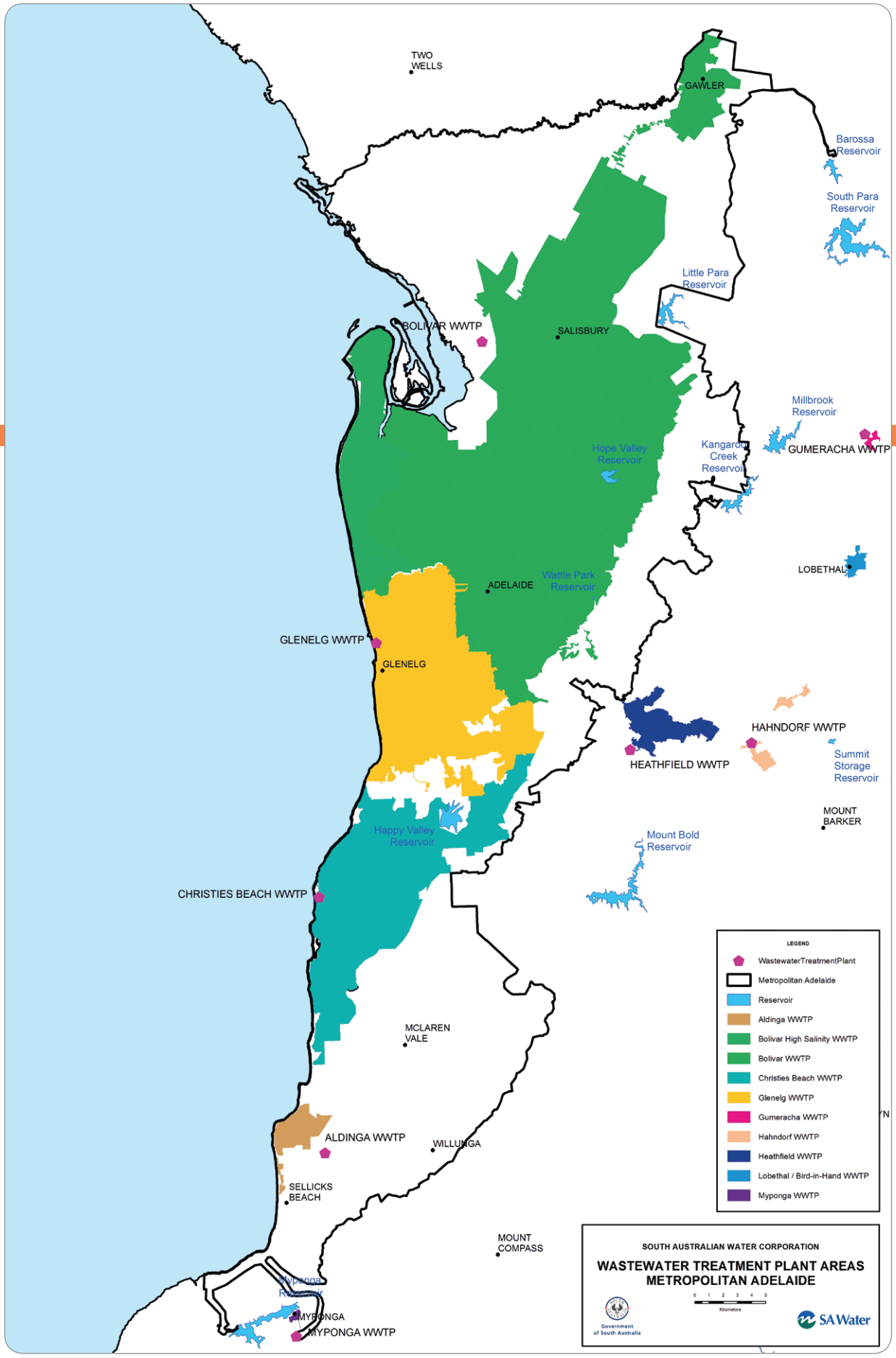
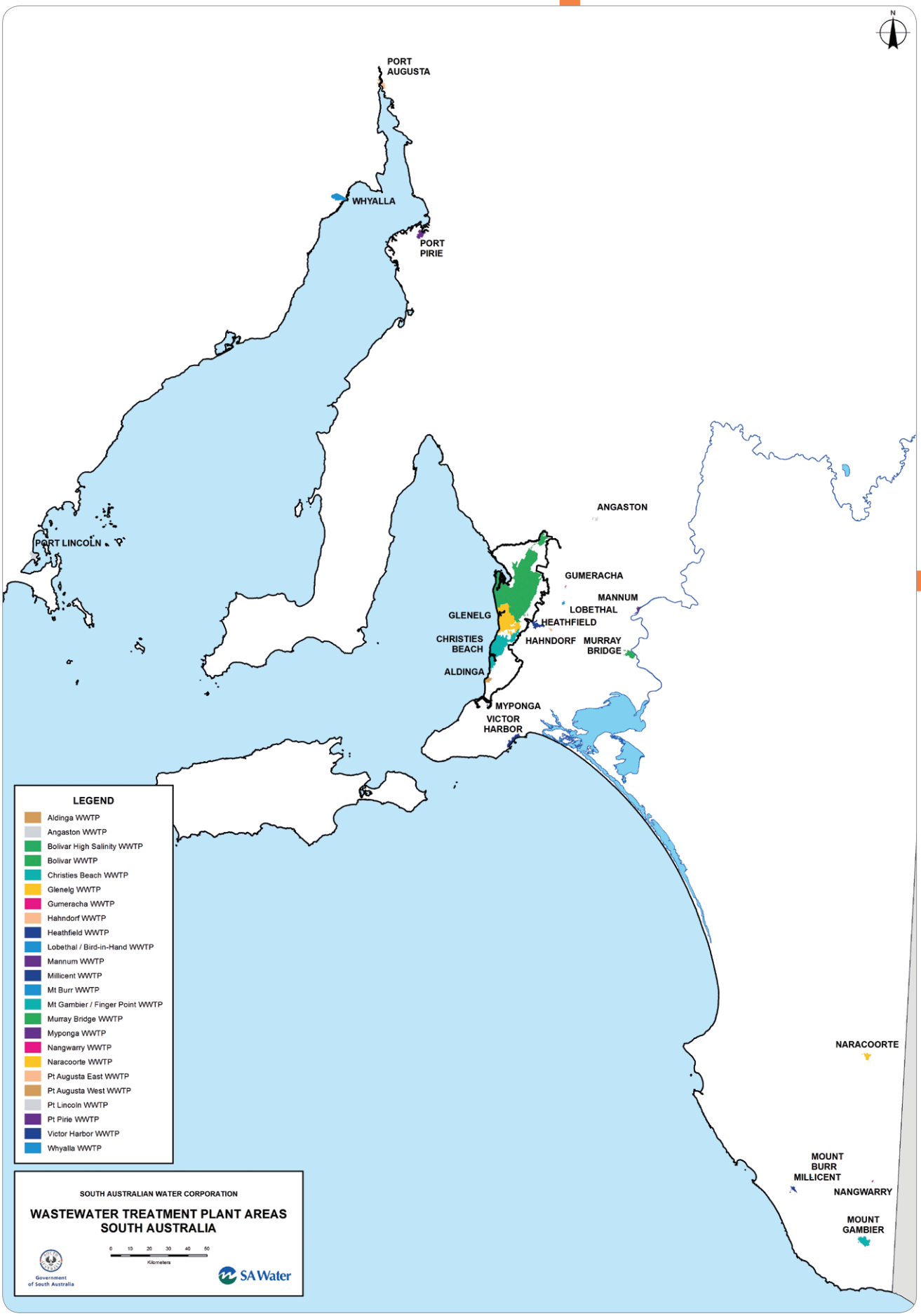


Figure S.4 Statewide wastewater treatment plant areas



Environmental impact

Sewerage services

We discharge treated sewage by-products to the Gulf St Vincent, the Eyre Peninsula coastal region, the North Spencer Gulf, the Otway coastal region and a number of inland waterways. Bio-solids are also a by-product of sewage treatment, and we re-use them in broad scale agriculture. We closely manage our discharges to minimise our impact on the receiving environments and to meet our environmental obligations as efficiently as we can.

The EPA monitors and regulates our sewerage activities under the *Environment Protection Act 1993*. The Act considers sewage treatment a 'prescribed activity of environmental significance', for which we must hold EPA licences. The licences set out our environmental obligations.

Sometimes, specific environmental outcomes are sought. The EPA uses environment improvement programs (EIPs) through licence conditions as a regulatory tool to achieve these outcomes. Since their introduction in the mid 1990s, EIPs have led to significant improvement in discharge to marine and inland receiving environments:

- Nitrogen loads from our metropolitan WWTPs have reduced from around 2,500 tonnes to 650 tonnes per year. The current target is to further reduce nitrogen loads to 300 tonnes per year by 2030
- Our Victor Harbor and Bird in Hand WWTPs have ceased summer discharges to inland waters, significantly reducing nutrient loads discharged to the aquatic systems. We have also maximised our opportunities to supply recycled water
- We significantly reduced the nutrient load discharged to the Spencer Gulf by constructing a recycled water treatment plant to supply Whyalla.

EIPs are currently in place for the Murray Bridge and Port Lincoln WWTPs.

The EPA also monitors our sludge and bio-solid management. Although we use by-products wherever possible – including giving them to farmers to use as fertiliser – some sites need ongoing improvement to ensure compliance. Based on risk assessment, we employ the most prudent and efficient solution to meet our environmental and health obligations in this area. Solutions vary from capital works to increased monitoring.

We are obliged under the *Environment Protection Act 1993* to not let our networks harm the environment. Sewage overflows can be very harmful to the environment and to public health, so they are a concern to the EPA. We have an overflow abatement plan to manage this risk according to the EPA's Code of Practice for Waste Water Overflow Management and Environment Protection (Water Quality) Policy.

To comply with our environmental obligations, we have an environmental management system certified to the Australian and international standard AS/NZS ISO14001:2004. The system ensures we identify and regularly review environmental risks, and focus on them to improve our environmental performance.

During Your Say we consulted with our customers on the costs to comply with environmental protection. Our customers are supportive of the costs to protect the environment for future generations and were keen to learn more about the proposed action and timeframes to protect the Adelaide coastal environment.

Nitrogen discharges

The Adelaide Coastal Waters Study (released by the EPA in 2006) and subsequent Adelaide Coastal Waters Quality Improvement Plan are continuing to drive significant change in our sewerage service. They seek to address the declining health of seagrass beds and reefs off the Adelaide coastline caused by nutrients (primarily nitrogen), suspended solids (or sediments) and coloured dissolved organic matter from discharge (including treated sewage, stormwater runoff and other industrial discharges) to the coastal water.

Since the release of the Adelaide Coastal Waters Study, we have conducted significant work to reduce our release of nutrients and suspended solids from WWTPs located along the Adelaide metropolitan coastline into the Gulf St Vincent. This action has reduced our nitrogen load to the Gulf St Vincent from 1,204 tonnes in 2003-04 to 650 tonnes in 2013-14. We have achieved much of the reduction to date through significantly increasing the amount of treated sewage re-used, small scale capital projects and operational optimisations at the treatment plants. We expect the next step in nitrogen reduction to be more difficult and expensive.

We are committed to further reducing the nitrogen discharged to the Gulf St Vincent from our 3 large metropolitan WWTPs: Bolivar, Christies Beach and Glenelg. In line with EPA licence requirements, we are targeting discharge reductions of no more than 300 tonnes of nitrogen and 760 tonnes of suspended solids per year by 2030. Importantly, the EPA does not intend to increase the total nitrogen discharge limit on any licence with future catchment growth. This means, over time, we need to improve the efficiency of our WWTPs – our plants will need to work harder and smarter to process more waste from more customers with less nitrogen discharge to the gulf.

In the second regulatory period, we will provide an EIP to the EPA outlining a timetable and actions for reducing nitrogen and suspended solids release. Actions are likely to include increased re-use of recycled water, WWTP upgrades/optimisation, and the trialling/implementation of new technologies. We are also developing a model to predict the rate and extent of environmental recovery in the Gulf St Vincent for different discharge scenarios. We will use this information to inform future operational and capital solutions at our metropolitan WWTPs.

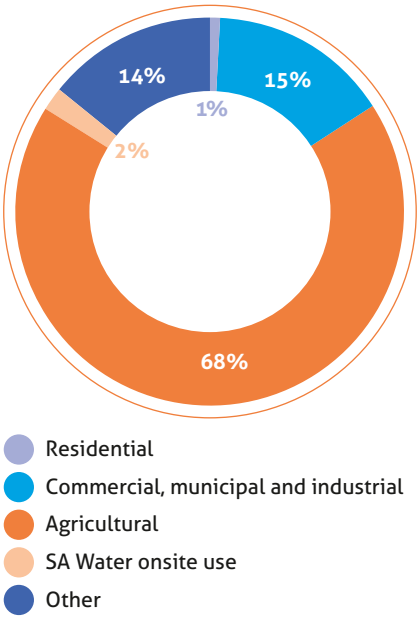
Recycling services

We recycle effluent through 17 schemes across the state. We are recognised as a national leader in water recycling, and consistently have one of the highest volumes and percentages of effluent recycled[1].In 2013-14 we supplied 28,048 ML of recycled water to our customers, which was 28% of the effluent that we collected.

We are committed to recycling water because it is the lowest cost method to meet our environmental obligations when treating and disposing of sewage. Our recycling schemes also support water security, by reducing reliance on surface and groundwater supplies.

During Your Say, customers told us they value recycling for its environmental benefit and as an alternative water source to support agriculture and social amenities. Figure S.5 shows agricultural customers use 68% of our recycled water supplies. Recycled water used on social amenities such as public parks and sporting fields is included in the 15% use by our commercial municipal and industrial customers. As a property owner, we also value recycled water and use it on our own sites.

Figure S.5 Uses of recycled water supplied, 2013-14



1 Bureau of Meteorology, *National performance report 2013-14, Urban water utilities*, May 2015, p. 31.

We must manage our recycling schemes in compliance with EPA licence conditions and the Australian Guidelines for Water Recycling (regulated by the Department for Health and Ageing). A number of our recycling schemes do not meet the requirements and we have committed to improving our compliance and risk management at these sites over the second regulatory period.

The first regulatory period represented a stable growth period for our sewerage network and our sewerage customers. The key challenges for the second regulatory period are meeting customer growth and responding to the EPA's nitrogen reduction targets. Consistent with our water service, we are focused on meeting customer and community needs for services they value at prices our customers can afford. The following chapters demonstrate how we will manage the challenges of delivering our sewerage services over the second regulatory period.

We are recognised as a national leader in water recycling, and consistently have one of the highest volumes and percentages of effluent recycled.

Chapter 9
Investment in our infrastructure

KEY POINTS

We are forecasting savings of $59 million against the sewerage capital expenditure allowance set in the first determination. We will achieve this result through a combination of prudent deferrals, capital delivery efficiencies and more favourable contract rates arising from a downturn in the construction market. We will achieve these savings without compromising levels of service to customers.

We propose to invest $480 million in sewerage infrastructure over the second regulatory period. Our annual average investment in sewerage infrastructure will be approximately 6% lower than the annual average sewerage capital expenditure allowance set in the first determination. Lower capital expenditure will contribute to more affordable sewerage prices over the longer term and we will do this without compromising levels of service to customers.

Our investment proposal for sewerage infrastructure aligns with our strategic direction, considers what our customers told us in Your Say and delivers a range of benefits to our customers, our workers, our owner and the environment. The environment is the primary driver of our sewerage capital proposal. We will direct approximately 75% of our sewerage capital investment towards protecting the environment and meeting environmental standards.

Our investment proposal for sewerage infrastructure is net of a further proposed efficiency saving of 5% ($25 million). It will be challenging achieving savings of this magnitude over the second regulatory period. However, we are confident our enhanced capital delivery framework and innovative procurement practices will enable us to make these savings.

We will continue to demonstrate mature governance behaviours by improving our asset management and capital delivery processes over the second regulatory period, allowing us to maintain reliable services for the long term.

9.1 Our proposal

Our sewerage infrastructure requires increasing levels of investment to meet more onerous environmental standards. To manage this increased investment, we challenged and will continue to challenge the need for each investment and we focused on balancing current and future outcomes to maintain levels of service for customers. Section 9.3 explains how we developed the capital investment proposal.

We propose efficient investment of $479.7 million in sewerage infrastructure over the second regulatory period, which benefits our customers, our workers, our owner and the environment (Table 9.1). Our proposed annual average investment in sewerage infrastructure is approximately 5.8% lower than the annual average sewerage capital expenditure allowance set in the first determination. Our performance in the first regulatory period is summarised in section 9.2.

Our investment proposal includes a savings commitment of approximately 5% in capital delivery costs (section 9.4.3). We will achieve these savings while delivering all the outcomes of the sewerage technical capital plan. This cost saving will help reduce prices for our customers.

Table 9.1 Sewerage capital expenditure by investment driver proposed for the second regulatory period

Investment driver	Proposed investment (Dec 2014 real $'million)
Safety for our workers	49.9
Reliability for the environment and our customers	146.0
Quality for the environment	230.9
Financial outcomes for our customers/owner	77.7
Technical capital plan	**504.5**
Less capital delivery efficiency (approximately 5%)	-24.8
Proposed investment (sewerage capital expenditure)	**479.7**

9.2 How are we performing in the first regulatory period?

9.2.1 We will deliver outcomes promised for the first regulatory period

For the first regulatory period, we committed to maintain our performance for sewerage services (i.e. number of chokes and service interruptions) and to meet community expectations and statutory obligations by effectively managing environmental, odour and noise requirements at our wastewater treatment plants (WWTPs). We are performing well against these commitments (see chapter 3). Table 9.2 summarises the overall outcomes we expect to achieve by expenditure category[1] from our sewerage infrastructure investment over the first regulatory period. Section 9.2.2 discusses how efficiently we delivered these outcomes.

Table 9.2 Key expenditure category outcomes for first regulatory period

Expenditure category	Forecast capital (Dec 2014 real $'million)	Key outcomes
Asset renewal Maintain asset performance by refurbishing or replacing ageing infrastructure	201.9	• Meeting target of 52 and 15 chokes per 100 km sewer mains across metropolitan and country networks in 2013-14 • Improved reliability from rehabilitation and renewals at major treatment and pumping facilities – Bolivar and Glenelg WWTPs and Hendon Queensbury wastewater pump stations (WWPSs) • Reduced investment based on asset condition assessment and risk assessment
External obligations Maintain or improve asset performance to comply with externally imposed standards	73.5	• Introduction of a new safety performance indicator and an improved approach toward management of high risk through incident reporting and auditing of sites to identify hazards • Compliance with EPA licences implementing environmental improvement programs • Reduced investment on the overflow abatement program
Growth Connect services to new customers and maintain asset performance to meet increases in growth	47.1	• Forecast 7,770 new sewerage connections (meeting projections of 1.5% and 1.4% for metropolitan and country regions respectively) • Reduced risk of overflows and environmental incidents from upgrades to sewerage network and WWTPs in line with growth forecasts

We are achieving the outcomes outlined in Table 9.2 are being achieved through delivery of asset programs[2] and a suite of major projects.[3]

Key asset programs across the first regulatory period include $66 million to improve the reliability of WWTPs by upgrading structures, $52 million for mechanical and electrical works at WWTPs, $46 million to enhance our WWTPs and sewerage network to cater for localised growth and $33 million of mechanical and electrical work on our sewerage network. Across asset programs we will deliver 227 minor sewerage projects (less than $1 million each) which are essential to treatment and network capability and for preventing environmental incidents.

During the first regulatory period, we forecast to spend $97.5 million on the 10 highest value major sewerage projects (approximately 30% of forecast capital sewerage expenditure for the first regulatory period). Table 9.3 summarises the status of the 10 major sewerage projects and the key outcomes they deliver. Table 9.4 provides further detail about how the forecast expenditure compares to the capital allowances of the first determination.

1 Expenditure categories are the method we have historically used to classify expenditure by driver i.e. the reason for undertaking the investment.
2 Includes minor projects and/or a program of work for an asset class (e.g. upgrades of reticulation mains).
3 Projects over $4 million for which we prepare major project justifications.

Table 9.3 Top 10 major project outcomes over first regulatory period (Dec 2014 real $)

Major projects to be completed in first regulatory period		
Major project	**Status and expenditure for first regulatory period***	**Key outcomes**
Bolivar WWTP primary grit, pre-aeration and sedimentation tanks concrete rehabilitation Rehabilitate corroded sedimentation tanks and concrete structures Improve facility processes of primary grit removal and pre-aeration	Due for completion March 2016 $33.3 million	• Tank capacity increased to meet forecast customer demand to 2050 • Reduced impact of odour on neighbouring community • Method of grit removal is more energy efficient • Forecast efficiency savings of $4.3 million over the life of the asset
Christies Beach WWTP capacity upgrade Increase treatment capacity from 30 to 45 megalitres per day	Completed August 2014 $15.2 million	• WWTP capacity increased to meet forecast customer demand to 2030 • Environmental benefits including plantings for the Noarlunga Downs wetlands
Hendon Queensbury WWPS Replace 78 year old WWPS with a new 420 litres per second WWPS	Due for completion September 2015 $11.1 million	• Meet current and future demand and reduce risk of a sewage overflow • Odour control solution implemented • Forecast efficiency savings of $2.3 million over the life of the asset
Gawler network capacity upgrade Construct a submersible pump station, install a 2.6 km rising main, undertake electrical upgrades and decommission existing infrastructure	Due for completion October 2015 $4.2 million	• Increased network capacity to meet 30 year growth demands • Reduced risk of sewage overflows and network failure through improved reliability of WWPS 103 (originally separate project)
Gawler WWPS 103 capacity upgrade Upgrade WWPS to improve reliability	Delivered by the Gawler network capacity upgrade	• Combining projects delivered overall efficiency savings
Port Noarlunga River Road WWPS upgrade Rehabilitate WWPS 234 wet well for mechanical, electrical, concrete and safety upgrades	Due for completion October 2015 $2.2 million	• Improved reliability of the WWPS will reduce risk of environmental incidents, provide a safe site for workers and the public and provide flexibility for future increases of sewage flows
Bolivar WWTP high salinity sequencing batch reactor anoxic tank Restore corroded reinforcement and apply liners to tank sections with concrete degradation	Due for completion January 2016 $2.3 million	• Improved reliability to reduce risk of asset failure and environmental incidents
Major projects which will not be fully completed in first regulatory period		
Major project	**Status and expenditure for first regulatory period***	**Reason project deferred or stopped/key outcomes**
Glenelg WWTP inlet screen replacement Modify inlet works and install new screening equipment	Due for completion September 2016 $23.4 million	• Capacity for higher inflows reducing risk of environmental incident • Improved safety on site and treatment performance • Reduced odour footprint from the inlet works
North LeFevre Peninsula sewage diversion Upgrade system to cater for anticipated growth on the LeFevre Peninsula and address odour issues at sewage discharge point	Partially deferred to second regulatory period Due for completion August 2018 $3.1 million	• Deferred due to slower than anticipated growth • Where possible, operational optimisation is applied to improve odour performance
Bolivar WWTP clarifier refurbishment Refurbish and optimise WWTP clarifiers 5 and 8 Includes modelling, investigating and repairing concrete, increasing pump capacity and applying new clarifier design	Due for completion July 2016 $2.7 million	• Sufficient sewerage capacity to meet demands from a growing population and industrial base • Improved reliability to prevent an environmental incident

*Actual expenditure where project complete and forecast expenditure where project is underway or yet to commence
WWTP = wastewater treatment plant. WWPS = wastewater pump station.

We invested heavily in our largest metropolitan WWTP (Bolivar) in the first regulatory period, to ensure reliable sewage treatment. We repaired critical structures dating back to the 1960s, which were severely corroded by WWTP gases. Specifically, we improved facility processes such as primary grit removal, pre-aeration and sedimentation tanks. Table 9.3 identifies the key major projects. Total investment at Bolivar WWTP over the first regulatory period is forecast to be $76.2 million

9.2.2 We are delivering capital efficiently in the first regulatory period

We aim to deliver fit for purpose capital solutions efficiently and effectively. We will continually review the need for proposed investments and the best delivery method to reduce the investment required.

ESCOSA's first determination provided a sewerage capital expenditure allowance of $381.9 million including an efficiency target of 1%. We are forecasting to achieve those efficiencies plus additional savings of $59.4 million. Lower capital expenditure without compromised service levels is good news for customers because it helps to lower customer prices. Figure 9.1 shows how we expect these forecast savings to occur across the first regulatory period.

Figure 9.1 Sewerage capital expenditure for first regulatory period

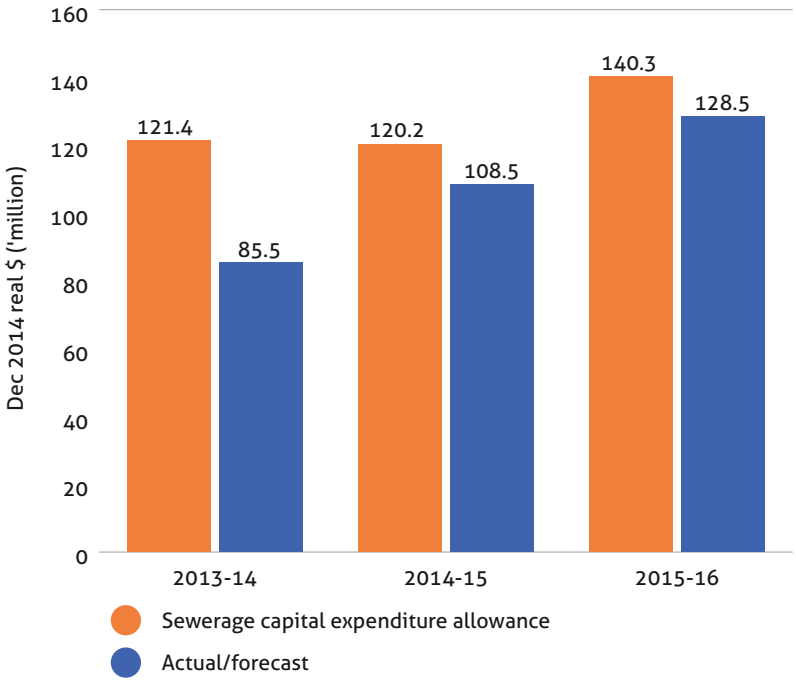


Figure 9.2 shows the forecast savings in sewerage capital expenditure by expenditure category. Asset renewal is the largest area of saving across the first regulatory period.

Figure 9.2 Sewerage capital expenditure over the first regulatory period

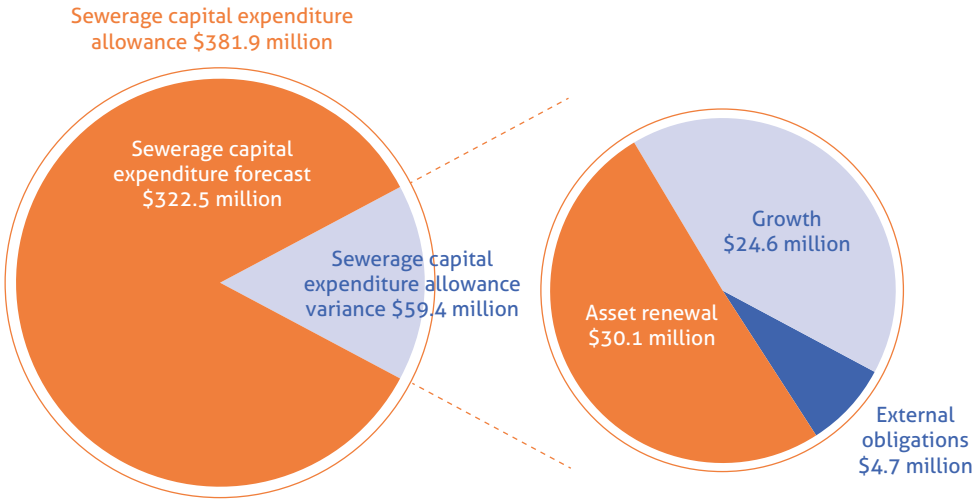


Figure 9.3 and Figure 9.4 show how the asset programs and key major projects contribute to the savings forecast. We analyse these results later in this section.

Figure 9.3 Forecast savings in sewerage capital expenditure over first regulatory period by asset program

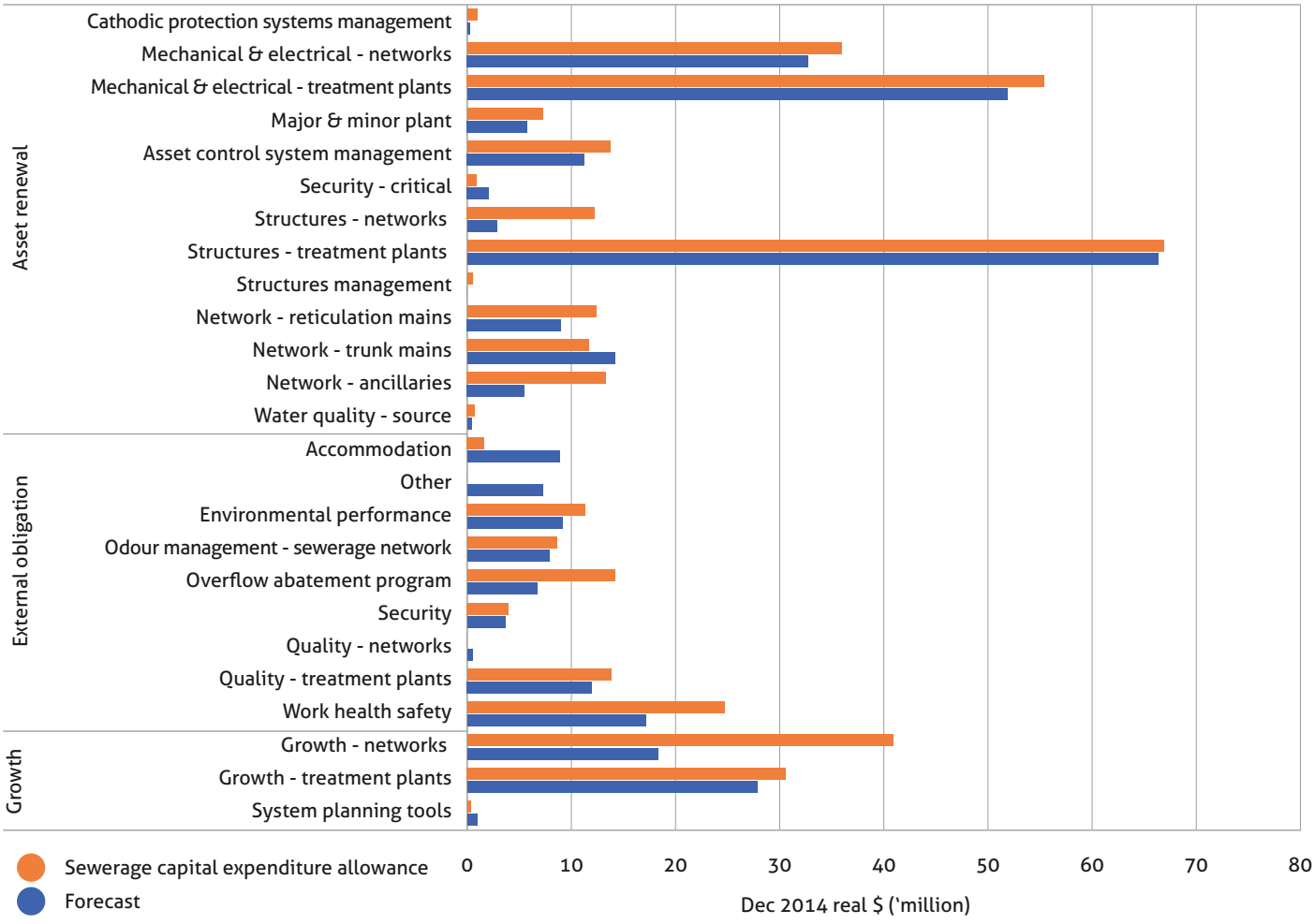
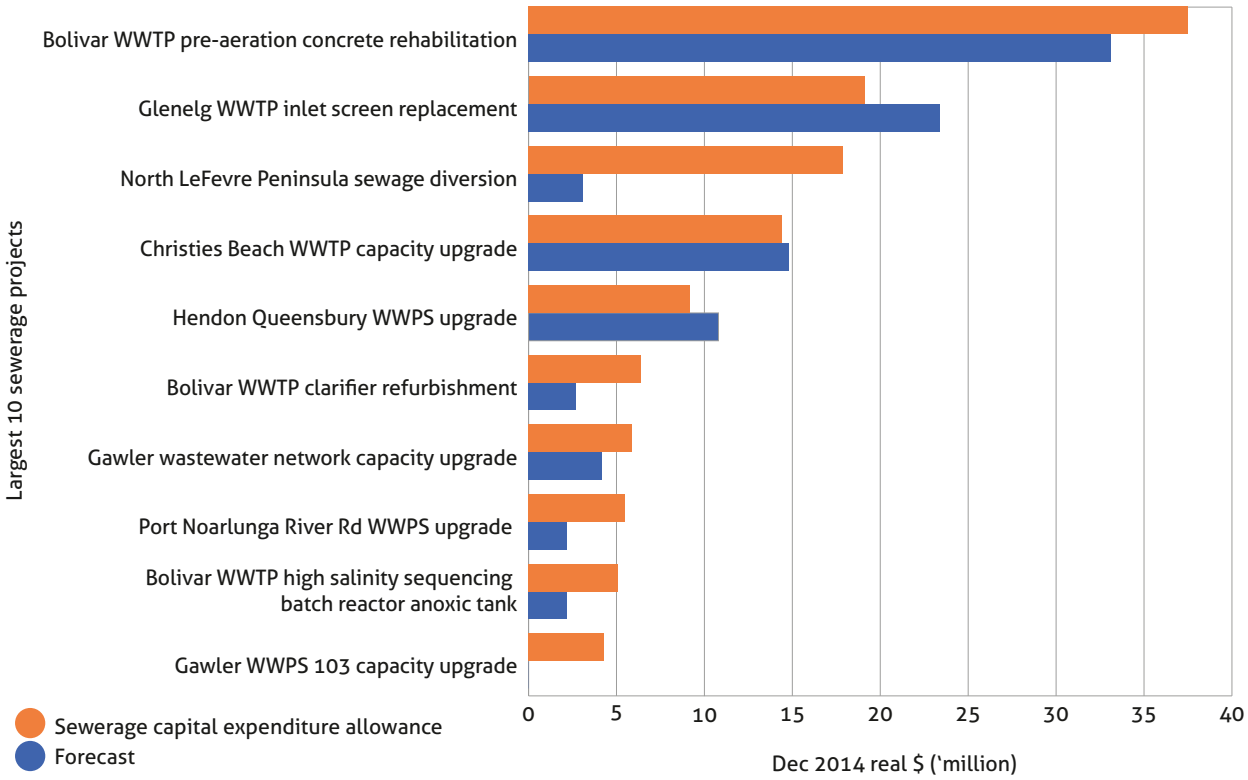


Figure 9.4 Forecast savings in capital sewerage expenditure over first regulatory period for 10 highest value sewerage projects



We recorded higher forecast costs over the regulatory period at Hendon WWPS and Glenelg WWTP, by delivering additional outcomes on site. At Glenelg WWTP, for example, we replaced mechanical and electrical infrastructure as part of the design to eliminate risks associated with working in confined space. These improvements are also the most cost effective way to address the risks associated with major overflows.

Table 9.4 summarises the savings against the sewerage capital expenditure allowance in the first regulatory period. We will save:

- $51.4 million through prudent deferral of projects while still maintaining our levels of service to customers
- $15.9 million through improved capital delivery
- $5.5 million from more favourable contract rates arising from a downturn in the construction market.

These savings are partly offset by reprioritising $13.4 million of sewerage capital to respond to challenges arising during the first regulatory period. We explore each of these reasons later in this section.

Table 9.4 How we will achieve the savings

	Forecast savings (Dec 2014 real $'million)	Forecast savings (%)
First determination sewerage capital expenditure allowance	381.9*	
Prudent capital planning (deferral)		
Renewals	-27.3	-7.1
Growth and external obligations	-24.1	-6.3
Efficiency	-15.9	-4.2
Market movement**	-5.5	-1.4
Reprioritisation***	13.4	3.5
Forecast savings	**-59.4**	
Forecast sewerage capital expenditure	**322.5**	

*Includes 1% efficiency savings as required in the first determination.
**Based on external market escalation of -1.7% per year on the capital expenditure forecast.
***Represents expenditure adjustments to meet challenges arising through the first regulatory period.

9.2.2.1 Growth and external obligations deferral

Demand for sewerage services is not occurring as quickly as expected in some locations. As a result, we are forecasting to save $24.1 million by prudent deferral across our growth and external obligations programs (Figure 9.3 and Table 9.4). For example, delivering the North LeFevre Peninsula sewage diversion project in the second regulatory period will save $14.7 million (Figure 9.4).

We forecast a further $7.4 million in savings on our overflow abatement program to minimise overflows from high risk sewerage network facilities or from areas of repeat overflows from storm water events (Figure 9.3). This will enable us to meet our external obligations for overflows and defer the completion of some works until required.

Expenditure on workplace health and safety (WHS) has been lower than expected in the first regulatory period. We have changed our approach to hazard management to better identify areas of high risk. Improvements to our treatment plants and network structures have been made addressing worker safety including upgrades to walkways and platforms. We have also identified a number of in-road WWPS that can be abandoned in place of gravity sewerage mains lowering the risk to workers as well as reducing ongoing operating expenditure.

9.2.2.2 Renewals deferral

We challenged the need to renew and refurbish our assets in the first regulatory period. We increased asset condition assessments and established internal governance processes to challenge project requirements and scope while maintaining customer service and environmental outcomes. We forecast savings of $27.3 million in the asset renewals expenditure category from these improved processes which are shown in Figure 9.3 and include:

- A saving of $9.4 million on network assets for our concrete structures. This program includes the management and performance of our sewerage network pumping stations and associated sewerage structures such as chambers, ventilation systems and drainage. Investment has been curtailed after closed circuit television inspection (on 36 conventional and 200 submersible pump stations) showed no immediate requirement for full rehabilitation. Boat chamber structures along the Adelaide trunk main have also been deferred as these are in better condition than anticipated
- A saving of $7.8 million on ancillary services for our network assets. This program aims to meet standards of service and asset reliability at lowest cost from our network service connections including ventilation stations, maintenance holes, educts and inspection points. Sewerage ancillary projects are being evaluated individually, leading to cost savings based on performance assessment with planned deliverables including proactive replacement of 200 high risk (safety) educt vents and upgrade to sewer mains castings along in roads to reduce safety hazards and some noise problems
- A saving of $6.7 million on mechanical and electrical networks and treatment plants, largely the result of favourable condition assessments indicating money does not need to be invested at this point in time.

9.2.2.3 Efficiency

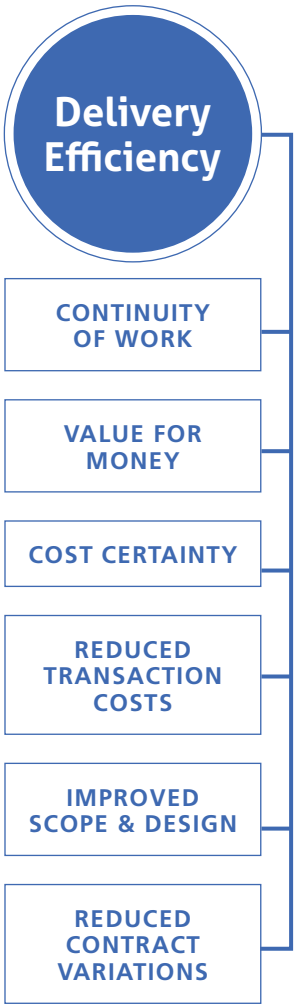
We forecast capital delivery efficiency savings of $15.9 million for sewerage capital expenditure in the first regulatory period. Our enhanced capital delivery framework was central to achieving these efficiencies. Key enhancements include an efficient capital delivery initiative, category management and estimating improvements.

Our **efficient capital delivery initiative** reduces costs by streamlining delivery methods and optimising contractor engagement. As part of this initiative we:

- Established effective capital delivery strategies by grouping projects so as to leverage synergies, exploit common delivery needs and promote smarter design and contracting
- Developed and implemented a comprehensive program management method and aligned stakeholders with this approach
- Improved and integrated the estimating function for capital planning and delivery
- Developed enabling capability in people, culture and technology.

We are trialling our improved approach across 4 program categories (strategically grouped projects) to test the governance arrangements and efficiency savings. Figure 9.5 shows the financial and non-financial benefits associated with the efficient capital delivery initiative.

Figure 9.5 Financial and non-financial benefits of the efficient capital delivery initiative



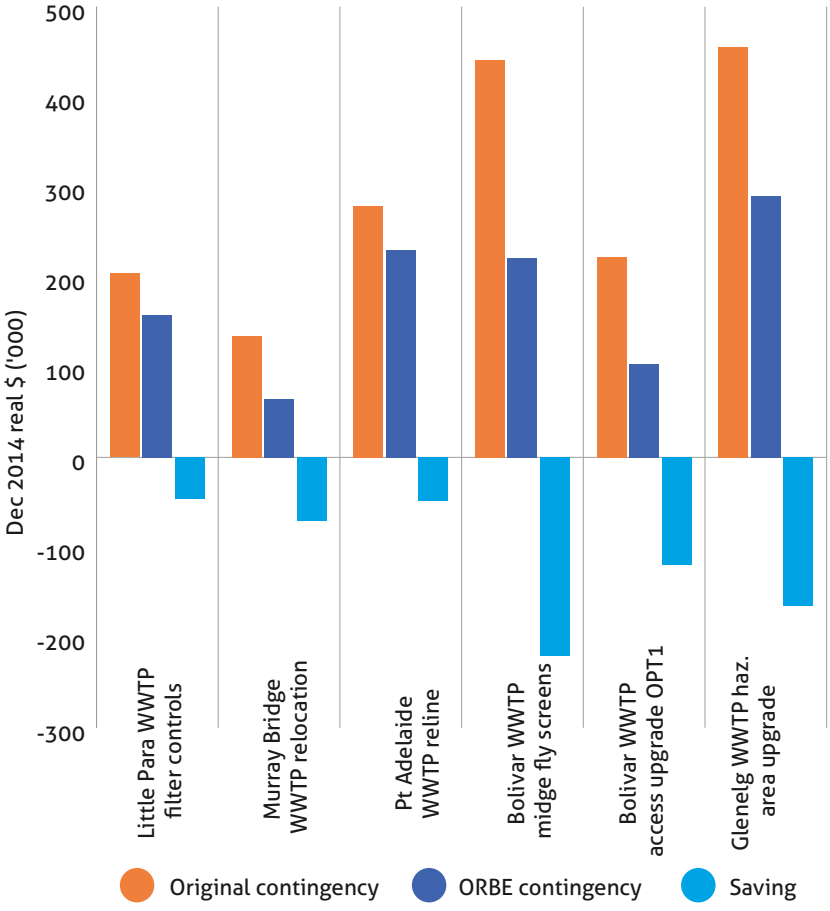
Category management is a strategic procurement approach used to achieve end-to-end management of the supply chain to drive innovation and commercial benefits. We started implementing category management during the first regulatory period. This approach achieves savings through:

- Applying more developed cost models and price reviews
- Initiating supplier agreements that ensure best price outcome for capital projects
- Adopting single contact points for expert knowledge of the market, suppliers and construction options
- Strategically bundling projects and allocating work based on contractor performance and value for money
- Reducing cost (from leakage/ rationalisation of suppliers) by channelling upcoming contracts through established arrangements.

We also have a more rigorous approach to estimating project costs and contingencies. These **estimating improvements** contributed to efficiency savings in the first regulatory period through:

- Improved governance and revised estimating guidelines to deliver a consistent and measurable pricing framework. The revised guidelines reflect recommendations from ESCOSA's first determination and ESCOSA's recommendations in the Framework and Approach for the second determination
- Enhanced cost databases to more accurately define scope and improved forecasting earlier in the project lifecycle
- Improved cost breakdown structures for all projects to support estimates for future capital projects
- Implementing opportunity and risk based estimating (ORBE) so the contingency for each major project/asset program is based on potential/known risks and opportunities rather than a predetermined amount. Figure 9.6 shows ORBE achieved significant savings for selected sewerage projects in the first regulatory period.

Figure 9.6 Contingency saving from using ORBE – selected sewerage projects



9.2.2.4 Market movements

Changing construction market conditions and falling input prices also contributed to the reduced sewerage capital expenditure during the first regulatory period. PricewaterhouseCoopers estimate a real decrease of approximately 1.7% per year for the sewerage capital expenditure allowance set in the first determination following more favourable contact rates arising from a downturn in the construction market.[4] This result equates to forecast savings of $5.5 million in the first regulatory period. Attachment E contains further detail about the PricewaterhouseCoopers analysis of the key cost drivers for our capital expenditure program.

9.2.2.5 Reprioritisation to meet new challenges

Providing sewerage services to customers and managing an extensive network of sewerage infrastructure presents challenges that are not always foreseeable when we submit our proposals to ESCOSA. During a regulatory period we reprioritise investment to ensure we respond to these challenges. We apply a robust reprioritisation process involving detailed project justification and independent management review to ensure we only invest when it is prudent. This approach means we only invest at an efficient level and we do not adversely affect customer outcomes in other areas.

We are reprioritising funds and savings in the first regulatory period. Table 9.4 shows we will reprioritise $13.4 million to meet infrastructure challenges and invest in priority areas including:

- $2.1 million for sewerage trunk mains to replace larger sections of pipelines than originally planned to reduce the risk of service interruptions. We identified the need for the additional investment as part of our asset condition assessment (in this case via closed circuit television inspections)
- $2.0 million for accommodation including upgrading our workshops and improving depot amenities across metropolitan and regional districts.

We consider these investments to be prudent. They were driven by enhanced information from physically examining our assets and by improving our infrastructure planning over the past 2 years to deliver required business/customer outcomes. We will deliver these investments efficiently.

9.3 How did we develop our sewerage capital proposal?

As an asset intensive organisation, our asset management approach needs to ensure efficient and effective outcomes so customers receive the services they require at the lowest possible price.

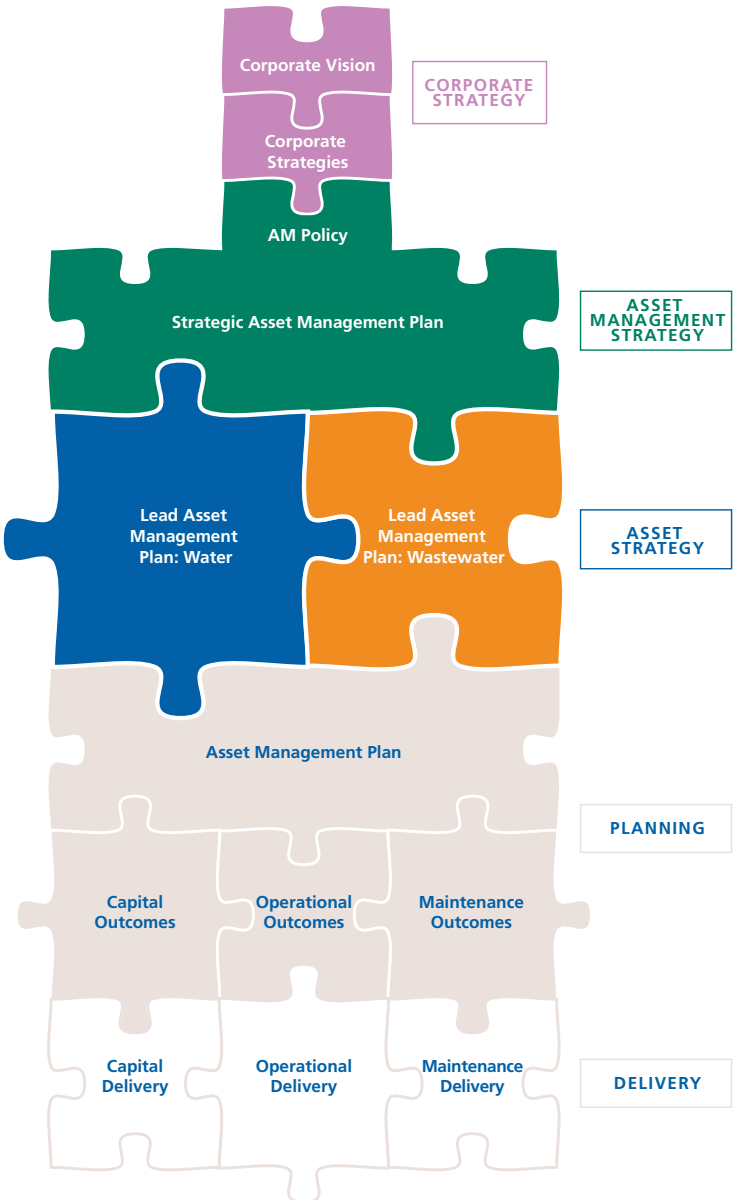
9.3.1 We have enhanced our asset management framework

Consistent with mature company governance our asset management framework has continued to evolve throughout the first regulatory period. Specifically, we updated the asset management framework to reflect the international standard for asset management (ISO55000 series) published in late 2014. Our asset management framework, illustrated in Figure 9.7, has a line of sight between our corporate vision and strategy (attachment A), our overarching asset management policy (attachment D) and our strategic and lead asset management plans provided to ESCOSA. This line of sight is prominent in all documents we use to justify capital expenditure for the second regulatory period.

4 PricewaterhouseCoopers, *Capital expenditure indexation review for the first regulatory period*, March 2015

Importantly, our enhanced asset management framework aligns proposed capital investment to primary investment drivers. This alignment means we understand how our investment in sewerage infrastructure benefits our customers, our workers, our owner or the environment. We also understand how the proposed investment helps deliver our strategic direction as each investment driver contributes to the key performance outcomes outlined in our *Overview of Strategy 2016-20* (attachment A). Table 9.5 lists the investment drivers for sewerage infrastructure.

Figure 9.7 Our asset management framework*



*Documents supporting the asset management framework are available for ESCOSA as part of the second determination.

Each investment driver has a target level of performance for the second regulatory period as detailed in Table 9.5. We set the target levels of performance after considering the expectations of our customers and stakeholders and based on our performance against business key performance indicators (KPIs) in the first regulatory period. If our performance at June 2014:

- Met or exceeded the target for the first regulatory period we have adopted the new level of performance as our target for the second regulatory period. The only exception is for total overflows because this performance is heavily influenced by weather. We targeted continuous improvement for this target instead
- Did not meet the target for the first regulatory period, we either continued with the existing target for the second regulatory period (e.g. odour complaints) or we targeted continuous improvement in line with our strategic direction (e.g. serious injury frequency rate).

Our proposals for the second regulatory period reflect any additional or reduced levels of investment we need to meet these targets during the period.

Table 9.5 Investment drivers and target performance

Investment driver	First regulatory period		Second regulatory period
	Target performance	Actual performance at June 2014	Target level of performance
Safety for our workers	Serious injury frequency rate <8.6	11.44	Serious injury frequency rate <5 by 2020
Reliability for the environment and our customers	<290 internal overflows per year*	217	217
	100% compliance with Department for Health and Ageing licence	100%	No change to target
	<86 total overflows type 1 and 2 reportable incidents per year	69	77 per year by 2019-20
Quality for the environment	100% compliance with EPA licence	100%	No change to target
	<450 odour complaints associated with sewerage networks	514	No change to target
Financial outcomes for our customers/owner	Provide long term financial benefit	100%	No change to target

*Work undertaken to achieve this target level of performance is part of our maintenance program with associated costs treated as operating expenditure.

As part of our preparation for the second regulatory period we also increased the number of asset condition assessments we undertook to ensure we were as informed as possible about the inherent risk of our assets. We used this information to compile our strategic and lead asset management plans which have driven our proposed investments.

9.3.2 We applied a robust planning and governance process

We developed our proposal for sewerage capital expenditure using an extensive business planning and consultation process to align with our strategic priorities, including addressing the feedback from Your Say and stakeholder engagement. We also applied a comprehensive governance process to address competing priorities and to ensure our proposals are prudent and efficient. Specifically, we:

- Consolidated project, program and portfolio information to understand the current profile of investment and the current performance of our infrastructure
- Identified gaps between current asset performance and medium and long term requirements
- Developed a sewerage technical capital plan to drive future performance of our infrastructure, which included management review and prioritisation to remove investments that did not pass prudency and efficiency tests
- Determined a capital delivery efficiency target for the second regulatory period to arrive at our sewerage capital proposal.

Using this process, we consider our sewerage capital proposal for the second regulatory period is:

- Prudent, containing only essential investment to deliver the required levels of service at an acceptable level of risk
- Efficient, based on lowest cost solutions and efficient costs and including a proposed efficiency target
- Aligned with customer and stakeholder expectations based on our more detailed understanding of their needs.

We are confident:

- The 25 year investment profile balances short term and long term planning to avoid unnecessary spikes in expenditure with potential price shocks
- Our proposal is sufficient to avoid unacceptable impacts on levels of service, or unacceptable risk during the period and beyond
- The risks and consequences of projects not proceeding are understood given the significant number of condition assessments we undertook across all asset types
- Our customers, our workers, our owner and the environment will receive clearly defined benefits from our proposed investment.

9.4 Our proposal for the second regulatory period

9.4.1 The sewerage technical capital plan

The sewerage technical capital plan is the level of investment we consider necessary to meet the performance targets outlined in Table 9.5. It is the level of investment we need to deliver benefits to our customers, our workers, our owner and the environment. The values in the sewerage technical capital plan do not include our proposed capital delivery efficiency (see section 9.4.3).

We propose a sewerage technical capital plan of $504.5 million for the second regulatory period. On average, this figure is 0.9% lower per year than the sewerage capital expenditure allowance set in the first determination. This proposed level of investment will address increasing environmental standards and localised population growth. It also accounts for asset risks we identified through our improved asset management process.

Table 9.6 compares the proposed sewerage technical capital plan by investment driver to the sewerage capital expenditure allowance for the first regulatory period. The comparison is based on annual averages given the different length of the regulatory periods (3 years compared with 4 years). The environment is a key driver of our sewerage capital proposal. Two investment drivers – quality for the environment (reflecting higher environmental standards) and reliability for the environment (reflecting localised population growth) – account for approximately 75% of our sewerage capital investment. The quality for the environment investment driver shows large increases in average annual investment of 43.5%.

Table 9.6 also shows our proposed capital delivery efficiency which is discussed in more detail at section 9.4.3.

Table 9.6 Comparison of capital expenditure across regulatory periods (Dec 2014 real $'million)

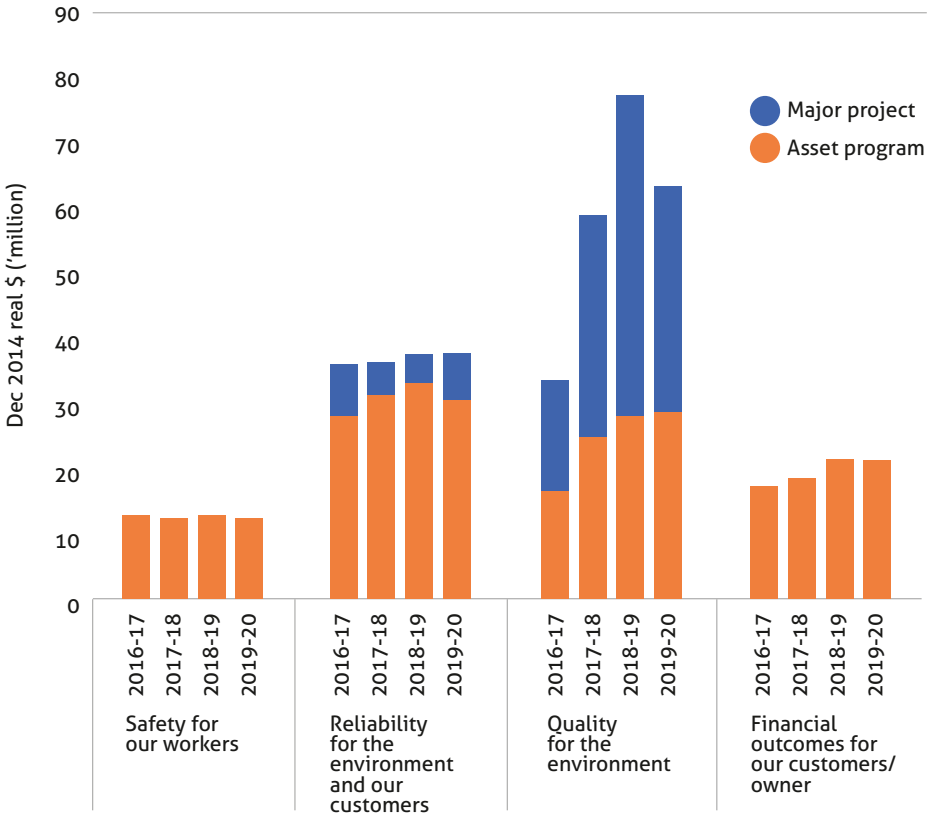
Investment driver	First regulatory period		Second regulatory period		Annual average variance (%)
	Capital expenditure allowance (3 years)	Annual average	Proposed capital expenditure (4 years)	Annual average	
Safety for our workers	30.3	10.1	49.9	12.5	23.8%
Reliability for the environment and our customers	144.5	48.2	146.0	36.5	-24.3%
Quality for the environment	120.5	40.2	230.9	57.7	43.5%
Financial outcomes for our customers/owner	86.6	28.8	77.7	19.4	-32.6%
Total (Technical Capital Plan)	**381.9**	**127.3**	**504.5**	**126.1**	**-0.9%**
Less capital delivery efficiency (approximately 5%)*			-24.8	-6.2	
Proposed investment (sewerage capital expenditure)	**381.9**	**127.3**	**479.7**	**119.9**	**-5.8%**

*Proposed efficiency has not been applied across investment drivers because we will determine how to achieve these efficiencies over the course of the second regulatory period.

Figure 9.8 summarises the proposed sewerage capital expenditure for each year of the second regulatory period by investment driver. It shows how much of the capital expenditure we will deliver as major projects and how much we will deliver through asset programs.

Sections 9.4.1.1 to 9.4.1.4 provide more detailed analysis of the proposed capital expenditure. Consistent with ESCOSA's Framework and Approach, detailed business cases for projects greater than $4 million and summary information for asset programs have been made available to ESCOSA.

Figure 9.8 Summary of proposed investment for second regulatory period by investment driver



We propose to invest $480 million in sewerage infrastructure over the second regulatory period. This includes a commitment to achieve 5% capital delivery efficiency to reduce costs for customers.

9.4.1.1 Safety for our workers

We aim to provide a safe working environment for all of our employees. We propose to invest $49.9 million on this investment driver over the second regulatory period which is 23.8% higher than the capital expenditure allowance for the first regulatory period (Table 9.6). This reflects a more proactive spend to meet our core business value of 'safety above all else'. Our major focus, as shown in Table 9.7, is the workplace health and safety improvement asset program, which seeks to reduce safety risks by enhancing or renewing existing infrastructure. Examples of our investment in this area include replacement of ladders, railings and mesh walkways. We do not propose any major projects for this investment driver.

Table 9.7 Safety for our workers – key proposed investment in second regulatory period (Dec 2014 real $)

Key asset program*	Details	Proposed investment
Workplace health and safety improvement	Reduce the number of 'serious incidents' associated with infrastructure	40 million

*Shows only the highest value asset program for this investment driver.

9.4.1.2 Reliability for the environment and our customers

Reliability for the environment and our customers is our second highest area of sewerage infrastructure investment in the second regulatory period (Table 9.6). Our proposed investment of $146 million seeks to minimise sewage overflows and therefore environmental impacts. Our key challenges in this area are managing growth and overflows, as detailed below.

Growth

We monitor when our sewerage networks are likely to reach maximum capacity. We can then prioritise asset renewal to meet increased demand from localised population growth. Victor Harbor and LeFevre catchments are priority areas for upgrade in the second regulatory period based on our projections for localised growth (Table 9.8). We also propose to invest $52.5 million across our sewerage network as a key asset program to meet increasing localised growth following prudent deferral from the first regulatory period.

Overflows

Sewerage main blockages cause 80% of sewage overflows. In recent years (2010-13) we had the highest number of sewerage breaks and chokes per 100 km of sewerage main of the major Australian utilities, as shown in national performance reports (NPRs) for urban water utilities. A change in the NPR reporting method in 2013-14 (which now reports our business on a whole of state basis rather than on a metropolitan basis) shows our performance to be in the mid-range of other major Australian utilities (46 breaks or chokes per 100 km of sewerage main).

Despite an improvement in comparative performance we propose similar levels of investment in the second regulatory period as part of our risk management strategy. Tree root intrusion causes over half of the sewerage main blockages particularly in areas with significant numbers of trees and clay pipes. We will continue to address this problem by replacing clay pipes with PVC pipes and through preventative maintenance.

WWPSs contribute to the remaining 20% of sewage overflow incidents. Sewage overflows from WWPSs generally have greater environmental impact due to the larger volumes of sewage.

To reduce the likelihood of overflows, we propose asset programs of $11.6 million to renew mechanical and electrical equipment across our sewerage network and $10.6 million to upgrade trunk mains (Table 9.8). The asset renewal component of this investment driver is reduced following the completion of a backlog of works finalised during the first regulatory period. However, the overall investment driver remains similar due to the increase in growth. We also propose to invest $6.8 million to upgrade our Supervisory Control and Data Acquisition system (SCADA) at Bolivar WWTP. The facility is ageing and, if it fails, we cannot monitor equipment to minimise the risk of overflows.

Table 9.8 Reliability for the environment and our customers – key proposed investment in second regulatory period (Dec 2014 real $)

Key major projects*	Details	Proposed investment
Bolivar SCADA controls upgrade stage2	Renew SCADA controls at Bolivar and main pump station (overflows)	6.8 million
North LeFevre Peninsula sewage diversion	Upgrade the network within the LeFevre Peninsula to meet demand (growth)	6.2 million
Victor Harbor network upgrade stage 3	Upgrade the network within the Victor Harbor area to meet demand (growth)	5.8 million
Key asset programs*	**Details**	**Proposed investment**
Growth – networks	Increase the localised capacity of the network to match demand (growth)	52.5 million
Mechanical and electrical – networks	Renew and replace mechanical elements (e.g. pumps) and electrical equipment (e.g. switchboards) to avoid failure and eventual impact on the environment (overflows)	11.6 million
Sewerage network – trunk mains	Renew trunk mains to avoid failure and eventual impact on the environment (overflows)	10.6 million

*Shows only the highest value major projects and asset programs for this investment driver.

9.4.1.3 Quality for the environment

Quality for the environment is the driver we propose to invest the most in for the second regulatory period, with proposed expenditure of $230.9 million (Table 9.6). This investment ensures we comply with the Environment Protection Act 1993 and the site-specific EPA licences for each WWTP. We are required to manage odour emissions, effluent quality and environmental risks. We propose to invest 43.5% more, on average, than we did in the first regulatory period (Table 9.6). The increase proposed is due to continued localised growth following deferral of growth projects from the first regulatory period, and increased demand to meet environmental obligations via environmental improvement plans set for a number of our WWTPs. We propose renewal to be reduced in the second regulatory period following a catch up of backlog works in the first regulatory period. Our key challenges are managing odour emissions and effluent quality.

Growth – odour emissions

We are required to prevent or minimise environmental harm from operating our sewerage network and WWTPs. This includes minimising odour emissions that may constitute an environmental nuisance and/or environmental harm. We propose to invest $18.2 million in odour management programs over the second regulatory period (Table 9.9).

Part of the proposed investment ($4.1 million) is to manage odours associated with our WWTPs. We manage odour complaints under the EPA licence and, for some WWTPs, under specific odour limitations stipulated in licences or annexures to licences (as environment improvement programs). We use odour complaints as our measure of odour performance. We have exceeded our target of 450 odour complaints per year in the past 3 financial years.

Given our performance, we implemented an odour management program during the first regulatory period. This program included odour modelling and capital works to address odours within a 300 metre radius of a WWTP where there are 3 or more recorded odour complaints or the risk of 3 or more odour complaints. The number of odour complaints in 2013-14 fell from 567 in 2012-13 to 514 in 2013-14. Importantly odour modelling also provides valuable information for prioritising future investment in odour management.

Despite this improvement, there are other opportunities for us to improve our performance. It is especially important given rising environmental customer expectations in this area. Odours generally arise from underperforming treatment processes with overloaded infrastructure being the main cause. Several WWTPs are at high risk of not complying with the odour emissions targets of their EPA licence, because the plants exceed hydraulic, biological oxygen demand and/or suspended solids capacities. Specifically, we propose investments at Murray Bridge, Aldinga, Port Lincoln and Bolivar WWTPs to reduce odour issues (Table 9.9).

We also propose additional investment of $14.1 million to improve odour issues across the sewerage network. This is an increase of approximately $6 million when compared to the first regulatory period to ensure we can meet the target of <450 odour complaints by the end of the second regulatory period.

Growth – effluent quality

WWTPs have effluent quality targets to ensure we minimise environmental impact and thereby comply with EPA licences. The capability of a WWTP to meet performance targets can be adversely affected by increased inflow and loading compared with nominated capacity. Localised population growth creates risks including odour complaints and high risk of overflows at some WWTPs as they reach over-capacity.

We identified 2 WWTPs at high risk of overflow due to exceeding their hydraulic, biological oxygen demand or suspended solids capacities. We propose investment of $24.6 million at the Bolivar WWTP and $14.3 million at the Aldinga WWTP to reduce the effluent quality risks (Table 9.9). Our proposed investment at Murray Bridge WWTP will also reduce effluent quality risks at the current site.

We also propose to invest $42.7 million as an asset program over the second regulatory period to improve environmental performance (Table 9.9). This project includes capability management, bio-solids and Adelaide coastal waters.

Environment – effluent quality

Our effluent quality targets are increasing. We committed to reduce the volume of nitrogen discharged to the Gulf St Vincent from the 3 large WWTPs – Bolivar, Christies Beach and Glenelg. The Adelaide Coastal Waters Study Quality Improvement Program sets a target of 300 tonnes of nitrogen per year by 2028 and the EPA formalised this requirement through licence conditions. We will provide a plan to address the nitrogen targets on WWTP discharges to the EPA by 2017. We will undertake early investigation and planning work in the second regulatory period with more significant investment being required in future regulatory periods (see section 9.4.2).

Table 9.9 Quality for the environment – key proposed investment in second regulatory period (Dec 2014 real $)

Key major projects*	Details	Proposed investment
Murray Bridge WWTP upgrade	Relocate WWTP to comply with odour standards set by EPA as part of the Environmental Improvement Program, to renew deteriorating structures, to address environmental concerns and to meet future growth (growth)	66.5 million
Bolivar capacity growth upgrade	Increase the capacity of the Bolivar WWTP to meet environmental concerns and future growth (growth)	24.6 million
Port Lincoln WWTP sludge treatment upgrade	Improve sludge infrastructure to meet growth demands and legislative requirements and to address odour impacts (growth)	15.7 million
Aldinga WWTP – capacity upgrade stage 2	Increase the capacity of the Aldinga WWTP to address environmental concerns and future growth (growth)	14.3 million
Key asset programs*	**Details**	**Proposed investment**
Improve environmental performance	Improve effluent quality to reduce environmental incidents. Increase re-use of sewage to reduce discharges to the environment (environment)	42.7 million
Mechanical and electrical – WWTPs	Renew and replace mechanical elements (e.g. pumps) and electrical equipment (e.g. switchboards) to avoid failure and eventual impact on the environment (environment)	35.8 million
Odour management	Install infrastructure to reduce odour complaints (growth/environment)	18.2 million

*Shows only the highest value major projects and asset programs for this investment driver.

9.4.1.4 Financial outcomes for our customers/owner

We propose expenditure for this investment driver of $77.7 million during the second regulatory period, which is 32.6% lower than the annual average expenditure allowance in the first regulatory period (Table 9.6). We are able to propose lower investment by either deferring investment without impacting on levels of service (using our enhanced approach to asset condition assessments) or through our ability to better align projects with the primary beneficiary (using our improved investment driver framework). We propose 2 key asset programs (Table 9.10). Both are proactive renewal programs for WWTPs and WWPSs to avoid failure and reduce the risk of significant expenditure increases in the future. We want to optimise lifecycles by rehabilitating and upgrading critical assets when it is cost effective and to avoid significant cost increases when infrastructure fails. We calculate the net present value of various options and, unless there are exceptional circumstances, we proceed with the lowest or least negative value option. Lower cost for us results in lower prices for customers.

We propose no major projects for this investment driver.

Table 9.10 Financial outcomes for our customers/owner – key proposed investment in second regulatory period (Dec 2014 real $)

Key asset programs*	Details	Proposed investment
Structures management – treatment plants	Renew and replace elements of structures (e.g. concrete) to avoid failure and expensive replacement costs.	49.4 million
Structures management – networks	Renew and replace elements of structures (e.g. concrete) to avoid failure and expensive replacement costs.	16.4 million

*Shows only the highest value asset programs for this investment driver.

9.4.2 Long term profile of sewerage infrastructure capital investment

Our sewerage infrastructure has a relatively long life, so we need to consider its long term profile to balance short and long term imperatives. Table 9.11 shows the 25 year capital expenditure profile by 4 year regulatory periods and Figure 9.9 shows the annual profile and comparison against the first regulatory period.

We expect our investment in sewerage infrastructure to increase in the second regulatory period, compared with the first regulatory period (Figure 9.9). This increase reflects investment to meet increased environmental requirements and localised population growth.

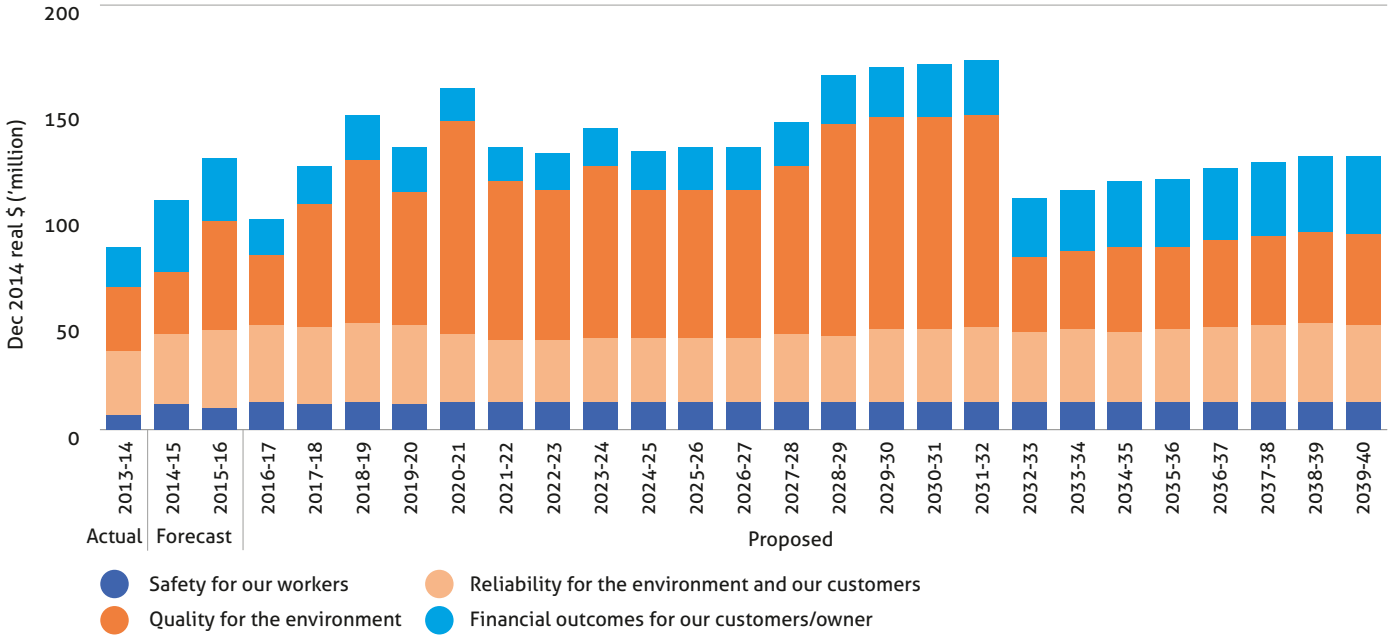
Further, we expect it to continue to grow in the next 3 regulatory periods (as we replace ageing infrastructure) before dropping back to more modest levels in 2032-36. Higher levels for quality for the environment investment reflect higher environmental standards for nutrient discharge to the Gulf St Vincent and more stringent odour emission targets. We expect it to cost $600 million to reduce an agreed 300 tonnes of nitrogen ($150 million in the third regulatory period, $150 million in the fourth regulatory period and $300 million in the fifth regulatory period). We will work with the EPA during the second regulatory period to further develop these estimates and timing.

Table 9.11 25 year capital expenditure profile, by investment driver and regulatory period (Dec 2014 real $'million)*

Investment drivers	2016-20	2020-24	2024-28	2028-32	2032-36	2036-40
Safety for our workers	49.9	51.5	53.5	52.7	52.4	52.4
Reliability for the environment and our customers	146.0	119.6	121.9	133.5	134.6	144.8
Quality for the environment	230.9	326.9	289.2	400.3	150.8	168.6
Financial outcomes for our customers/owner	77.7	66.8	79.9	98.0	120.6	142.1
Total	**504.5	**564.8**	**544.5**	**684.5**	**458.4**	**507.9**

*First regulatory period not shown as it was a 3 year rather than 4 year period. Comparison of longer term plan against the first regulatory period is shown in Figure 9.9.
**For comparative purposes in this table, the investment does not include 5% capital delivery efficiency saving.

Figure 9.9 25 year expenditure profile by investment driver and year



The environment is the primary driver of our sewerage infrastructure capital expenditure with 78% of investment directed towards protection of the environment.

9.4.3 How are we going to deliver the capital plan efficiently?

We will focus on affordability of prices for customers in the second regulatory period and continue improving capital delivery. Our sewerage technical capital plan already reflects the efficiency savings of the first regulatory period. We propose additional savings of approximately 5% ($24.8 million) of the sewerage technical capital plan for the second regulatory period (Table 9.1). We consider this savings target to be a stretch target, but it is in the best interests of our customers because it will help keep prices lower.

We will achieve the savings target by:

- Further implementing our enhanced capital delivery framework discussed in section 9.2.2 (i.e. efficient capital delivery initiative, category management and estimating improvements)
- Drawing on our relationship with Kellogg Brown and Root to access leading capital delivery practices from around the world. We are trialling innovative continuous improvement practices within the metropolitan capital delivery environment. If they are beneficial, we will apply them to other parts of our capital delivery program during the second regulatory period
- Introducing a formal innovation process to promote collaboration and idea generation for implementation. We will capture ideas and benefits across 5 categories (people, schedule, cost benefits, reputation benefits and transferability).

Over the longer term we are working towards a 'one team' leadership vision for capital delivery. This vision aims to align our 4 capital delivery models so we can:

- Lead and manage our overall performance more effectively by aligning delivery strategies, governance, processes, systems and skills
- Collaborate throughout the asset lifecycle and fully use talent where it adds most value
- Leverage supply chain capability and innovation.

We have already started working towards this vision and will have fully developed the enhanced delivery approach by late in the second regulatory period. This timing gives us the best capability to plan for the third regulatory period. In the interim we are applying detailed change management processes so we can achieve our proposed efficiency savings during the second regulatory period.

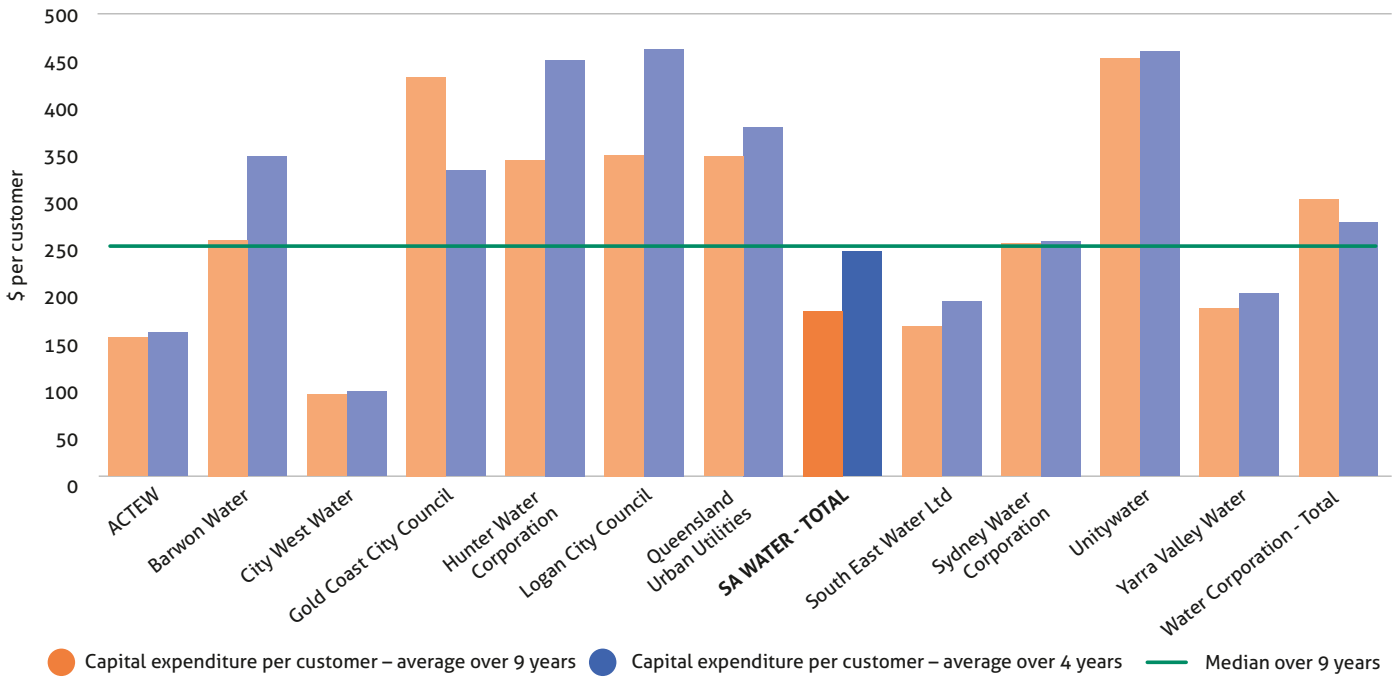
9.4.4 Benchmarking – how our capital proposal compares

To demonstrate our capital expenditure is both prudent and efficient, KPMG benchmarked our performance against our peer utilities interstate. The report[5] uses the publicly available 2013-14 NPR[6] data to assess comparative capital expenditure by number of customers (see attachment F).

Capital expenditure is difficult to compare across utilities. It can vary significantly by year and there are many factors (such as geography, customer density and treatment and discharge obligations) that affect the level of investment. KPMG analysed expenditure over 4 and 9 year periods to address the variability of investment across years. KPMG concluded our level of investment is comparatively efficient given our large geographical coverage and low customer density. Our investment was lower than the average of the peer utilities for both the 4 year and 9 year periods (Figure 9.10).

5 KPMG, *SA Water NPR Cost Benchmarking Study,* June 2015.
6 The NPR is compiled by the Bureau of Meteorology based on submissions from responding utilities.

Figure 9.10 Average adjusted sewerage capital expenditure per customer



This benchmarking compared our investment in infrastructure favourably with our interstate peers, but we did not rely on this analysis when assessing the prudence and efficiency of our capital expenditure proposal. As discussed earlier in this chapter, we assessed each element of our expenditure profile to ensure the expenditure is necessary, provides customer benefits and delivers the benefits efficiently.

9.5 Summary

Our proposed sewerage capital investment aligns with our strategic objectives and benefits our customers, our workers, our owner and the environment. We propose to invest $479.7 million in sewerage infrastructure over the second regulatory period. Our investment proposal includes a savings commitment of approximately 5% in capital delivery costs. We will achieve these savings without compromising the planned outcomes of our sewerage investment. Our proposed sewerage capital investment forms part of the capital expenditure used to calculate the allowable sewerage revenue in chapter 11.

Chapter 10
Operating expenditure

KEY POINTS

We implemented significant efficiencies in the first regulatory period and as a result are forecasting to spend $72 million less than the sewerage operating expenditure allowance set in the first determination. We still expect to perform well against our service standards.

We propose to spend $523 million for the 4 years of the second regulatory period to operate and maintain our sewerage infrastructure.

While our operating expenditure is already efficient compared with our peers, our proposal includes an efficiency target of 1% of base sewerage operating expenditure each year of the second regulatory period, growing to 4% by 2019-20.

Our proposed operating expenditure includes $25 million in unavoidable operating expenditure increases – primarily external requirements, cost escalation, network growth and investment in technology to reduce future operating costs.

10.1 Our proposal

We significantly transformed our business during the first regulatory period to reduce our cost base, exceeding the efficiency targets for that period. We built on this efficient cost base to produce our operating expenditure proposal for the second regulatory period. Our proposal of $523.3 million across the second regulatory period consists of the efficient base year costs (our usual operating costs) plus new and/or unavoidable requirements we will encounter in the period and a 1% efficiency target per year. These are set out in Table 10.1. The new requirements are explained further in section 10.4.1.

Table 10.1 Sewerage operating expenditure proposal (Dec 2014 real $'million)*

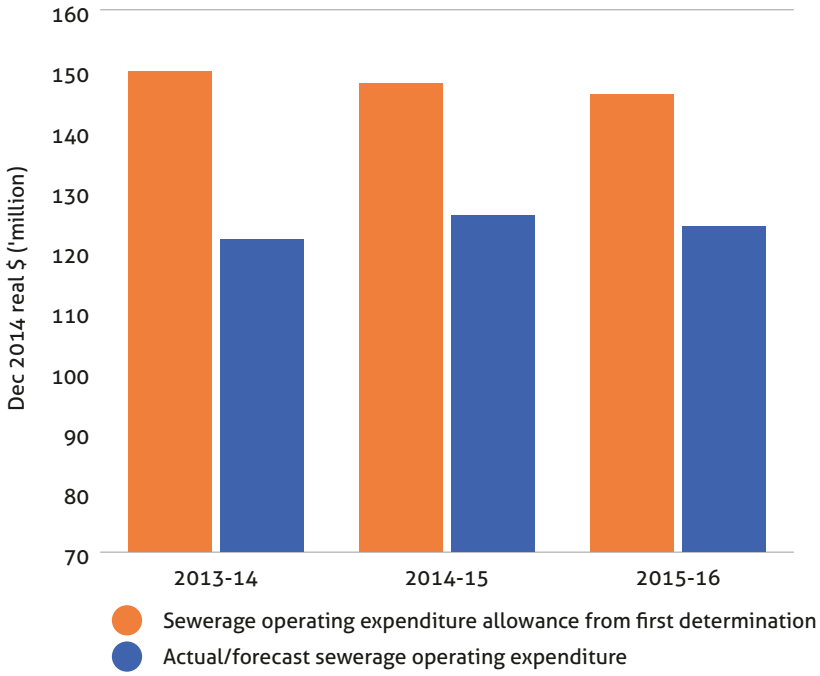
Operating expenditure proposal	Base year**	2016-17	2017-18	2018-19	2019-20
Efficient proposal***	127.8	126.6	125.4	124.0	122.6
New expenditure requirements	–	4.5	5.9	7.1	7.2
Sewerage operating expenditure proposal	127.8	131.1	131.3	131.1	129.8

*Presented using the cost allocation method for the second regulatory period.
**The base year is the 2014-15 sewerage operating cost forecast (at December 2014) presented under the cost allocation method for the second regulatory period. Other sections of our proposal refer to the 2014-15 sewerage operating cost forecast to analyse performance during the first regulatory period. In these cases, the forecast is presented under the cost allocation method for the first regulatory period.
***Includes an efficiency reduction of 1% per year of total sewerage costs.

10.2 How are we performing in the first regulatory period?

The first determination set an annual sewerage operating expenditure allowance, including cumulative annual efficiency targets. We forecast to spend less than the allowance in each year of the first regulatory period as shown in Figure 10.1.

Figure 10.1 Operating expenditure against allowances from the first determination*



*Presented under the cost allocation method used for the first regulatory period.

Table 10.2 presents the cumulative efficiency targets set in the first determination and the efficiencies we expect to deliver in sewerage operating expenditure over the first regulatory period. We forecast to achieve an additional $71.6 million of savings above the target set by ESCOSA. We also forecast to achieve the savings earlier than required, while continuing to perform well against our service standards. Chapter 3 details our performance against service standards in the first regulatory period.

Table 10.2 Efficiency target applied by ESCOSA in first determination*

Operating expenditure reductions	2013-14	2014-15	2015-16	Total
Cumulative efficiency target	1.00%	2.98%	4.92%	
Cumulative efficiency target for sewerage operating expenditure (Dec 2014 real $'million)	1.5	4.5	7.4	13.4
Actual/forecast sewerage operating expenditure efficiencies (Dec 2014 real $'million)	29.3	26.3	29.4	85.0

*ESCOSA 2013, SA Water's water and sewerage revenues 2013-14 – 2015-16, Final determination statement of reasons, p. 133.

Achieving additional savings, and achieving them early, has not been easy. We did so only by transforming our business. This business change was driven not only by our regulatory efficiency targets but in response to our customers' desire for lower prices. The magnitude of our response was also driven by the South Australian Government's direction to achieve even higher efficiencies for customers.

To do this we:

- Significantly restructured our business. Our new organisational structure supports more efficient end-to-end process delivery. It has clear accountabilities for delivery across the entire process stream
- Continued to improve processes and investment in information technology (IT) systems to increase efficiency and enhance customer service outcomes
- Optimised how we operate our wastewater treatment plants (WWTPs). Many of our WWTPs are reaching design capacity, so we need to minimise the risk of sewage overflows and adverse impacts on treated effluent quality
- Innovated in the way we procure energy, which reduced energy costs
- Undertook efficient sludge management in an environment of variable sludge drying conditions and end user demands.

We are proud of the efficiencies we will achieve over the first regulatory period and their ongoing benefit to our customers. We know similar reductions will be more difficult to make in the future, because we've already changed our contracts, processes and business structure. Accordingly, whilst we are committed to achieving further efficiencies in the second regulatory period, we forecast the efficiencies will be lower than those achieved in the first regulatory period.

10.3 Our approach to developing our proposal

Our expenditure proposal for the second regulatory period uses a base year method consistent with ESCOSA's requirements and normal regulatory practice. Our proposal represents incremental annual changes to the base year for efficiency savings and unavoidable cost increases.

We applied a robust process to develop our operating expenditure proposal with detailed input from our entire business. We:

- Put the customer at the forefront of all decision making and focused on reducing customer prices while maintaining or improving levels of service and maintaining appropriate levels of risk
- Undertook bottom–up reviews of our entire business and long term financial plans, to identify efficiencies. In particular, we implemented internal governance, subjecting each change proposal to management review and prioritisation. These reviews had the context of ensuring our proposal provides value to customers in the second regulatory period
- Developed our sewerage operating expenditure proposal in conjunction with our capital expenditure and IT plans, because they are highly interrelated. We manage our assets to deliver the required levels of service for optimal lifecycle costs at an acceptable level of risk. This approach involves selecting operating levels and capital expenditure to deliver the lowest lifecycle cost for customers.

10.3.1 The base year

The base year is our December 2014 forecast for the 2014-15 financial year. We used a December 2014 forecast because it was the most current information available when we developed our sewerage operating expenditure proposal. We did not normalise the base year for sewerage.

It should be noted that the base year does not include costs to comply with the Federal Government's former carbon pricing mechanism, which was repealed from 1 July 2014. Although the operating expenditure allowances of the first determination provided for these compliance costs, the December 2014 forecast reflects the amended policy position. We go into the second regulatory period with the benefit of a step change in our baseline efficiency as a result of our efforts in the first regulatory period (discussed in section 10.2). We consider the sewerage operating expenditure base year to be efficient because:

- It is below the level deemed efficient in the first determination
- It compares favourably with our peers interstate.

To demonstrate our efficiency, KPMG benchmarked our operating costs using 2013-14 National Performance Report (NPR)[1] data, against a peer group of Australian water utilities. KPMG's benchmarking study is included as attachment F.[2] Overall, KPMG concluded our performance is amongst the most efficient for a combined water and sewerage service provider. This is despite being exposed to a number of unfavourable environmental conditions including a large geographic footprint, unfavourable topography and low rainfall.[3] KPMG also noted we improved our efficiency since the benchmarking study used to support our first regulatory proposal.

Table 10.3 shows the peer group selected by KPMG. The selection was guided by the availability of public information and the need for the peer group to have broadly similar characteristics. The peer group are the water utilities defined as 'major' in the NPR.

Table 10.3 Peer group for benchmarking sewerage operating costs (2013-2014)*

Utility	State	Sewerage treated to tertiary level	Connections ('000)	Length of sewerage mains/channels (km)	Customers per km of pipe/channel (no.)
SA Water (all)	South Australia	95%	586	8,807	67
ACTEW	Australian Capital Territory	100%	161	3,224	50
Barwon Water	Victoria	10%	131	2,459	53
City West Water	Victoria	100%	400	4,118	97
Gold Coast City Council	Queensland	100%	224	3,180	70
Hunter Water Corporation	New South Wales	43%	224	4,903	46
Logan City Council	Queensland	0.5%	93	2,053	45
Queensland Urban Utilities	Queensland	98%	534	9,185	58
South East Water	Victoria	92%	664	8,761	76
Sydney Water Corporation	New South Wales	23%	1,799	24,786	73
Unity Water	Queensland	99%	262	5,430	48
Yarra Valley Water	Victoria	93%	694	9,310	75
Water Corporation – Perth	Western Australia	95%	713	11,637	61

*KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015

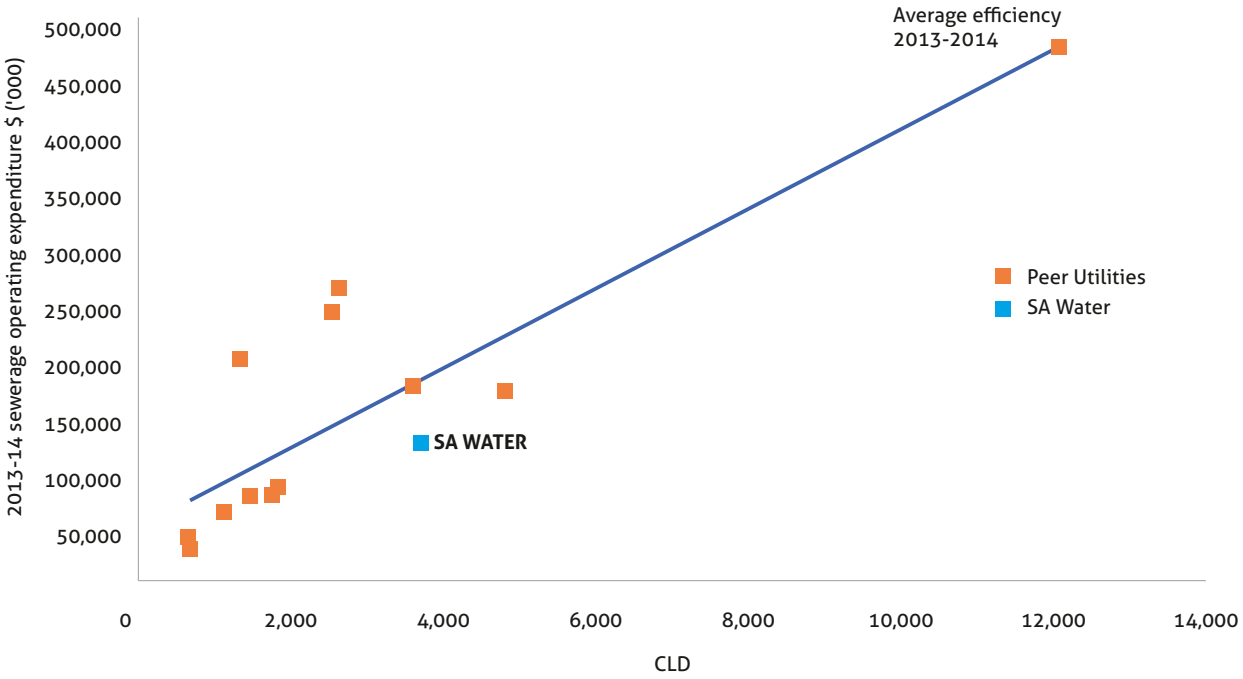
Comparison of sewerage service providers is difficult, given each utility's vastly different geographic nature and the environmental conditions and regulations applying in each state. KPMG used a variety of benchmarking methods and considered a range of qualitative and quantitative cost drivers to assess relative efficiency.

We consider the most powerful benchmarking method to be the multi-dimensional efficiency analysis, which combines 3 key drivers of productivity – customers, length of pipe and demand (CLD)[4] – to assess relative efficiency. We have used KPMG's CLD analysis to discuss relative efficiency in our proposal, consistent with the method used for the first regulatory proposal. We do not feature KPMG's other benchmarking methods in our proposal, but they are included in attachment F.

1 The NPR is compiled by the Bureau of Meteorology based on submissions from responding utilities.
2 KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015.
3 Ibid, p. 2.
4 CLD analysis is a multi-dimensional efficiency analysis using 3 key cost drivers of the business: Customer number (C), Length of pipe (L) and Demand (D). CLD is calculated using the formula CLD = $C^{0.5}$ x $L^{0.3}$ X $D^{0.2}$.

KPMG's CLD graph for sewerage operating costs is shown in Figure 10.2. It demonstrates that we provide both our metropolitan and country sewerage services more efficiently than the average of the peer group. This result means we have established ourselves as one of the most efficient sewerage service providers in Australia based on this measure.

Figure 10.2 CLD analysis of 2013-14 sewerage operating expenditure*



*KPMG, *SA Water Corporation NPR Cost Benchmarking Study*, June 2015, p. 50.

Throughout the second regulatory period, we expect continued improvement of our comparative efficiency. The rate of improvement will be more modest given the improved efficiency already incorporated in our base year. Given our comparative performance against the peer group, we consider the application of catch-up efficiencies in the second regulatory period would be inappropriate.

10.4 Our proposal for the second regulatory period

Delivering more affordable sewerage prices for customers is a key driver of our sewerage operating expenditure proposal. Table 10.4 presents our proposal for the second regulatory period.

Table 10.4 Sewerage operating expenditure proposal (Dec 2014 real $millions)*

	Base year**	2016-17	2017-18	2018-19	2019-20
Efficient proposal***	127.8	126.6	125.4	124.0	122.6
New expenditure requirements	–	4.5	5.9	7.1	7.2
Sewerage operating expenditure proposal	127.8	131.1	131.3	131.1	129.8

*Presented using the cost allocation method for the second regulatory period.
**The base year is the 2014-15 sewerage operating cost forecast (at December 2014) presented under the cost allocation method for the second regulatory period. Other sections of our proposal refer to the 2014-15 sewerage operating cost forecast to analyse performance during the first regulatory period. In these cases, the forecast is presented under the cost allocation method used for the first regulatory period.
***Includes an efficiency reduction of 1% per year of total sewerage costs.

The efficient proposal line in Table 10.4 incorporates efficiencies already being achieved in the first regulatory period. This is achieved by embedding the forecast efficiency of $26.3 million for 2014-15 in the base year. The efficient proposal line also incorporates our commitment to further ongoing annual efficiencies in the second regulatory period of 1% of base costs at the beginning of each financial year. Further detail of how we will become more efficient during the second regulatory period is provided at section 10.4.2.

We will incur $24.7 million of unavoidable operating cost increases and additional costs arising from network growth and technology investment. These are reflected in the new expenditure requirement line in Table 10.4 with further detail provided in section 10.4.1. For this reason, the sewerage operating expenditure proposal decreases marginally over the second regulatory period.

10.4.1 New and unavoidable expenditure requirements

Some operational expenditure increases provide direct value for customers or are unavoidable. These costs primarily relate to growth in our network, IT investments to reduce costs, investments to improve customer support, cost escalation above the rate of inflation and unavoidable external requirements. Unavoidable external requirements are cost increases applied by government or regulators, which we have little or no control over and cannot avoid.

Our proposals for new expenditure are based on evidence from the first regulatory period such as cost pressures already occurring or increased requirements from our customers or stakeholders. Other proposals are necessary to achieve future efficiencies.

We developed our operating and capital expenditure plans together. Our operating efficiency proposal largely depends on our capital expenditure proposal. Any changes in one will affect the other.

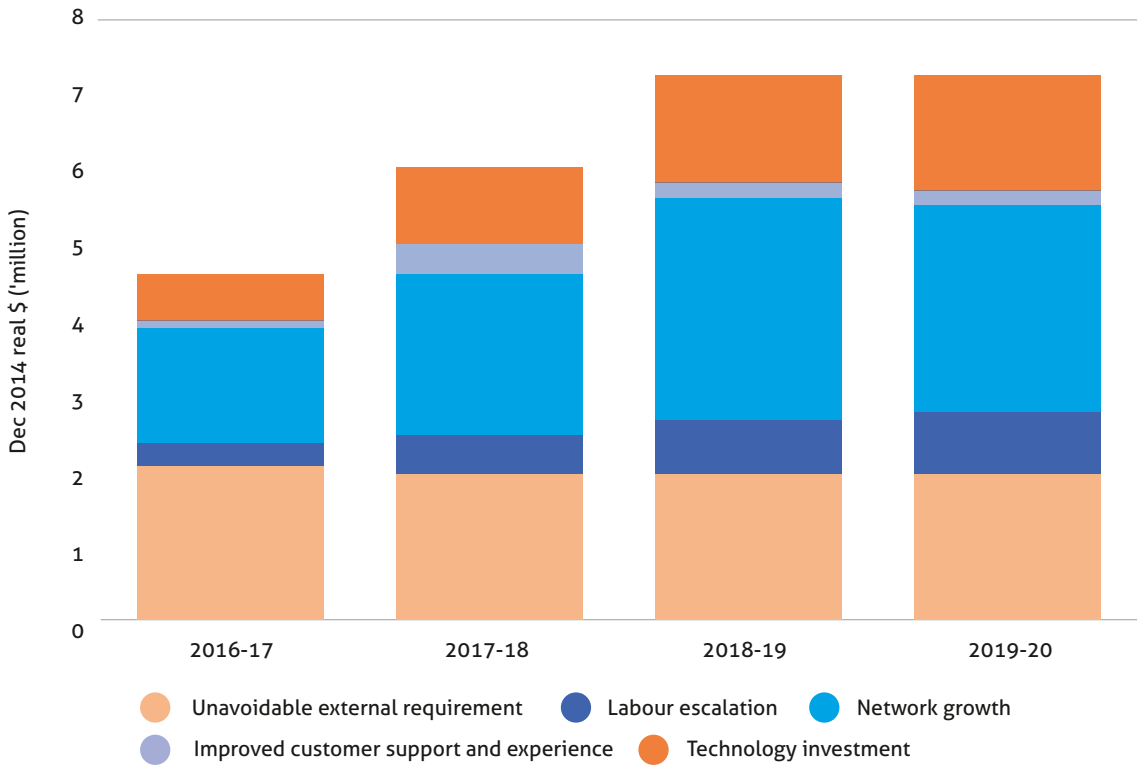
Many of our proposed operating expenditure requirements apply across our whole business. We allocated costs across our water, sewerage and non-regulated services in accordance with the cost allocation method for the second regulatory period. This cost allocation method has been reviewed by KPMG (attachment G). Table 10.5 and Figure 10.3 summarise the incremental costs from the base year that we allocated to sewerage. Below the table, we briefly discuss each new expenditure requirement. Detailed business cases are available for ESCOSA to review as part of its second determination process.

Table 10.5 Operating expenditure increases from base year (Dec 2014 $'million)

Operating expenditure increases from base year		2016-17	2017-18	2018-19	2019-20
Unavoidable external requirement	Water industry licence fees	1.4	1.3	1.3	1.3
	Past service superannuation liability	0.4	0.4	0.4	0.4
	Safety, health, wellbeing and training	0.2	0.2	0.3	0.2
Improved customer support and experience	Customer assist program	0.1	0.2	0.2	0.2
	Your Say program	-	0.2	-	-
Network growth	Recycled water supply	-	0.7	1.3	1.3
	Capital plan impacts	1.5	1.4	1.5	1.4
Technology investment	IT business change projects*	0.6	1.0	1.4	1.5
Labour escalation	Labour price escalation above inflation	0.3	0.5	0.7	0.9
Total		**4.5**	**5.9**	**7.1**	**7.2**

*Includes operating expenditure increases from the base year related to IT capital expenditure of the first and second regulatory periods.

Figure 10.3 Operating expenditure increases from base year



10.4.1.1 Water industry licence fees

ESCOSA collects these annual licence fees under sections 19 and 24 of the Water Industry Act 2012 on behalf of other regulators. These fees include a licence fee to ESCOSA, the Office of the Technical Regulator, the Department of Environment, Water and Natural Resources and the Department of Treasury and Finance for regulatory functions performed within the water industry.

The total of these fees was $3.1 million per year in the first regulatory period. We expect our annual water industry licence fees to increase by $4.2 million from 2016-17 to $7.3 million per year. ESCOSA will confirm the value of these fees as part of its second determination.

The increase is primarily due to including the cost of functions transferred to the Office of the Technical Regulator when independent economic regulation began. These costs are not already in our base year because the timing of the function transfer meant the fees charged during the first regulatory period did not include the costs.

This cost increase is unavoidable because we are legally obliged to pay the fees under the Water Industry Act. Of the increase, we allocated $1.3 million per year on average to sewerage operating expenditure and $2.7 million per year on average to water operating expenditure.[5]

5 The total average allocation does not equal $4.2 million which is quoted as the increase in 2016-17. This is due to the impact of inflation across the 4 year period.

10.4.1.2 Past service superannuation liability

There will be increases of $1.1 million per year in our unfunded liability obligations to our employees under defined benefit superannuation schemes. Of this increase, we allocated $0.4 million per year to sewerage operating expenditure and $0.7 million per year to water operating expenditure.

We need to fully fund this liability by 2033-34, consistent with government policy. Super SA determines the value of the unfunded liability and the payments required to fund it, conducting actuarial reviews every 3 to 4 years. The most recent actuarial review (September 2014) requires increases in past service superannuation payments, compared with the amounts allowed in the first determination. These increases will commence in 2016-17, to align with the start of the second regulatory period. They are unavoidable because we are legally obliged to pay the amounts determined by Super SA.

10.4.1.3 Safety, health, wellbeing and training

To comply with evolving workplace health and safety standards and workforce competency standards across our business, we propose an additional $0.7 million per year on average of operating expenditure. Of this increase, we allocated $0.2 million per year on average to sewerage operating expenditure and $0.5 million per year on average to water operating expenditure.

Safety of our employees and our community is our highest priority, and we actively seek to reduce risk in this area. Our proposed expenditure will enable us to identify our highest risk assets and develop workplace health and safety (WHS) risk mitigation plans and risk reduction activities. These plans will ensure we remain compliant with evolving WHS standards.

The National Certification Framework for Water Operators sets minimum standards of competence for field operators. These standards continue to evolve and failure to comply may result in breaches of WHS compliance requirements and breaches of water quality regulatory standards. To avoid this risk we provide training for existing and new employees to ensure ongoing compliance with these competence standards. The proposed expenditure will also allow us to identify our highest risk assets and develop WHS risk mitigation plans and risk reduction activities.

During the organisational restructure, our investment in training needed to reduce to enable our employees to transition to the new structure. This reduction largely occurred in 2014-15 meaning our base year for the second regulatory period does not reflect our ongoing training needs. The proposed expenditure enables us to provide the appropriate level of training for staff over the second regulatory period.

We based this cost increase on the scheduled fees of registered training organisations (Technical and Further Education South Australia, Water Industry Training Centre). We will commence the increased expenditure in 2015-16 to ensure our compliance with new and evolving WHS requirements.

10.4.1.4 Customer Assist program

We propose enhanced hardship provisions at a cost of approximately $2 million over the second regulatory period. Of this amount, we allocated $0.7 million to sewerage operating expenditure and $1.3 million to water operating expenditure.

Our Customer Assist program helps customers who are deemed to be in a hardship situation. We propose an incentive scheme to help these customers continue to meet their payment obligations. The most common support measure across Australia is a payment matching scheme, whereby for a certain number of payments made by the customer we will make a payment on their behalf.

This type of scheme is offered by most water utilities in the eastern states and by major energy retailers in South Australia. Our following investigations supported its implementation:

- A social research collaboration agreement with South Australian Council of Social Service supported an initiative to provide financial incentives within payment plans. Participants gave almost unanimous support for this initiative and considered it provides a goal and motivation to stay on track with payment plans

- Your Say indicated support to expand the Customer Assist program to offer measures such as debt forgiveness in cases of extreme hardship at a cost of $1 per annum.[6] The results indicated 64% support from customers completing an online survey and 71% support from customers in customer survey workshops.

We propose to initially offer the scheme to hardship customers on a pension concession through Centrelink. In the second year, we intend to expand the scheme to other hardship customers. The expenditure we propose is less than $1 per annum per customer.

10.4.1.5 Customer engagement

We are committed to ongoing engagement with our customers to understand their needs and what they value about our services. Building on the success of our recent customer engagement program, Your Say, we propose a similar program of customer engagement in the second regulatory period. The program will cost $0.7 million over the period. Of this amount, we allocated $0.2 million to sewerage operating expenditure and $0.5 million to water operating expenditure. While we undertook engagement activities in the first regulatory period, this new initiative shows as a cost increase because we incurred most of the prior expenditure in 2013-14 (before our base year).

The Customer Engagement Program (2016-20) will consist of research and engagement activities with customers to assess their satisfaction with current and future service levels and their willingness to pay for proposed changes to services and investments. It will also test and develop solutions with customers.

The program will involve us working with our customers to identify preferred pathways for contact and to improve the end-to-end customer experience. This work will help us make service delivery efficiencies aligned with customer expectations. It will also help us remove red tape, identify customer 'pain points' and make it easier for customers to interact and do business with us.

This customer engagement initiative will also provide customers with the opportunity to engage in the development of our next regulatory business proposal and help us align our regulatory business proposal with customer needs.

10.4.1.6 Recycled water supply

The Virginia Pipeline Scheme transports recycled water from the Bolivar WWTP to irrigators in the northern Adelaide plains. The scheme helps us achieve the EPA licence conditions for nitrogen discharge.

We will incur an additional $3.3 million of operating costs associated with this scheme over the second regulatory period.

Constructed as a build-own-operate-transfer arrangement, the pipeline is currently owned, operated and maintained by Water Infrastructure Group. Ownership of the scheme will transfer to us on 1 January 2018. Our increased expenditure from January 2018 is based on the expenditure the contractor currently incurs. These costs will be offset by the revenue we will receive from customers of the scheme. As such, the transfer will not increase prices to our retail sewerage customers.

10.4.1.7 Capital plan impacts

We will incur additional operating expenditure as a result of newly constructed assets, WWTP capacity upgrades and customer growth in the second regulatory period. For our sewerage service, we estimate average annual operating cost increases of $1.5 million over the second regulatory period.

We manage infrastructure assets to deliver the required levels of service for optimal lifecycle cost at an acceptable level of risk. This requires a trade-off between operating and capital expenditure to deliver the most efficient lifecycle cost. The increased sewerage operating expenditure is driven by growth across both our networks and WWTPs and will ensure we maintain service quality and reliability for our customers and we continue to meet our health and environmental obligations.

We estimated the capital plan impact using a bottom–up method, which complies with our standard estimating practices. We also used our experience in managing these assets.

6 Deloitte, *Customer Engagement Program Stage 3*, 2015, p. 19.

10.4.1.8 Information technology business change projects

In the first regulatory period, we invested in IT to transform the way we do business and will continue to do so over the second regulatory period. Chapter 13 presents more information on our IT proposal.

Our proposed IT investment has associated operating costs. For example, in 2015-16 we forecast an additional $0.4 million of sewerage operating costs associated with our IT investment in the first regulatory period. For the second regulatory period, we estimate additional operating costs associated with our IT investment over the first and second regulatory periods to be $13.7 million[7] (over the base year costs). Of this amount, we allocated $4.5 million to sewerage operating expenditure and $9.2 million to water operating expenditure.

This IT driven investment will deliver operating cost savings, enhance workforce productivity, improve customer experience and interaction, ensure compliance with external obligations and maintain risks at an acceptable level. The investment will make us a smarter, more efficient and more responsive organisation. Customers will benefit from improved service channels, more responsive and consistent service and lower prices over the longer term.

The savings from our IT investment will more than offset the ongoing support costs and licence fees needed for the new IT investments as detailed in chapter 13. Without the IT business change initiatives, we will not achieve the operating cost efficiencies and service improvements in our proposal.

We determined the IT operating expenditure increase from detailed cost estimates for each IT project, including vendor estimates of licence fees and industry benchmarks for implementation costs.

These initiatives will provide value to customers through operating expenditure efficiencies, which help reduce customer prices in the second and future regulatory periods. If we do not invest this additional expenditure, we will be unable to deliver our proposed efficiency target.

More information on our IT proposal is provided in chapter 13.

10.4.1.9 Labour price escalation above inflation

Labour prices have historically increased at a higher rate than general inflation. For our sewerage service, we estimate labour price escalation above inflation to be $2.4 million over the second regulatory period.

We engaged independent consultant BIS Shrapnel to advise us of wages growth in the utilities sector over the second regulatory period. Their report, included at attachment I, advises underlying wages growth in the 'utilities' sector is estimated to average 4% per year over the second regulatory period. While current labour market conditions are subdued, BIS Shrapnel expected wages growth to pick up from 2017-18. This rise reflects increased demand for labour from the broader utility sector as engineering construction ramps up.

Labour price growth has historically exceeded the general rate of inflation in Australia. Australian Bureau of Statistics (ABS) figures indicate wages price growth exceeded inflation by 1% on average over the past 10 years.[8] We expect this trend to continue over the second regulatory period.

For the first regulatory period, ESCOSA did not support our proposal for real labour price escalation. ESCOSA acknowledged that labour prices increase as a rate higher than inflation but that efficient, well run businesses can control labour costs to the rate of inflation through efficiencies.

We maintain our position that escalation above inflation is warranted for labour costs. In the interests of containing wage price escalation to achieve lower prices for customers, we propose labour price escalation of 3% per year (0.5% per year above the expected rate of inflation). The proposed labour price escalation is below the rate expected by BIS Shrapnel and below the long term average of real labour price growth in Australia. This increase in cost of labour includes for the additional costs of movements in pay scales as well as general wage escalation. Adopting a lower rate means our labour costs will already include an implied efficiency of 1% each year. We will also apply the broader 1% efficiency target to labour costs each year as detailed in section 10.4.2.

We propose separate ongoing operating expenditure savings, which we will partly achieve through labour efficiency and cost reductions. We ask ESCOSA to consider the cost increase of labour price escalation in conjunction with those operating cost savings.

7 The $13.7 million includes $7.7 million in operating expenditure increases from the base year as a result of IT capital expenditure in the first regulatory period.
8 Comparison of the 10 year average of ABS, All groups CPI: Australia (series ID A2325847F), to ABS, Total hourly rates of pay excluding bonuses: Australia (series ID A2705194A).

10.4.2 How will we become more efficient in the second regulatory period?

We are focused on keeping prices affordable for customers. While challenging, we propose an annual efficiency target of 1% of our base costs each year from 2016-17. This target equates to a 4% reduction in our proposal by 2019-20.

Our proposed annual efficiency target compares favourably with efficiency targets in other jurisdictions, which average around 1% per year of total operating expenditure as shown in Table 10.6. Some regulators apply efficiencies to subsets of operating expenditure (for example, controllable or discretionary costs) so, to help comparisons, we converted headline efficiency targets to a common base of total operating expenditure.

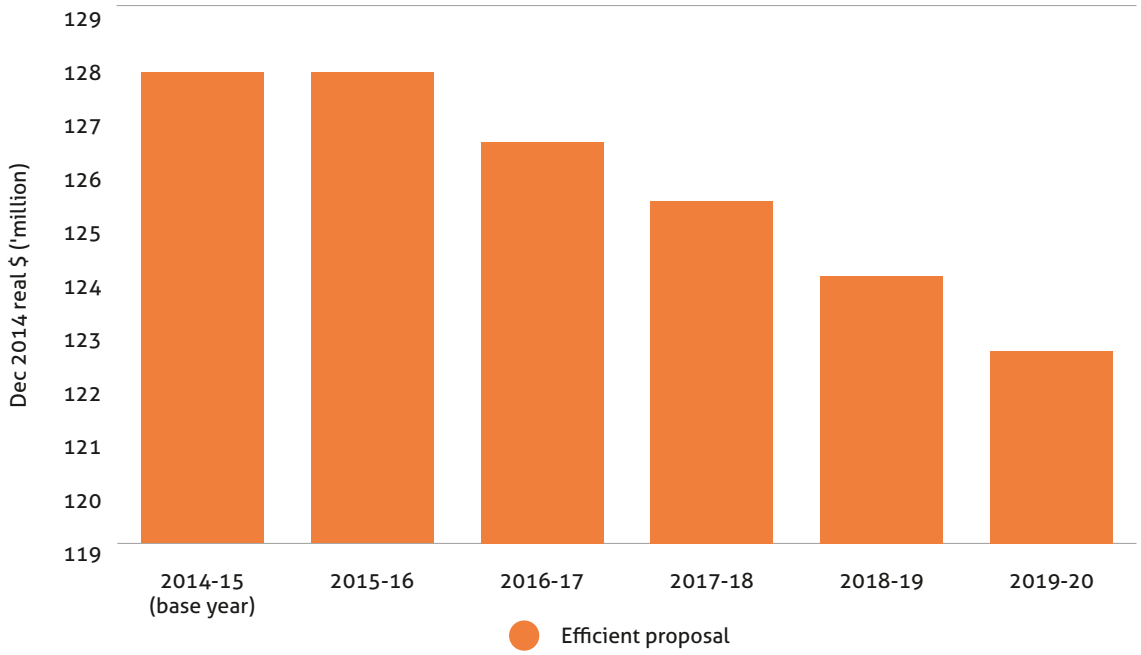
Figure 10.4 presents our efficient proposal after applying our proposed efficiency target.

Table 10.6 Operating expenditure efficiency targets applied by Australian water and sewerage regulators[7]

Regulator	Determination	Headline efficiency target	Applied to	Efficiency target as % of total operating expenditure
ERA	March 2013 inquiry	2% pa*	Business as usual operating expenditure	1.6% pa
ESC	Price review 2013: greater metropolitan water businesses	1% pa	Controllable business as usual operating expenditure	0.4% pa
IPART	Hunter Valley Water price review	1% pa	Total operating expenditure	1% pa

*Applies to 2005-06 base year costs and relates to a 2% reduction on operating costs per connection. This makes comparison to our efficiency target difficult as Water Corporation experience a significantly higher growth in connections meaning a larger proportion of operating costs do not change with higher numbers of connections.

Figure 10.4 Efficient base sewerage operating expenditure proposal



9 As published in the Essential Services Commission of Victoria 2015, Proposed approach to Melbourne Water's 2016 water price review consultation paper, p. 34.

The proposed efficiency target applies to total base sewerage operating expenditure despite many of those costs being fixed or uncontrollable. For this reason, the proposed efficiency target represents more than 1% per year of the base sewerage operating costs we can control or influence over the second regulatory period. For example, we forecast to incur government taxes, fees and charges (such as land tax, EPA charges and ESCOSA fees) of $51 million per year in the second regulatory period. If we exclude the portion of these costs allocated to the sewerage service, then our efficiency proposal would equal around 1.2% per year (around 5% by 2019-20).

Achieving the 1% annual efficiency target against our base sewerage operating costs will be a challenge, especially while maintaining our level of service to customers, managing risks and meeting future challenges. It will become progressively more difficult each time we make cost reductions. For this reason, we consider the 1% proposed efficiency target to be a stretch target.

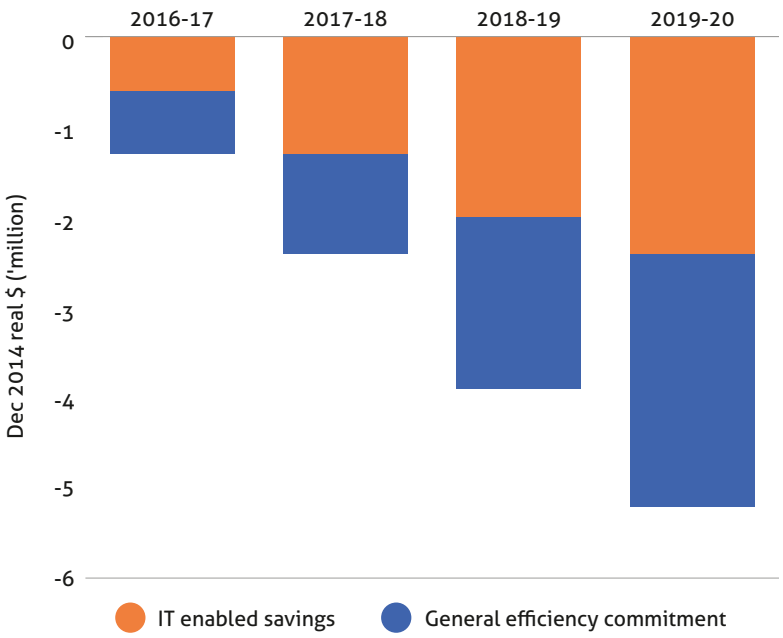
We will partly achieve the proposed efficiency target through our business change IT program, which is transforming how we operate. We developed this program by analysing how we can operate more efficiently and be more responsive to customer needs. It will start delivering operating expenditure efficiencies (IT enabled savings) from the beginning of the second regulatory period, by:

- Improving the safety and efficiency of our field force. It will enhance access to systems and provide centralised visibility of resources, enabling more intelligent and automated management
- Streamlining work practices through integrated systems, leading to increased workforce productivity
- Improving our data collection, reporting and data analysis capabilities to enhance process efficiency and decision support tools
- Enhancing energy management systems to eliminate intermediary administration costs and provide better information for decision making.

The IT enabled savings will not be sufficient to achieve our proposed 1% efficiency target. We will plan how to meet the remaining part of the proposed efficiency target as we move towards the later years of the second regulatory period. In the first regulatory period, we found better ways to do business to achieve our efficiency target. In the second regulatory period, we will seek continuous improvement opportunities to deliver against the efficiency proposal.

Figure 10.5 breaks down how we aim to achieve our proposed sewerage operating expenditure efficiency target, between IT enabled savings and general efficiency improvements.

Figure 10.5 How we plan to meet our proposed efficiency target for sewerage operating expenditure



10.5 Summary

We outperformed the operating expenditure allowances made in the first determination by around $71.6 million. This result gives us a more efficient base year to deliver lower prices for customers in the second regulatory period. External benchmarking demonstrates that we provide both our metropolitan and country sewerage services more efficiently than the average of the peer group.

We propose to spend $523.3 million over the second regulatory period to operate and maintain our sewerage infrastructure.

We applied a robust process to determine the additional operating costs necessary for the second regulatory period. Our proposed operating expenditure includes $24.7 million in unavoidable operating expenditure increases. These increases primarily relate to external requirements, cost escalation, network growth and investment in technology to reduce future operating costs.

While our operating expenditure is already efficient compared with the peer group, our proposal includes an efficiency target of 1% of base sewerage operating expenditure each year of the second regulatory period, growing to 4% by 2019-20.

We outperformed the efficiency targets set for the first regulatory period by around $72 million. This sets a lower base year for the second regulatory period and delivers lower prices for customers.

Chapter 11
Required revenue

KEY POINTS

We are focused on the affordability of sewerage services for our customers. The allowable sewerage revenue that we propose for the second regulatory period is, on average, 7.8% less than the allowance determined for the first regulatory period. Lower allowable sewerage revenue means lower sewerage prices for customers.

We propose to use mechanisms that bank the costs and benefits arising from any revenue variations generated by changes in demand. These banking mechanisms will promote price stability for customers over the second regulatory period.

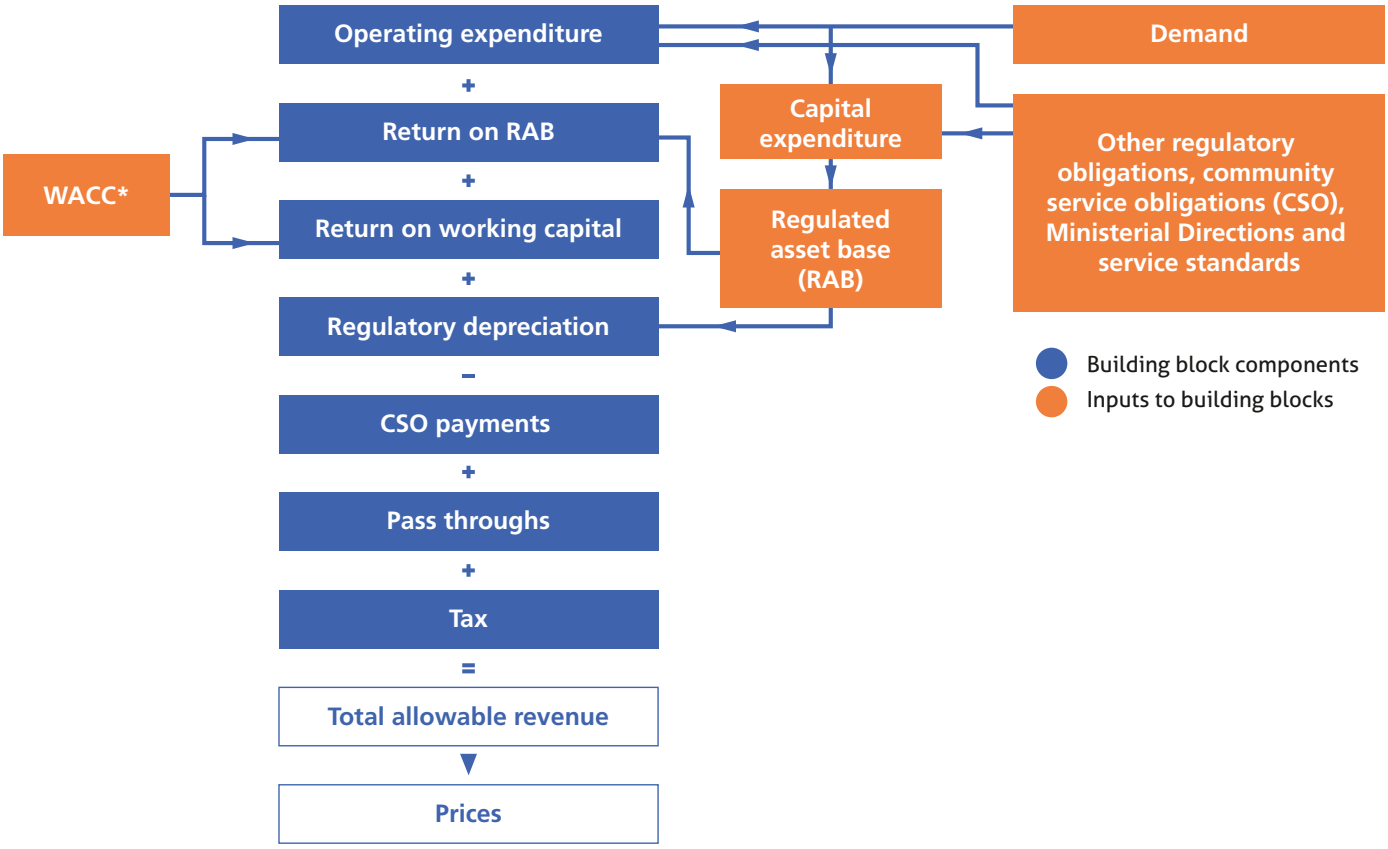
The allowable sewerage revenue that we propose is based on observable market inputs at the time of preparing our proposal. These may be different at the time of the second determination, which will affect the final allowable revenue.

11.1 Revenue approach

ESCOSA uses a building block method to assess our proposals and determine the maximum allowable revenue we should recover from customers in exchange for the services we provide (Figure 11.1). This method complies with the National Water Initiative pricing principles. It also considers the Treasurer's pricing orders.

To calculate the building blocks, we used ESCOSA's revenue model (revenue model), which was also used for the first determination. We engaged KPMG to perform an independent examination of the revenue model to identify any issues and thereby reduce the risk of error. KPMG's factual findings did not identify any issues which would have a material impact on the results. KPMG's report has been provided to ESCOSA in support of the populated revenue model.

Figure 11.1 Revenue building block method[1]



*Weighted average cost of capital. In our proposal, called the regulatory rate of return.

1 ESCOSA, *SA Water price determination 1 July 2016 – 30 June 2020, framework and approach*, November 2014, p. 7.

11.2 How are we performing in the first regulatory period?

The first determination set the annual total allowable revenue for the first regulatory period and converted it into a form of revenue control based on revenue per connection. This form of control is called an average revenue control. Before each year, we set sewerage prices to earn revenue that does not exceed the average revenue control. Annually, we publish a statement (available on our website) about our compliance with the average revenue control.

Table 11.1 presents the average revenue per connection earned, or forecast to be earned for direct control sewerage services compared with the average revenue control. It also shows the actual and forecast revenue compared with the allowable revenue set in the first determination. Since the first regulatory period began, variations have arisen in our forecasts, including forecast customer numbers (chapter 12). These variations mean actual average revenue per connection will be different, even though we set prices to achieve the average revenue control.

Table 11.1 Revenue cap compliance for sewerage services (Dec 2013 real $)*

$ per connection	2013-14	2014-15 (forecast)	2015-16 (forecast)
Average revenue control			
Average revenue control from first determination**	$610.11/connection	$610.11/connection	$610.11/connection
Average actual/forecast revenue***	$608.13/connection	$607.07/connection	$607.52/connection
Variance %	-0.32%	-0.50%	-0.42%
Allowable revenue			
Allowable revenue as per first determination**	$353.4 million	$356.6 million	$359.8 million
Actual/revised forecast revenue***	$352.2 million	$354.8 million	$358.3 million
Variance****	-$1.1 million	-$1.8 million	-$1.5 million

*Based on December 2013 real dollars in line with ESCOSA's first determination and the 2015-16 Statement of Compliance issued to ESCOSA.
**Based on 578,892 connections forecast to start the first determination, and 0.9% growth in connections per year.
***Based on actual connection of 579,203 in 2013-14 and current connection forecasts of 584,443 in 2014-15 and 589,723 in 2015-16.
****Agrees to Statement of Compliance issued to ESCOSA. Variances may not add due to rounding.

The first determination outlined a revenue adjustment mechanism where a cumulative revenue variation greater than 1% in the first regulatory period would result in 30% of the variation being rolled into the second determination. The current variation between the allowable revenue for the first regulatory period and the actual/forecast revenue suggests an under recovery of revenue in the first regulatory period of around $4.4 million (Table 11.1). This amount would not be sufficient to trigger the revenue adjustment mechanism for sewerage revenues. At the time of writing this proposal, final sewerage revenue is uncertain, so we did not factor a revenue adjustment into our proposal. ESCOSA will consider our latest revenue information as part of the second determination, to assess whether the revenue adjustment mechanism has been triggered.

11.3 Our proposal

The building blocks and total allowable sewerage revenue we propose for direct control sewerage services for each year of the second regulatory period is shown in Table 11.2. Our proposals require $1.353 billion of revenue from sewerage customers over the second regulatory period. Section 11.4 discusses the key inputs of the revenue model, and Section 11.5 outlines the calculation of each building block.

Table 11.2 Proposed allowable revenue – sewerage (Dec 2014 $'million)*

	2016-17	2017-18	2018-19	2019-20
Return on asset (RAB)**	160.2	161.2	163.1	165.0
Return on working capital***	0.6	0.6	0.6	0.6
Operating expenditure	131.1	131.3	131.1	129.8
Depreciation***	93.6	96.7	100.2	103.5
Tax****	-	-	-	-
Community service obligations (CSOs)	-49.8	-48.9	-48.1	-47.4
Recycled water revenue	-3.9	-5.1	-6.4	-6.7
Pass throughs	-	-	-	-
Total allowable revenue	**331.8**	**335.8**	**340.5**	**344.8**
Smoothed allowable revenue ***	**332.2**	**336.1**	**340.2**	**344.3**
Smoothed total				**1,352.8**

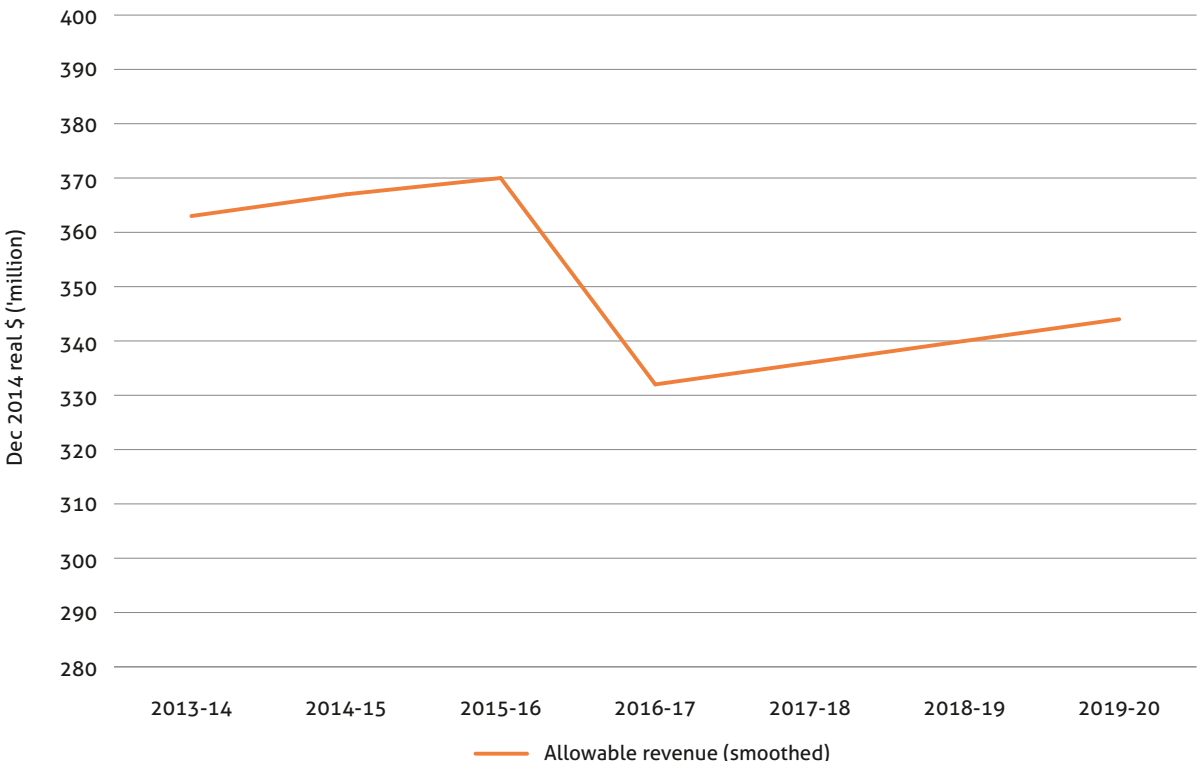
*Building blocks and allowable revenues are summarised outputs from the revenue model. KPMG independently examined the revenue model and did not identify any issues which would have a material impact on the results.
**Calculated on mid-year asset values.
***Discounted to mid-year values.
****An increase in the 'cost of debt' results in an income tax liability of zero for the second regulatory period.
*****Calculated as a net present value. Smoothing of prices rather than revenue which means smoothed allowable revenue increases slightly each year in line with growth in customer numbers.

The efficiencies we propose over the second regulatory period, combined with favourable financial market conditions, means our proposed allowable sewerage revenue is, on average, 7.8%[2] (in real terms) less than that determined for the first regulatory period. The real revenue reduction we propose for the second regulatory period is shown in Figure 11.2. After allowing for inflation (estimated at 2.5% per year), proposed allowable sewerage revenue is an average 0.9% lower (in nominal terms) than that determined for the first regulatory period.

2 Average allowable revenue from 2016-17 to 2019-20 divided by average allowable revenue from 2013-14 to 2015-16, less 1.

Chapter 12 discusses the impact of the proposed allowable revenue on sewerage prices, along with the price impacts of other changes (such as changes in customer numbers and other sources of revenue, like trade waste revenue). For the second regulatory period, we again propose to smooth prices. As a result, smoothed allowable revenue will naturally increase over the second regulatory period as customer connections grow.

Figure 11.2 Allowable sewerage revenue



11.4 Inputs to building blocks

The building block method to calculate the allowable revenue has 7 building block components (Figure 11.1). These building block components are calculated using 5 inputs. These inputs are detailed in the following areas of our proposal:

- Sewerage regulated asset base (RAB) – section 11.4.1
- Regulatory rate of return (post-tax real) of 4.20% – chapter 4
- Other regulatory obligations – chapter 2, community service obligations (CSOs) and Ministerial Directions – section 11.5.6 and service standards – chapter 3
- Sewerage customer growth of 1.2% per year – chapter 12
- Capital expenditure for our sewerage service of $537.2 million which is made up of a:
  - $479.7 million proposed investment in sewerage infrastructure – chapter 9
  - $57.5 million proposed investment in IS infrastructure (50% of IS capital expenditure has been allocated to the sewerage service) – chapter 13.

11.4.1 Regulated asset base

The sewerage RAB reflects our investment in assets over time to deliver direct control sewerage services. The sewerage RAB is important for calculating the return on assets and depreciation.

The Treasurer's Second Pricing Order established an initial sewerage RAB value at 1 July 2013 of $3.585 billion (Dec 2012 real $) or $3.781 billion (Dec 2014 real $). The initial sewerage RAB value has been updated (rolled forward) to reflect asset changes since the value was set.

11.4.1.1 Opening sewerage RAB at 1 July 2016

Table 11.3 details how the initial sewerage RAB value has been rolled forward to derive an opening sewerage RAB value of $3.8 billion for the second regulatory period (at 1 July 2016). Attachment K outlines the roll forward for each asset class.

Table 11.3 Rolling forward the sewerage RAB value – first regulatory period (Dec 2014 real $'million)

	2013-14	2014-15	2015-16
Opening value	3,780.7	3,778.2	3,799.1
Capital expenditure	92.7	118.5	140.3
Disposals	0.6	0.4	0.5
Depreciation	94.6	97.2	100.2
Closing value	**3,778.2**	**3,799.1**	**3,838.7**

The opening sewerage RAB value at 1 July 2016:

- Converts values to December 2014 real dollars[3]
- Incorporates actual and forecast outcomes for the first regulatory period, including capital expenditure, asset disposals and depreciation.

As a result, the opening sewerage RAB value at 1 July 2016 is lower by $31.7 million (Dec 2014 real $) than forecast in the first determination. A lower opening sewerage RAB reduces pressure on sewerage prices over the second regulatory period, via a lower return on the sewerage assets and lower depreciation. The opening sewerage RAB is subject to change, pending the results of ESCOSA's review of capital expenditure for the first regulatory period.

11.4.1.2 Sewerage RAB values over the second regulatory period

We rolled forward annual sewerage RAB values for the second regulatory period, consistent with ESCOSA's Framework and Approach. Under this method, we adjust the opening sewerage RAB value for capital expenditure, asset disposals and depreciation, to determine a closing sewerage RAB value. The closing sewerage RAB value then becomes the opening sewerage RAB value for the following year. The rolled forward sewerage RAB for each year of the second regulatory period is shown in Table 11.4 with more detailed information by asset class provided in attachment K.

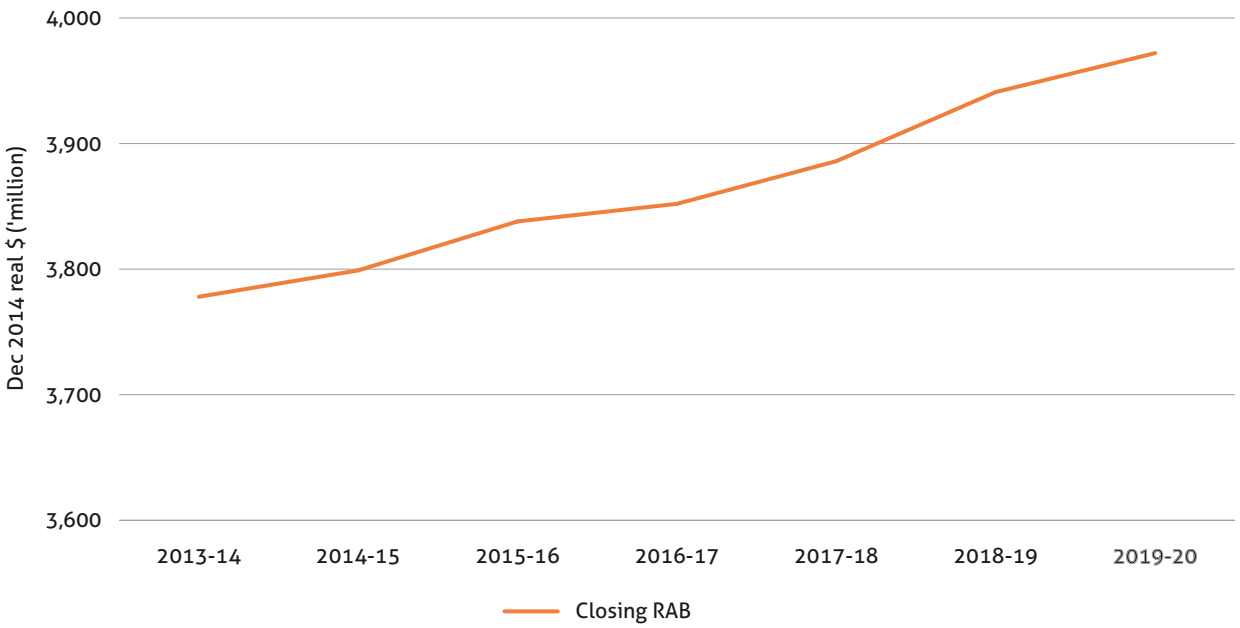
Table 11.4 Rolling forward the sewerage RAB value – second regulatory period (Dec 2014 $'million)

	2016-17	2017-18	2018-19	2019-20
Opening value	3,838.7	3,851.8	3,885.7	3,941.1
Capital expenditure	109.1	133.1	158.2	136.9
Disposals	0.4	0.5	0.5	0.5
Depreciation (end-of-year value)	95.6	98.7	102.3	105.7
Closing value	**3,851.8**	**3,885.7**	**3,941.1**	**3,971.8**

3 Consumer price index (CPI, weighted average of 8 capital cities) is applied on a 9 month lag. We converted the values from December 2012 to December 2014 based on the observed CPI from March 2012 to March 2014, which was 5.5%.

Figure 11.3 shows the trend in closing sewerage RAB values over the first and second regulatory periods. The marginally higher sewerage RAB value at the end of the second regulatory period reflects investment to improve environmental performance, maintain service levels and to provide longer term efficiency savings.

Figure 11.3 Closing sewerage RAB values



11.5 Calculation of the building blocks

The building block method in Figure 11.1 has 7 building block components to calculate the allowable revenue. The building block values (Table 11.2) we calculated are detailed in this section.

11.5.1 Return on sewerage RAB

Reflecting the slight growth in sewerage RAB values and the lower regulatory rate of return, we forecast the return on asset building block to be an average 4.7% ($8 million) per year less than in the first regulatory period.

We calculated the return on the sewerage RAB for each year of the second regulatory period by multiplying the sewerage RAB value (mid-year value) by the post-tax real regulatory rate of return. The detail is provided in attachment K. This approach is consistent with the method used in the first regulatory period.

11.5.2 Return on working capital

Working capital is the smallest building block, and we forecast it to be stable across the first and second regulatory periods.

We calculated the return on working capital for the second regulatory period using the same method and assumptions used for the first regulatory period. The calculation is based on a uniform collection of expenditure and revenue across the year, even though revenue is delayed compared with expenditure. To fund this delay, we borrow to ensure we have sufficient cash (that is, capital) to operate. The revenue model allows us to recover this additional cost. In accordance with the method used for the first determination, we discounted the end-of-year working capital to a mid-year value to calculate the building block in the revenue model.

11.5.3 Operating expenditure

We forecast operating expenditure to be on average 11.5% lower in the second regulatory period than in the first regulatory period. This decrease will cut about $17 million per year, on average, from the allowable revenue and help reduce prices.

Chapter 10 details the operating expenditure that we propose for the second regulatory period for the prudent and efficient delivery of direct control sewerage services. We propose efficiency savings on base sewerage expenditure, which are partially offset by new initiatives to improve services for customers and by external obligations.

11.5.4 Regulatory depreciation

We forecast depreciation to be an average 2.8% higher in the second regulatory period compared with the first regulatory period. This increase will add $3 million per year to our average allowable revenue. Depreciation will grow over the second regulatory period because the value of new assets entering the RAB is higher than the value of existing assets exiting the RAB. As a result, the closing value of assets is higher (Figure 11.3).

Regulatory depreciation accounts for around one quarter of allowable revenue. For this reason, the depreciation method can significantly affect allowable revenue over a regulatory period. We propose to update our depreciation method so regulatory and tax useful lives for each asset class are based on a weighted average). The proposed method is consistent with interstate practice, provides appropriate cash flows and ensures customers fairly and evenly contribute to the costs of the infrastructure used to provide their service. Further support for this method (including a worked example) is provided in attachment K.

Based on a weighted average method and the latest available information (particularly capital[4] expenditure over the first regulatory period), we reviewed the useful life of each asset class for regulatory purposes. We propose the useful lives in Table 11.5 for the second regulatory period for new and existing assets.

Table 11.5 Proposed regulatory useful life, by sewerage asset class (years)

Sewerage asset class	Average remaining life of existing assets (at 1 July 2016)	Average economic life of new assets
Pipes	63.4	107.0
Non-pipes	29.1	47.0
Corporate depreciable	7.4	15.0

When we incur expenditure on new assets, only 50% of the annual depreciation for that asset is reflected (for regulatory purposes) in the first year. This approach is consistent with that used in the first regulatory period, and with the revenue model's assumption for expenditure to be applied evenly across the year.

Table 11.6 outlines the proposed end-of-year depreciation for each sewerage asset class. This depreciation value is used for rolling forward the sewerage RAB. We discounted the total end-of-year depreciation to a total mid-year value to calculate the depreciation building block in the revenue model.

Table 11.6 Proposed depreciation, by sewerage asset class (Dec 2014 $'million)

Sewerage asset class	2016-17	2017-18	2018-19	2019-20
Pipes	36.5	36.7	36.9	37.1
Non-pipes	46.7	48.5	50.8	53.2
Corporate depreciable	12.4	13.5	14.6	15.4
Total end of year	**95.6**	**98.7**	**102.3**	**105.7**
Total mid-year value*	**93.6**	**96.7**	**100.2**	**103.5**

*Total mid-year value discounted by half a year's regulatory rate of return

4 ESCOSA indicated we should update depreciation to account for actual capital expenditure.

11.5.5 Tax

The increased cost of debt for the second regulatory period will result in lower taxable income for regulatory purposes. For the first determination our tax allowance was $4 million. However, the increased cost of debt and lower revenue means our tax deductions are now higher than our income. This result reduces our tax allowance to zero.

We calculated regulatory tax under the same method used in the first regulatory period, as confirmed in ESCOSA's rate of return report. The method assumes a tax expense for a benchmarked efficient entity using the cost of debt assumptions of the regulatory rate of return. We use this method as we are exempt from paying income tax to the Australian Government as we are wholly owned by the South Australian Government. To ensure competitive neutrality with private businesses, we pay income tax equivalents to the South Australian Government.

Unlike the rest of the revenue model, the tax calculation includes the impacts of inflation[5], capital contributions from property owners and developers, and gifted assets from developers.

11.5.6 Community service obligation payments

Compared with the first regulatory period, we forecast CSO funding in the second regulatory period will decrease by 1% ($0.5 million) per year on average. This decrease will add pressure to sewerage prices.

The section 6 Ministerial Direction issued under the *Public Corporations Act 1993* and as part of the Government's 2014-15 Budget[6] states the South Australian Government will pay us CSO payments for the non-commercial activities that the government requires us to undertake. Table 11.7 outlines the CSOs over the second regulatory period as stipulated by the section 6 Ministerial Direction.

Table 11.7 CSO payments for sewerage services (Dec 2014 $'000)

	2016-17	2017-18	2018-19	2019-20
Statewide pricing	38,680	37,740	36,820	35,920
Exemptions and concessions	10,600	10,700	10,810	10,910
Emergency management services	170	180	180	190
Emergency service concessions (SAPOL)	20	20	20	20
Administration of pensioner concessions	130	120	120	130
Government radio network	170	180	180	190
Total	**49,770**	**48,940**	**48,130**	**47,360**

11.5.7 Recycled water

The building block approach classifies recycled water services as direct control sewerage services for calculating costs, because it is considered the lowest cost approach for treating the effluent. However, any revenue that we recover from recycled water charges will offset our sewerage revenue.

5 For tax purposes, we calculated inflation based on a CPI of 2.5%
6 A number of the CSO values are stated at a whole of business level in the section 6 Ministerial Direction. We allocated them between water and sewerage.

11.5.8 Pass throughs (first regulatory period)

The pass through mechanism for the first regulatory period allows us to pass on to customers any material costs or benefits of unforeseen events or legislative changes that we could not plan for or mitigate. It banks material variances, passing through any permissible costs or benefits as part of the second determination.

At the time of writing our proposal, we had not experienced any material changes to the costs of running our sewerage service. For this reason, we do not seek to recover any additional costs for the first regulatory period through the second determination.

11.6 Revenue adjustment mechanisms for the second regulatory period

11.6.1 Demand

As required by ESCOSA's Framework and Approach, we propose a revenue adjustment mechanism for the second regulatory period. The mechanism that we propose:

- Calculates the annual variation in total revenue (that is, allowable revenue less actual revenue)
- Banks the annual revenue variations over the second regulatory period
- Assesses whether the total variation in revenue over the regulatory period is material. We propose a 1% materiality threshold (approximately $14 million)
- Adjusts the allowable revenue in the third determination by 50% of the total variation if the variation is material. To ensure price stability for the third determination, we propose to spread the adjustment over the full regulatory period.

We consider this approach shares forecasting risk evenly with customers, promotes price stability and accounts for the impact of demand changes on our revenue. Further, it meets the requirements of the Third Pricing Order for a revenue adjustment mechanism that is 'relevant and material' and that promotes 'a stable price path for retail services'.[7]

11.6.2 Pass through

The benefits or efficient costs of unforeseeable or uncertain events that occur during the second regulatory period are subject to a pass through mechanism. The mechanism enables us to pass through these benefits or costs to customer prices, on determination by ESCOSA. Its benefits are that it:

- Keeps prices down for customers, because our proposal includes only foreseeable, prudent and efficient expenditure
- Protects customers during the second regulatory period by passing on the benefits of unforeseen events that materially reduce our costs
- Protects us during the second regulatory period by maintaining our future financial viability if an unforeseen event materially increases our costs.

The first determination outlined a pass though mechanism to apply to the first regulatory period. We are proposing a similar mechanism for the second regulatory period which will apply when:

- Our legal obligations change or an extraordinary event occurs, and the change affects the costs of providing our retail service
- The event is material and we could not avoid it by acting prudently and efficiently
- We could not mitigate any cost impacts through prudent management.

The pass through mechanism for the first regulatory period allowed for the pass though of costs or benefits to be considered as part of the second determination. Although this supported price stability for customers it did not allow customers to get the immediate benefit of any cost reduction which we would pass on through reduced prices. It also did not consider the financial impact on our business. To address this outcome for the second regulatory period, we propose that pass throughs be considered as they occur with costs or benefits passed on to customers as part of the next annual price reset or, if practical, deferred to the next price determination to maintain price stability for customers.

7 Section 3.5 of the Third Pricing Order.

11.7 Summary

We focused on the affordability of sewerage services for our customers when developing our proposal and assessing the required revenue for the second regulatory period. The allowable sewerage revenue that we propose for the second regulatory period is, on average, 7.8% less than the allowable sewerage revenue for the first regulatory period. This reduction will mean lower sewerage prices for customers.

We developed the revenue proposal using the ESCOSA proposed method. We were guided by the approach used for the first determination if ESCOSA did not propose particular requirements.

The allowable revenue that we propose is based on current expenditure forecasts and on current observable market inputs for the rate of return at the time of preparing our proposal. These inputs may be different when ESCOSA makes its determination and this would affect the final allowable revenue.


SA Water
Government of South Australia
SA Water
Hard Yakka

Chapter 12
Customer impacts and price benchmarking

KEY POINTS

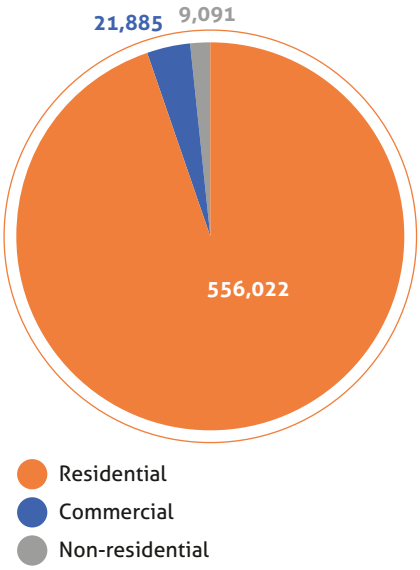
Affordable sewerage bills remain one of our key priorities. We propose a decrease of 9% in sewerage prices in 2016-17 and inflation only increases for the remaining 3 years of the second regulatory period. Under this proposal, sewerage prices will be lower than those charged in the first regulatory period.

We benchmark our sewerage prices relative to those of other jurisdictions. Our sewerage prices are among the lowest, which we expect to continue over the second regulatory period.

12.1 About our customers and our price structure

We have 556,022 residential (household) customers, 21,885 commercial customers and 9,091 non-residential customers. Residential customers account for the majority of our sewerage service (Figure 12.1).

Figure 12.1 Our customers, by type



Our current price structure for sewerage services is a single fixed rate for sewerage supply, which is set relative to a customer's property value and subject to an annual minimum. Non-residential and commercial customers pay a slightly higher rate per dollar than residential customers, but all customers pay the same annual minimum charge.

Country customers are charged a slightly higher rate per dollar than metropolitan customers. The higher rate recognises property values in the country are, on average, lower than those in the metropolitan area. In the second regulatory period, the average sewerage bill for country customers will still remain lower than the average metropolitan sewerage bill. But we aim to gradually reduce the gap, in line with the South Australian Government's statewide pricing policy.

A small number of commercial and non-residential sewerage customers dispose of trade waste into the sewerage system. Trade waste can impose additional treatment and disposal costs on us, so we use a different pricing mechanism for these customers.

12.2 Indicative price changes

Based on our proposed allowable sewerage revenue (chapter 11), sewerage prices will fall by 9.0% in 2016-17, but rise by inflation in the following 3 years. Affordability is a key concern for customers so we worked to reduce prices by keeping our costs under control.

We set prices annually to achieve the allowable sewerage revenue determined by ESCOSA. Prices are usually set in May or June each year following the ABS

release of inflation values (for the 12 month period ending in March). We do not know the actual rate of inflation so the price impacts in Table 12.1 are only indicative at this stage.

To estimate the impacts of our revenue proposal on customer prices, we calculated indicative prices and charges for each year of the second regulatory period, and then indicative bills for average customers. We based our calculations on our proposed allowable sewerage revenue (chapter 11).

Table 12.1 outlines the indicative sewerage price changes we propose and the inflation estimates over the first and second regulatory periods. We propose an indicative decrease in sewerage prices for customers of 9.0% in 2016-17, followed by inflation only increases in the following 3 years. This meets our commitment to keep price increases below the rate of inflation over the second regulatory period. After allowing for the impact of inflation, sewerage price changes we propose equate to an 11.2% reduction in 2016-17 with no change in the remaining 3 years.

Table 12.1 Change in nominal sewerage prices

Change (%)	First regulatory period			Second regulatory period					Total (for both regulatory periods)
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total	
Sewerage price	1.6%	2.9%	1.3%	-9.0%	2.5%	2.5%	2.5%	-2.0%	3.8%
Inflation*	2.5%	2.9%	1.3%	2.5%	2.5%	2.5%	2.5%	10.4%	17.9%

*Based on actual inflation for 2013-14 to 2015-16 (March to March, ABS, CPI: all groups – weighted avg. eight capital cities 6401.0). We used a forecast of 2.5% for 2016-17 to 2019-20.

The indicative charges for the second regulatory period are shown in Table 12.2 below. These indicative prices assume pricing structures stay the same and reductions are applied evenly across all customer groups.

Table 12.2 Indicative nominal sewerage charges

	First regulatory period				Second regulatory period			
	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Indicative residential sewerage charge								
Minimum supply charge	$336.00	$341.40	$351.40	$355.80	$323.80	$331.90	$340.20	$348.70
• Metropolitan property rate (per $ property value)	0.001245	0.001261	0.001271	0.001288	0.001172	0.001201	0.001231	0.001262
• Country property rate (per $ property value)	0.001639	0.001661	0.001701	0.001732	0.001584	0.001632	0.001681	0.001731
Indicative non-residential/commercial sewerage charge								
Minimum supply charge	$336.00	$341.40	$351.40	$355.80	$323.80	$331.90	$340.20	$348.70
• Metropolitan property rate (per $ property value)	0.001383	0.001392	0.001423	0.001441	0.001312	0.001345	0.001378	0.001413
• Country property rate (per $ property value)	0.001892	0.001970	0.001996	0.002032	0.001859	0.001915	0.001972	0.002032

12.2.1 Customer growth assumptions

The indicative changes in sewerage charges are also based on our assumptions of customer growth. The higher the customer growth, the lower prices can be (all other things being equal) because the allowable revenue is distributed over more customers.

Actual and forecast growth rates have been around 0.9% in the first regulatory period.

Table 12.3 outlines the average growth rates up to 2014-15 by customer group. For the second regulatory period, we propose to adopt the historical 15 year average customer growth rate of 1.2% across residential, commercial and non-residential customers. Using a longer term average rather than recent history captures the overall trend for customer growth and provides a better pricing outcome for customers.

Table 12.3 Average customer growth rates to 2014-15, by customer class

Averaging period	Residential	Commercial	Non-residential	Total growth
5 years	1.3%	0.6%	-1.0%	1.2%
10 years	1.3%	0.9%	-0.2%	1.3%
15 years	1.3%	0.9%	0.5%	1.2%

This growth forecast is 0.3% per year higher than the growth assumption used for the first determination. These higher estimates of customer growth will slightly reduce the pressure on sewerage prices in the second regulatory period.

12.3 Indicative customer bill impacts

We are committed to keeping customer bills as low as possible over the second regulatory period. The significant sewerage price reduction in 2016-17 represents continued savings to customers over the second regulatory period.

Table 12.4 presents indicative bills over the second regulatory period for customers subject to the minimum charge and metropolitan and country customers with the average property value.

Approximately 30% of our residential customers are currently charged the minimum (Figure 12.2), so would save around $32 on their annual bill in the first year of the second regulatory period.

Table 12.4 Indicative residential sewerage bills (nominal $)

	2015-16	2016-17	2017-18	2018-19	2019-20
Minimum charge	356	324	332	340	349
$400,000 property value (metropolitan Adelaide)	515	469	480	492	505
$250,000 property value (country South Australia)	433	396	408	420	433

Figure 12.2 Breakdown of residential customers, by current annual sewerage bill

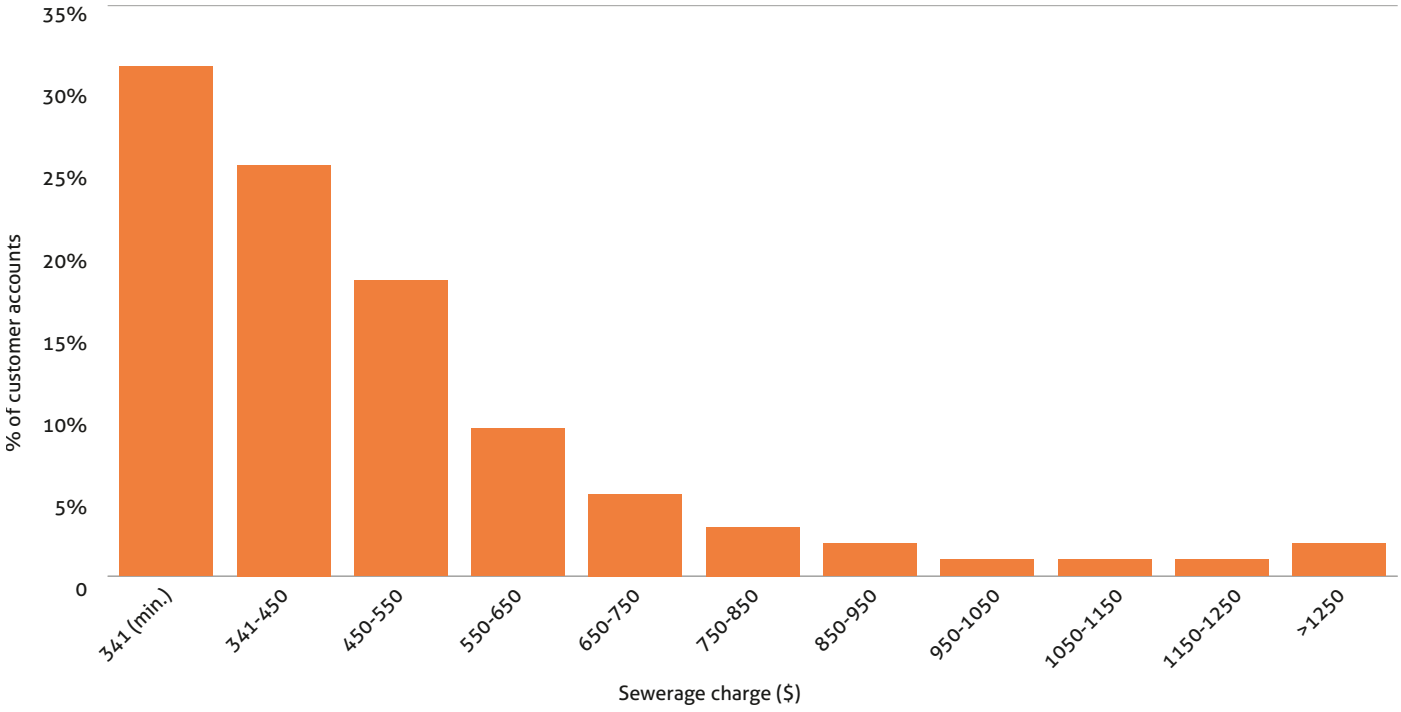


Table 12.5 outlines examples of sewerage bills based on property values for different types of commercial and non-residential customers. Bills will decrease in nominal terms over the second regulatory period for all types of customers.

Table 12.5 Indicative non-residential/commercial sewerage bills (nominal $)

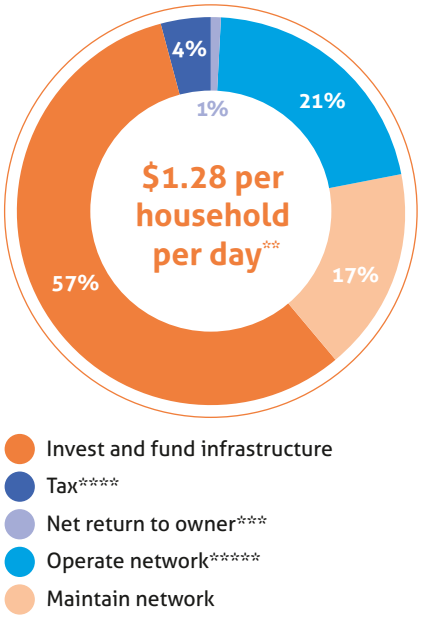
Customer type	Property value	2015-16	2016-17	2017-18	2018-19	2019-20
Non-residential						
Paper printing	1,100,000	1,586	1,443	1,479	1,516	1,554
Fish processing*	900,000	1,829	1,673	1,723	1,775	1,828
Dairy manufacturing*	1,900,000	3,861	3,533	3,638	3,748	3,860
Abattoir*	2,100,000	4,267	3,904	4,021	4,142	4,266
Winery*	2,900,000	5,893	5,392	5,553	5,720	5,892
Commercial						
Delicatessen	290,000	418	380	390	400	410
Fruit and veg shop	500,000	721	656	672	689	706
Car wash	740,000	1,067	971	995	1,020	1,045
Restaurant	900,000	1,297	1,181	1,210	1,240	1,271
Service station	1,100,000	1,586	1,443	1,479	1,516	1,554
Supermarket	3,700,000	5,334	4,854	4,975	5,099	5,227
High rise hotel	40,700,000	58,669	53,389	54,724	56,092	57,494
Major shopping centre	500,000,000	720,750	655,882	672,279	689,086	706,313

*Based on property rate for country customers. All other groups based on metropolitan property rate.

12.4 What does this pay for?

Our proposal represents value for money for our customers. We invest the majority of the money we receive from customers directly into providing sewerage services (Figure 12.3). The government receives only marginal returns.

Figure 12.3 What sewerage prices pay for*



*Based on 2016-17 bills and allowable revenue.
**Based on average metropolitan residential customer with a property valued at $400,000 (nominal $).
***Net return to owner is net of Community Service Obligation payments from the South Australian government.
****Tax is based on accounting values and paid to the South Australian Government as a tax equivalent.
*****Operate network is net of recycled water revenue.

12.5 Price benchmarking

Sewerage prices across Australia have been steadily increasing over the past 5-10 years, reflecting increasing input costs and major replacements of ageing infrastructure.

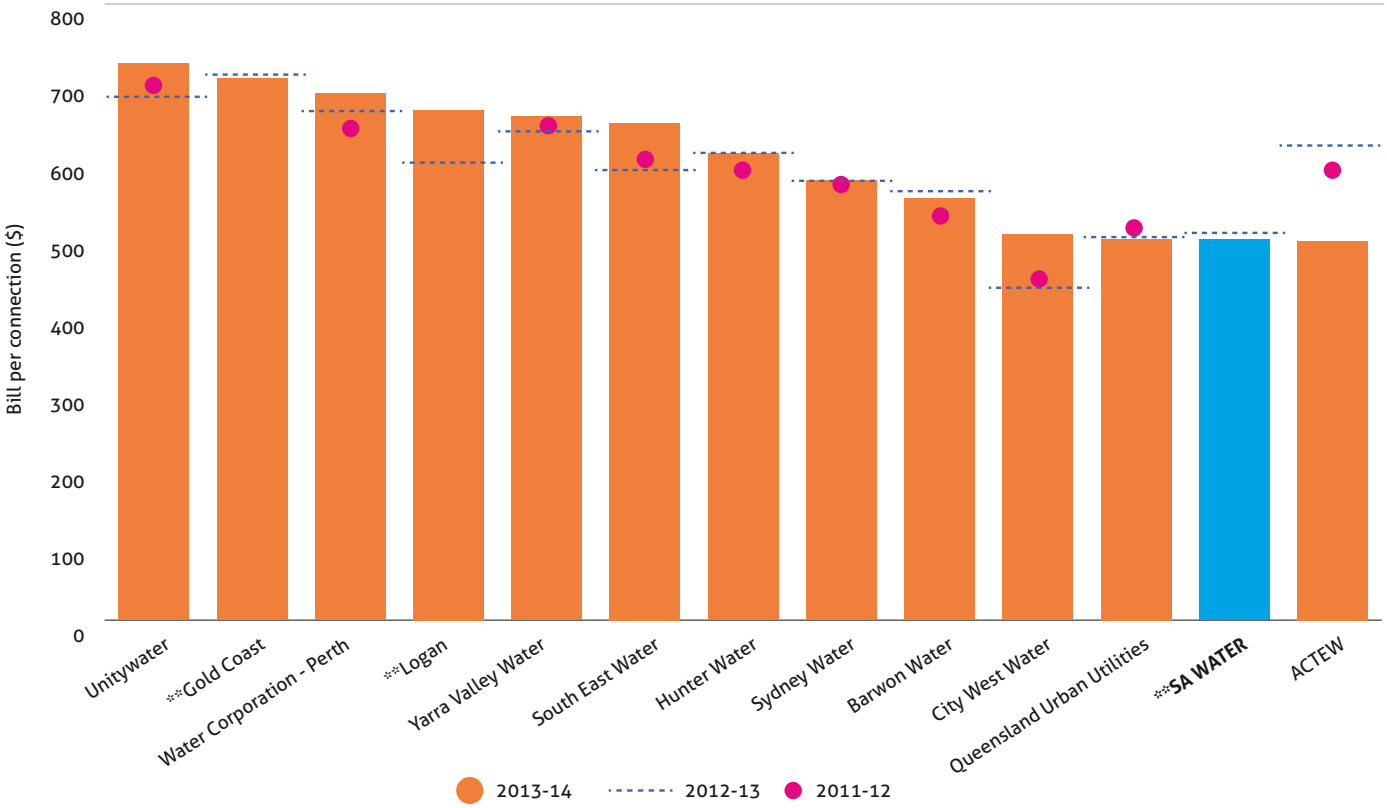
Price setting is influenced by a range of factors unique to each utility including historical precedent, ownership structure, government policy, service levels, geography and customer profile.

Despite this difficulty, Figure 12.4[1] compares 2012-13 and 2013-14 sewerage bills across a peer group of large interstate utilities. We sourced this information from the 2013-14 *National performance report* (NPR).[2]

Because our metropolitan customers and country customers have different bills we have used our sewerage bill for metropolitan customers only, rather than the whole of business data used in the NPR.[3] Our sewerage bills were among the lowest in 2012-13 and 2013-14, compared with other large interstate utilities even using the higher metropolitan bills (Figure 12.4).

1 For utilities that use a volumetric charge, the sewerage bill will vary for different consumption levels.
2 Bureau of Meteorology 2014, *National performance report 2013-14:* urban water utilities, Part B dataset.
3 Metropolitan customers have a higher sewerage bill based on average property value, compared with country customers.

Figure 12.4 Interstate bill comparison – annual sewerage bill for utilities with 100,000+ connections*



*Bureau of Meteorology 2014, *National performance report 2013-14: urban water utilities*, Part B dataset.
**Did not report against the indicator for 2011-12.

Our sewerage prices increased by 1.6% in 2013-14 and in line with inflation in both 2014-15 and 2015-16. Despite running a number of large capital programs to update sewage treatment facilities as shown in Figure 12.4, we continue to have one of the lowest sewerage bills in recent years compared with our peer group.

We operate and maintain our sewerage networks very efficiently – this is why our sewerage bills are amongst the lowest in Australia.

12.6 Summary

Affordable sewerage bills remain one of our key priorities. We propose a price reduction of 9.0% in sewerage prices in 2016-17 and increases limited to inflation for the remaining 3 years of the second regulatory period. This proposal means sewerage prices, will be lower than those charged in the first regulatory period.

We benchmarked our sewerage prices relative to those of other jurisdictions. Our sewerage prices are among the lowest, which we expect to continue over the second regulatory period.

Chapter 13
Investment in technology

KEY POINTS

As we move towards 2020 we will boost investment in technology to improve our customers' experience, drive efficiencies across our business and future proof our technology. We propose to invest $115 million in technology over the second regulatory period. Our proposed technology capital plan represents an average annual increase of $8 million compared with the first regulatory period.

Customers told us they want to engage differently with us in the future. Investment in technology is a key enabler for us to respond to this challenge. In the second regulatory period we will implement the next phase of our Digital Strategy. The outcomes of this investment will provide customers enhanced communication channels, more ways for them to engage with us and broader access to information about their service.

We acknowledge customers are concerned about affordability. The proposed technology capital plan includes $33 million of technology enabled initiatives to deliver operational savings of $11 million per year by 2020. These operational savings will help keep water and sewerage prices as low as possible.

We propose to maintain and secure our existing technology so we can continue to deliver reliable and resilient services cost effectively.

13.1 Our proposal

Our overall capital investment focuses on water and sewerage infrastructure to provide services to customers. As customer expectations change and as developments in technology make information more accessible our capital investment must focus increasingly on the technology supporting our business.

We propose to invest $115 million of capital in technology over the second regulatory period to improve customer experience, improve business efficiencies and future proof our technology (Table 13.1). By 2020, our proposed investment will result in $2.8 million of additional support and licensing costs per year and achieve operating cost efficiencies of $11.4 million per year.

Table 13.1 Proposed capital technology plan for second regulatory period (Dec 2014 real $'million)

	Proposed capital investment*	Annual operating cost increase by 2019-20**	Annual operating cost savings by 2019-20**
Business change program			
Improve business efficiencies	32.5	2.1	9.5
Improve customer experience	13.5	0.2	1.1
Plan for the future	22.0	0.5	0.8
Business change program sub total	**68.0**	**2.8**	11.4
IT asset lifecycle program	**47.0**	**-**	-
Technology capital plan	**115.0**	**2.8**	11.4

*Information technology capital expenditure is allocated 50% to water and 50% to sewerage.
**Only relate to increases in IT capital expenditure in the second regulatory period. Costs are allocated across services based on our cost allocation method for the second regulatory period.

13.2 How are we performing in the first regulatory period?

In the first regulatory period our technology capital plan focused on delivering technology investments to address business risk and to maintain the life of technology assets.

In 2013 we initiated a major change program across our business. This included:

- A Business Transformation program to respond to changing customer expectations and efficiency targets set for the first regulatory period
- An organisation-wide restructure.

As a result we reprioritised our technology capital plan for the first regulatory period to focus on efficiency and improved customer outcomes rather than the original risk based initiatives. Table 13.2 compares our technology capital expenditure with the capital expenditure allowances in the first determination. Our technology capital expenditure is occurring later than planned and we are forecasting to spend an additional $4.7 million to implement the new business initiatives over the first regulatory period.

Table 13.2 Technology capital plan expenditure for first regulatory period (Dec 2014 real $'million)

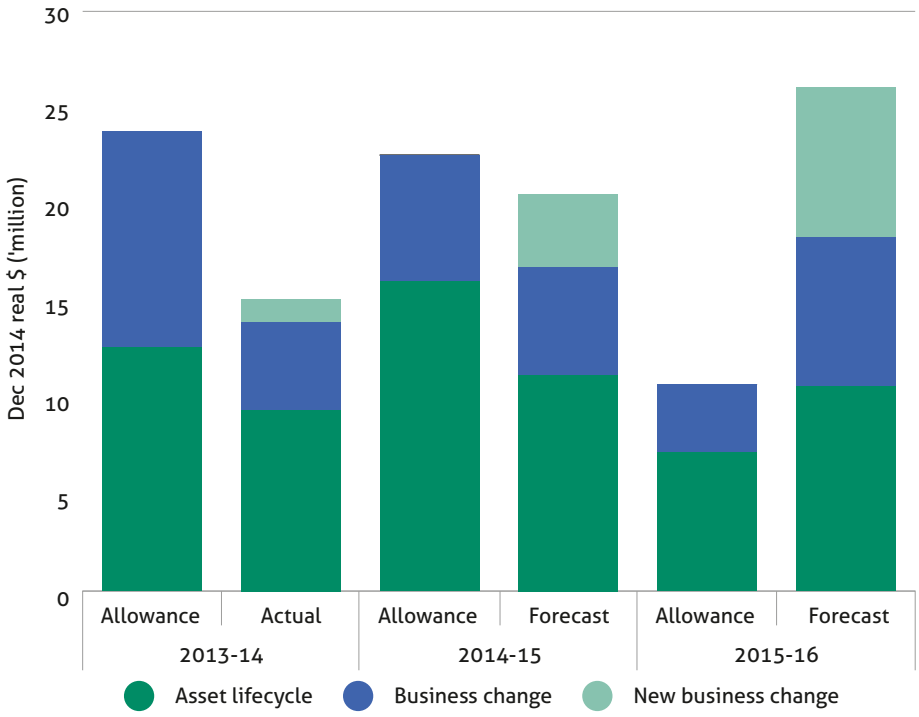
	2013-14	2014-15	2015-16	Total
Technology capital expenditure allowance from first determination*	23.3	22.4	10.5	56.2
Actual/forecast technology capital expenditure**	15.5	20.3	25.1	60.9
Variance	**-7.8**	**-2.1**	**14.6**	**4.7**

*Includes efficiency savings of 1% per annum as required in first determination.
**As at January 2015.

Figure 13.1 represents our technology capital expenditure by program across the first regulatory period. The figure shows:

- Increased investment in new business initiatives across the period to support Business Transformation. This investment includes the Digital Program which is delivering a new website platform, a residential customer portal to provide basic online account management and self-service and improvements to customer enquiry handling
- Reduced investment in planned business change initiatives because we refocused our investment towards efficiency and customer experience outcomes
- Deferred investment of planned business change initiatives to later years of the first regulatory period following a change to our organisational structure
- Deferred investment of planned asset lifecycle initiatives to later years of the first regulatory period because we updated our technology infrastructure strategy to consider the benefits of emerging technologies such as cloud computing.

Figure 13.1 Technology capital plan by program for first regulatory period



Our investment in technology is aligned with our corporate outcomes for success; delivering a great customer experience, providing value for money, investing for the future and maintaining reliable services for our customers.

13.3 Approach to developing our proposal

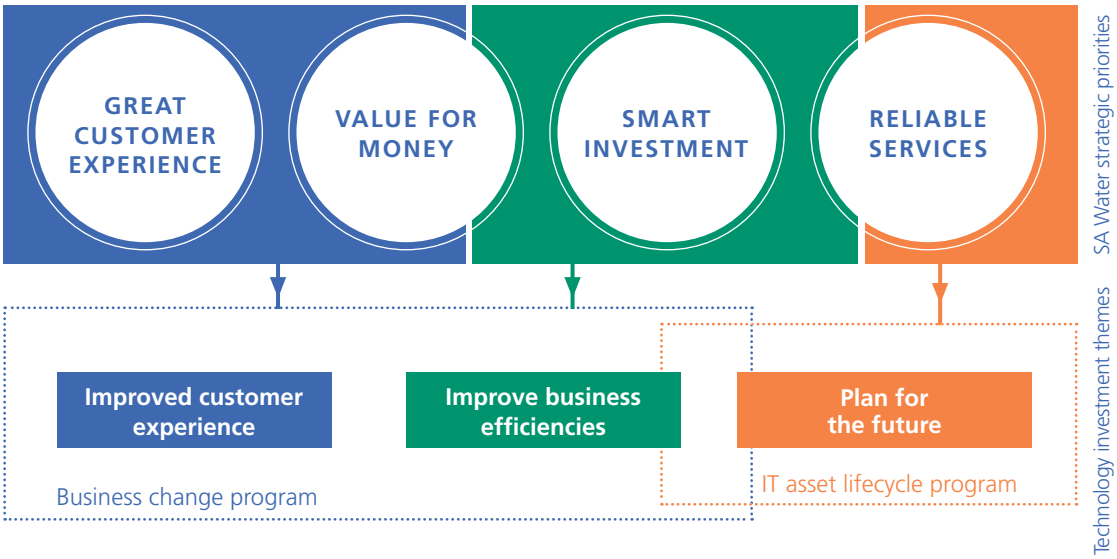
13.3.1 Technology capital plan framework

Figure 13.2 depicts the framework we used to develop our technology capital plan for the second regulatory period. We classify our proposed technology investments into:

- *Technology investment themes aligned with our strategic priorities* – Improve customer experience, improve business efficiencies and plan for the future (discussed in more detail below)
- *Investment programs* – Where projects that support business improvement are classified as part of the business change program, while projects that manage existing technology are classified as part of the IT asset lifecycle program (applies to applications and infrastructure).

The supporting document *Technology capital planning approach – 2016-20* (attachment L) our approach to developing the information technology capital plan. Business cases to support our proposed investments are available for ESCOSA review as part of the second determination process.

Figure 13.2 Technology capital plan framework



Improve customer experience

During our recent customer engagement program, Your Say, our customers told us they:

- Favour multiple channels of communication instead of the traditional telephone based service
- Want choice in how they interact with us and they seek online self-service options
- Value a case management approach to customer service based on a comprehensive view of previous interactions, account history and communication preferences.

We developed our *Digital Strategy: 2014 – 2020* (attachment M) to recognise the changing expectations of customers and the need to modernise and streamline customer facing services and channels. We will continue to implement our Digital Strategy over the second regulatory period to provide increased customer functionality and business process savings. Specifically, we will build on the Digital Program we started implementing in the first regulatory period.

Improve business efficiencies

To meet the challenge of more affordable services for customers, we propose investment in technology to reduce operating costs. These investments in technology will provide timely and relevant information so we can optimise our business processes and innovate in how we deliver services. The business efficiencies will help keep prices as low as possible while maintaining or improving service to customers.

Plan for the future

We propose investment in a sustainable technology platform so we can better engage with our customers, improve our operational effectiveness and manage risks. We want to use technology to learn more from our customer data and to know more about our operational environment. Investment in technology platforms will support immediate customer and business needs but be scalable to support future needs.

We have already made significant progress in harnessing data within the first regulatory period. We implemented an enterprise-wide information management platform for managing critical data sets and gaining new insights into our internal business operations. In the second regulatory period we will focus on leveraging information to:

- Increase the maturity of our data analysis capabilities so we can better understand customer needs and drive corporate performance
- Translate complex data into concise information to enable effective evidence based decision making
- Ensure the data underpinning the information is resilient, accurate and reliable.

To ensure business continuity and stable, reliable technology services, we will also continue to invest in our existing technology assets through modernisation and upgrade activities.

13.3.2 Governance process

We developed the technology capital plan via an extensive business planning process and robust internal and external consultation processes including Your Say. We considered a broad range of technology needs from across the business.

To address competing priorities we adopted a comprehensive internal governance process including:

- A top–down strategic analysis to ensure the technology capital plan aligns with our strategic priorities
- Detailed business cases for each investment proposal including a bottom–up approach to costing
- Management review and prioritisation to ensure investments are prudent and efficient.

KPMG independently assured the governance process and controls we applied to developing our capital technology plan (see section 13.4.3).

The supporting document *Technology capital planning approach and summary – RBP 2016* (attachment L) details the governance process and controls.

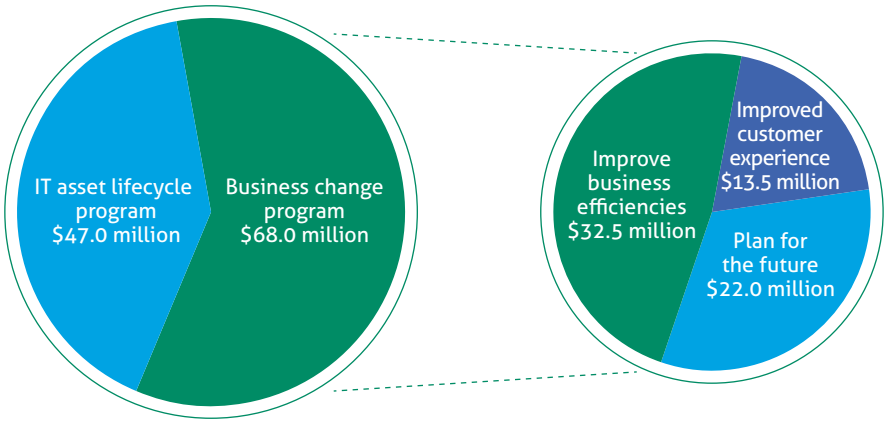
13.4 Our proposal for the second regulatory period

13.4.1 Proposed investment

We propose to invest $115 million of capital in technology over the second regulatory period. Figure 13.3 shows investment of:

- $68 million for the business change program which will improve customer experience and business efficiencies
- $47 million for the IT asset lifecycle program which will enable us to maintain existing technology platforms through modernisation and upgrade activities, enabling us to continue the delivery of reliable, stable and secure services to our customers.

Figure 13.3 Technology capital plan for second regulatory period (Dec 2014 real $'million)



We will incur ongoing support and licence costs of $2.8 million per year associated with the proposed capital investment (Table 13.3). The additional operating costs are significantly lower than the estimated operational savings of $11.4 million per year we will achieve by 2020. Our proposed investment in technology will also help us deliver some of our capital delivery efficiencies across our infrastructure capital program.

Table 13.3 Technology Capital Plan for second regulatory period (Dec 2014 real $'million)

	Proposed capital investment*	Annual increase operating costs**	Operating cost savings**
Business change program			
Improve business efficiencies	32.5	2.1	9.5
Improve customer experience	13.5	0.2	1.1
Plan for the future	22.0	0.5	0.8
Sub total	**68.0**	**2.8**	**11.4**
IT asset lifecycle program	**47.0**	**-**	**-**
Total	**115.0**	**2.8**	**11.4**

*The information technology capital expenditure is allocated 50% to water and 50% to sewerage, as supported in principle by ESCOSA.
**This operating expenditure is allocated between the water, sewerage, excluded and non-regulated business segments based on the cost allocation method for the second regulatory period.

Figure 13.4 and Table 13.4 illustrate the increasing profile of our technology capital investment over the first and second regulatory periods. The Business Change program is driving a large percentage of the increase with average annual investment rising from $9.9 million in the first regulatory period to $17.0 million in the second regulatory period. The IT Asset Lifecycle program is also increasing from $10.4 million in the first regulatory period to $11.7 million in the second regulatory period.

Figure 13.4 Technology Capital Plan comparison, 2013-14 to 2019-20

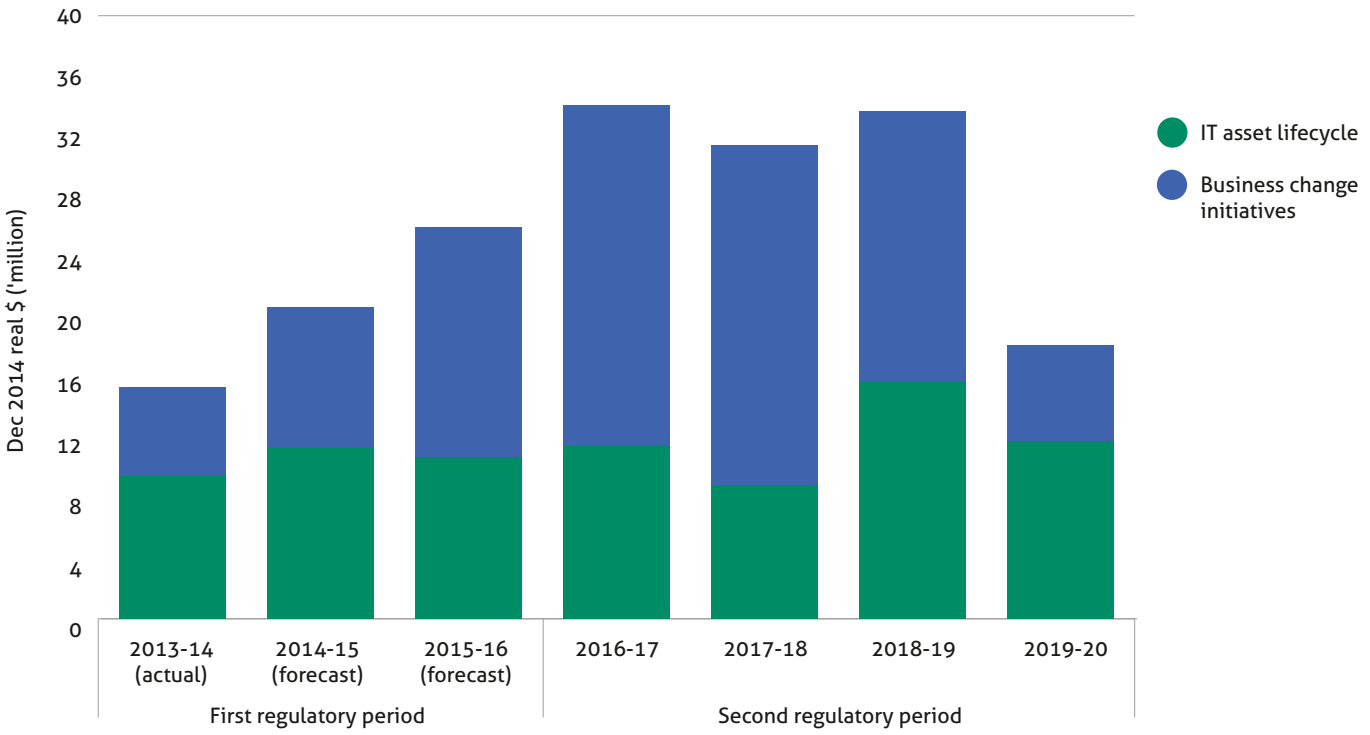


Table 13.4 Technology expenditure comparison of regulatory periods

Technology capital expenditure	First regulatory period (forecast)	Second regulatory period (proposed)
Number of years	3	4
Technology expenditure (Dec 2014 real $'million)	60.9	115.0
Average annual Business change program expenditure (Dec 2014 real $'million)	9.9	17.0
Average annual IT asset lifecycle program expenditure (Dec 2014 real $'million)	10.4	11.7

13.4.2 Technology investment benefits

Table 13.5 summarises the key technology investments and their expected benefits grouped by investment theme.

Table 13.5 Key benefits of proposed technology capital plan (Dec 2014 real $)

Improve customer experience	
Key investment	Benefits
Digital program ($10.2 million) *Enhance existing Digital Strategy program of work to meet the changing expectations of our customers. Continue to enhance operational efficiencies by implementing technology to streamline and automate processes by providing the opportunity for customers to 'self-serve'.*	• **Enhanced and optimised website** to enable customers to get the information and services they need, when they need it and in the right form. • **Expanded contact centre channel management and strategy** to enhance customer enquiry handling so enquiries can be received through more channels and routed to the right person, ensuring a consistent and responsive experience. • **Availability of online fault reporting** so customers can report faults online and to keep them updated about the fault through the channel of their choice. • **Enhanced customer self-service platform** to enable all customers to self-serve and access account information through a secure, responsive portal when and how it suits them. • **Expanded eBilling and online payment** to provide a consistently good payment experience and easier methods for customers to pay and manage their account. • **Improved customer relationship and information management** to ensure all customer records and key interactions are managed in one system to provide a personalised and segmented view of customers and provide the foundational building block to provide customer focused services.
Improve business efficiencies	
Key investment	Benefits
Field process re-engineering ($13.9 million) *Extend existing asset and works management program to deliver critical information and system access to staff working in the field.* *Use technology to enhance efficiencies in field processes and provide timely and accurate information to our customers through online channels implemented by the Digital Program.*	• **Enhanced field asset and works mobility platform** to enable workforce mobility and greater access to information and systems from the field. • **Improved digital fault communication** to proactively provide customers with timely and relevant information on service issues impacting them. • **Improved safety** to reduce the risk of workplace health and safety (WHS) incidents by providing hazard information and safe working procedures in the field, supported by proactive WHS monitoring of field crew activity through In-Vehicle Tracking and Lone Worker systems. • **Improved field service delivery efficiencies** through: – Automating and optimising planning and dispatch functions of field crews. – Greater access to customer facing data and information to deliver more efficient and effective services, for example improved Fault Management Services. – Improved accuracy and timeliness of asset data collected in the field by providing data recording tools and reducing paper based processes. • **Improved understanding and management of assets** to plan and deliver more cost-effective asset management and preventative maintenance services.

Technology is playing an increasing role in how we manage our operations and how we interact with our customers. We propose to invest $115 million in technology over the second regulatory period to deliver operational efficiencies and improve the customer experience.

Plan for the future	
Key investments	Benefits
SCADA systems review and renewal ($4.6 million) *Review our asset control system platform (SCADA) practices, systems performance, architecture and security controls to then implement appropriate changes to:* • *Ensure the SCADA systems are fit for purpose, cost effective and accessible given business criticality and future needs.* • *Implement security controls mandated by the SA Government.* • *Improve data quality through improved system reliability.*	**Future proof water and sewerage services** through enhanced: • SCADA platform to provide the right data to the right people at the right time. This will enable improved decision making to maintain service standards and provide reliable water and sewerage services to our customers. • SCADA remote monitoring and control capability to detect and resolve problems earlier to reduce frequency and extent of service outages impacting customers. **Minimise risks** relating to breakdown of SCADA or other critical operational control systems potentially affecting ability to deliver core services.
Information security program ($4.0 million) *Further reduce the risk of cyber security breaches and to ensure compliance with SA Government mandated information security requirements as per Information Security Management Framework (ISMF).*	**Compliance with SA Government requirements** as mandated in the ISMF. • **Minimise risks** relating to threats to security and cyber-attacks on information assets.

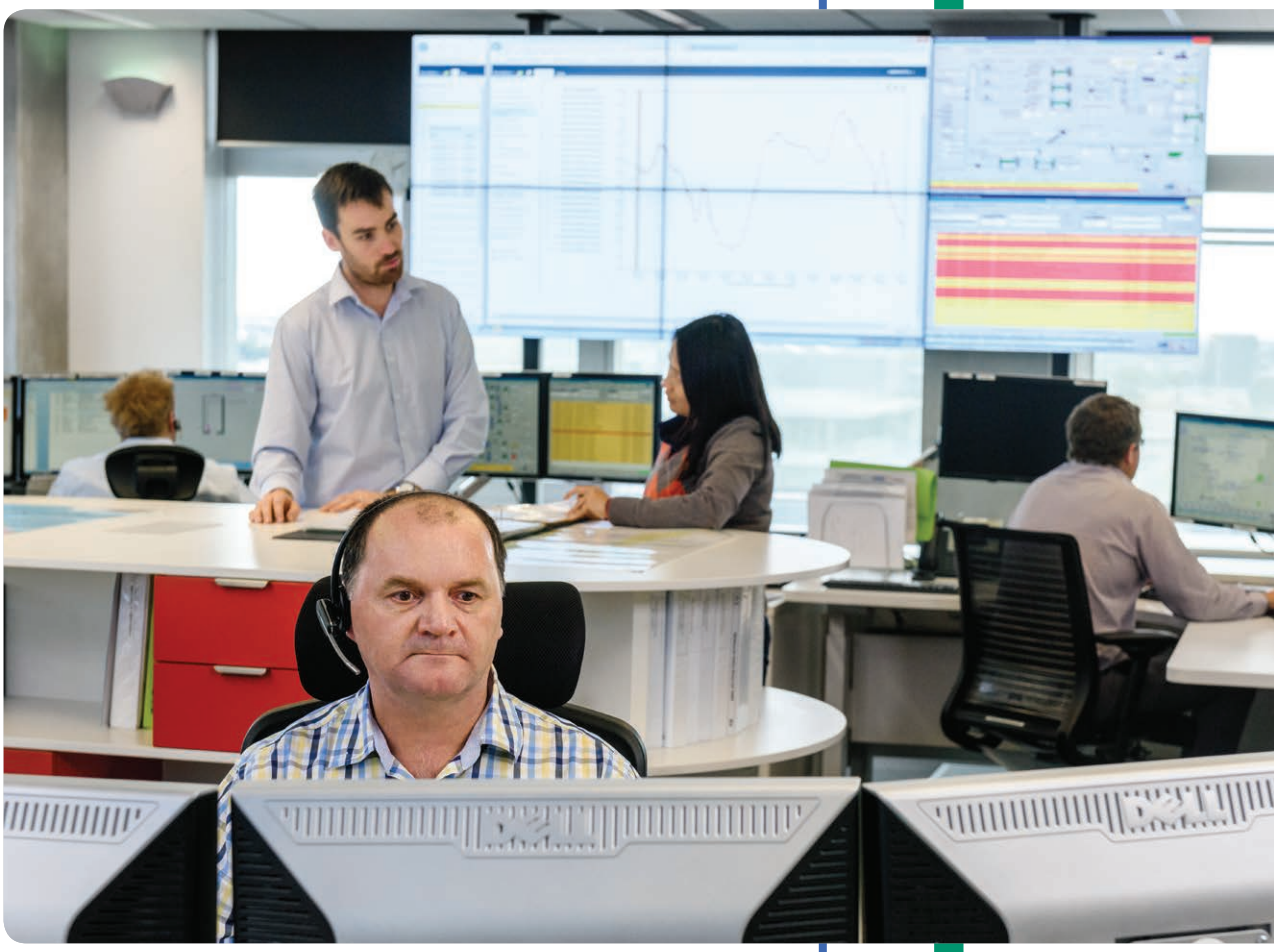
IT asset lifecycle program	
Key investment	Benefits
IT asset lifecycle renewal program ($47 million) *Modernise and upgrade core business applications and underlying technology infrastructure.* *Maintain an acceptable level of risk for the availability and security of technology assets.*	**Control and mitigate technology asset risks** relating to: • Increased operating support costs for products that are outside vendor support periods. • Critical business systems not being available or corruption of data within the systems from security risks of unsupported software/hardware (e.g. computer viruses and malicious software). • Prolonged system outages impacting business critical operations and our customers. • Non-compliance with mandated security controls of ISMF disaster recovery and system support requirements. • Replacement parts and hardware components not being available when the hardware is no longer within the vendor support period.

13.4.3 Independent review of technology capital plan

KPMG independently reviewed the governance processes we used to develop our proposal (attachment N). This review was similar to the review they conducted in the first regulatory period. KPMG supported the improvements to the governance processes for the second regulatory period because many reflected KPMG's observations for improvement in the previous review.

KPMG assessed the prudency and efficiency of our proposed technology capital plan for the second regulatory period. The assessment identified a business lead process for identifying and prioritising initiatives that resulted in a strong alignment to the business strategies, acceptance of costs savings by the business and prudent, risk based deferral of IT activity. KPMG noted our method followed good industry practices and demonstrated a prudent approach to forecasting IT expenditure.

KPMG benchmarked our 2012-13 technology operational expenditure against the KPMG Utilities ICT Benchmarking Survey. The benchmarking survey is based on 2012-13 data from 13 utilities across the Australian water, electricity and natural gas sectors. KPMG found our 2012-13 technology operational expenditure was comparable with the mean of the industry benchmarks.



13.5 Summary

Our capital technology plan will see us invest $115 million over the second regulatory period. We allocated this investment across our water and sewerage services and it forms part of the capital expenditure used to calculate the allowable revenues in chapters 7 and 11.

We also propose additional operating costs of $2.8 million per year by 2020 and expected operating saving of $11.4 million per year by 2020. Again, we allocated these forecasts across our water and sewerage services and included them as part of our operating expenditure proposals in chapters 6 and 10.

Chapter 14
Long term viability

KEY POINTS

A financially viable water and sewerage service provider is in the long term interests of our customers and the South Australian community.

Without clear requirements from ESCOSA on how to assess financial viability, we used quantitative financial viability indicators consistent with a minimum Baa2 (Moody's) or BBB (Standard and Poor's) credit rating. This approach is consistent with normal regulatory practice interstate and overseas.

The financial viability assessment indicates we will start the second regulatory period at the lower end of an investment grade credit rating, but will improve slightly each year over the period. This means we have limited ability to deal with any future shocks.

While our proposal mainly focuses on regulatory outcomes, this chapter looks at our financial (accounting) performance. Financial viability refers to our stand-alone capacity to finance our activities, including day-to-day operations and appropriate capital investments to replace, renew and expand infrastructure.

Our financial viability assessment shows that based on our proposals we will begin the second regulatory period at the lower end of the acceptable benchmark range of financial viability. This reflects our proposal to incorporate low forward interest rates into the regulatory rate of return so as to provide price decreases to customers early in 2016-17 rather than spreading them over the second regulatory period (further detail provided in chapter 4). This means our revenues are lower earlier in the second regulatory period than they otherwise would have been. Our financial viability recovers slightly over the second regulatory period as revenues grow by the rate of inflation.

14.1 Regulatory context

The objectives of the *Essential Services Commission Act* recognise having a viable water and sewerage service provider is in the long term interests of customers and the South Australian community.

In principle, the building block approach used to prepare our proposal allows us to recover costs and earn a reasonable rate of return on investments, so we can remain financially viable over the life of our assets. Financial viability issues can arise if the assumptions and timing applied in the building block model vary from our actual costs or actual circumstances.

The Essential Services Commission Act does not detail how financial viability is to be assessed for the water and sewerage industry. ESCOSA has not released guidance on this matter. The most common assessment approach used by regulators, governments and publicly listed companies is to use a suite of financial ratios similar to those used by credit rating agencies such as Moody's and Standard and Poor's. This approach involves comparing our forecast circumstances to benchmark ratios to determine our financial risk profile and therefore our risk of financial failure over the regulatory period. Table 14.1 summarises regulatory precedence in this area.

Table 14.1 Regulatory financial viability precedents

Entity	Publication	Details
IPART	Financeability tests in price regulation, December 2013[1]	Outlines the 3 financial ratios to be used in a financial viability test (all Moody's ratios except the internal financing ratio), how the tests will be applied during price reviews and how any financial viability issues can be resolved.
ESC	Assessing financial viability of Victorian water services, June 2014[2]	4 quantitative indicators to be used in a financial viability assessment (aligns with the Moody's model). Assessment to be undertaken before pricing decision is approved. Provides for a 'safety net' adjustment to prices if regulatory model doesn't ensure ongoing viability.
Ofwat	Final price control determination notice, December 2014[3]	Modelling of company final determinations and notional capital structures based on 5 financial ratios including interest coverage, funds from operations/debt and gearing. Does not follow the approach of any one rating agency.
Ofgem	Decision on strategy for the next transmission and gas distribution price controls, March 2011[4]	Broad financial viability assessment criteria. Based on notional capital structure. Approach does not align with any one rating agency.

Financial viability assessment against the benchmark ratios ensures the level of revenue forecast to be earned is enough to meet the medium to long term costs to supply customers. The assessment aims to balance the short term interests of customer prices with the longer term interests of ongoing cost to supply.

14.2 Assessment method

We assessed our future financial viability using:

- A suite of financial ratios and benchmarks consistent with those Moody's use. Moody's ratios and benchmarks have recently been used by other regulators and are more widely available than those used by Standard and Poor's
- An equivalent benchmark credit rating of Baa2 (Moody's). This approach is consistent with that of the efficient firm assumed by all regulators in rate of return determinations and of the benchmark established by most state governments for their publicly owned utilities. We are owned and guaranteed by the South Australian Government, but pay guarantee fees to government under National Competition Policy. So, our actual cost of debt is equivalent to a private sector Baa2 rated borrower
- Metrics at the midpoint of the Baa2 ranges, rather than the bottom end of the investment grade range (Baa3). Not all regulators use this approach, but it is more common practice for private sector businesses. Further, it is more appropriate for us because it ensures headroom to absorb external shocks and still maintain an investment grade credit rating.

We followed the practice of most regulators, which assess financial viability based purely on quantitative factors. While this approach excludes the qualitative factors that rating agencies apply in their formal ratings, it is simple, transparent and provides a similar outcome to one that incorporates qualitative factors.

Table 14.2 presents the financial viability indicators and acceptable benchmark ranges based on the method used by Moody's.[5] In determining an overall credit rating outcome, Moody's weights the ratios because it deems some to be more important than others. The full Moody's method allocates 40% to quantitative factors and 60% to qualitative factors. Because we undertook a purely quantitative analysis, we adjusted the weighting for each ratio so they total 100%.

1 IPART, *Financeability tests in price regulation, research – final decision*, December 2013.
2 ESC, *Assessing financial viability of Victorian water businesses*, June 2014.
3 Ofwat, *Final price control determination notice: policy chapter A8 – financeability and affordability,* December 2014.
4 Ofgem, *Decision on strategy for the next transmission and gas distribution price controls – financial issues*, March 2011.
5 Moody's Investor Service, *Global regulated water utilities: rating methodology,* December 2009.

Table 14.2 Financial viability indicators

Indicator	Calculation	Benchmark range (Moody's Baa2)	What it measures
FFO* interest coverage	(FFO + net interest)/net interest	2.5-4.5x	Cash flow buffer required for a business to meet debt obligations
Net debt/RAB (%)	(Interest bearing liabilities – cash)/RAB	55-70%	Debt component of the regulatory capital structure
FFO*/net debt (%)	FFO/(interest bearing liabilities – cash)	10-15%	Extent to which the serviceability of debt is improving, remaining stable, or declining
Internal financing ratio	(FFO – dividends)/ net capital expenditure	1.0-1.5x	Cash remaining to finance a prudent portion of capital expenditure after paying dividends

*FFO = funds from operations. It equals net operating income plus depreciation, amortisation, deferred income taxes and other non-cash items.

14.3 Financial viability assessment

Table 14.3 presents our assessment of financial viability for the second regulatory period. We will remain at the bottom end of the acceptable benchmark range over the second regulatory period. Our performance against the financial viability indicators will improve slightly over the regulatory period as we achieve further efficiencies.

Table 14.3 Financial viability assessment

Financial viability indicators	Weighting	Four year avg.*	Rating outcome	Benchmark range	2016-17	2017-18	2018-19	2019-20
FFO** interest coverage	37.5%	2.4x	Ba1	2.5-4.5x	2.3x	2.4x	2.4x	2.5x
Net debt/RAB (%)	37.5%	52%	A3	55-70%	52%	53%	53%	52%
FFO**/net debt (%)	12.5%	7.2%	Ba2	10-15%	6.9%	7.0%	7.2%	7.7%
Internal financing ratio	12.5%	0.8x	Ba1	1.0-1.5x	0.9x	0.8x	0.8x	1.0x
Weighted average	–	–	**Baa3**	**Baa2**	–	–	–	–

*The average over the regulatory period is used to smooth one-off fluctuations that may occur in any particular year.
**FFO = funds from operations. It equals net operating income plus depreciation, amortisation, deferred income taxes and other non-cash items.

The financial viability assessment includes our non-regulated activities because it is only practical to assess our entire business and is consistent with the approach which would be taken by ratings agencies. We based our financial viability assessment on the allowable revenue proposed plus our non-regulated revenue. Our non-regulated activities have a positive (but not significant) impact on our overall financial viability assessment.

We based our assessment on forecast costs calculated in accordance with Australian accounting standards. The standards' assumptions are largely consistent with the regulatory assumptions used to calculate costs in our proposal, except for:

- The reverse osmosis membrane replacement costs for the Adelaide Desalination Plant (ADP), which we classified as an operating expense (rather than capitalised), consistent with Australian accounting standards
- Income tax payments, which we estimated in accordance with Australian Taxation Office requirements
- Borrowing costs, which the South Australian Government Financing Authority calculated, based on the forward maturity profile of our debt portfolio and forward market interest rates.

The modelling presented here is based on forward financial market forecasts at the beginning of 2015, which assume continuing low market interest rates over the second regulatory period. Our financial viability assessment would deteriorate if these forecasts do not eventuate. If a significant change in the interest rates affects our financial viability we would seek to address this via a pass through event detailed in chapters 7 and 11.

14.4 Summary

Using quantitative financial viability indicators consistent with a minimum Baa2 (Moody's) or BBB (Standard and Poor's) credit rating, our financial viability assessment shows we will begin the second regulatory period near the lower end of the acceptable benchmark range of financial viability. This reflects our proposal to incorporate low forward interest rates into the regulatory rate of return so as to provide price decreases to customers early in 2016-17 rather than spreading them over the second regulatory period. Our financial viability recovers slightly over the second regulatory period as revenues grow by the rate of inflation.

Chapter 15
Next steps

Our proposal is the first step in the second determination process. This process is expected to be completed in May 2016 to enable water and sewerage prices to be set from 1 July 2016.

Table 15.1 summarises the key milestones and activities of the second determination process.

Table 15.1 Key milestones

Date	Activity
September 2015	ESCOSA commences a public consultation period on our proposal.
September 2015 – January 2016	ESCOSA reviews our proposal, relevant supporting material and any matters arising from public consultation process in order to develop draft recommendations.
February 2016	ESCOSA releases Draft Determination for a public consultation period.
May 2016	ESCOSA releases Final Determination.
1 July 2016	Requirements of Final Determination implemented. In conjunction with our owner we will set new water and sewerage prices with the allowable revenue requirements of the Final Determination.

Importantly, customers and other stakeholders will have the opportunity to be involved through public consultation on both our proposal and ESCOSA's Draft Determination. The process for this consultation will be confirmed by ESCOSA.

We welcome the consultation feedback and will support ESCOSA throughout the second determination process.

Glossary

TERM	DESCRIPTION
ABS	Australian Bureau of Statistics
ACTEW	Australian Capital Territory Water
ADP	Adelaide Desalination Plant
CLD	Customer number, length of pipe and demand
CPI	consumer price index
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	community service obligation
Customer Charter	SA Water's Customer Charter
EIP	environment improvement program
EPA	Environment Protection Authority
ERA	Economic Regulation Authority of Western Australia
ESC	Essential Services Commission of Victoria
ESCOSA	Essential Services Commission of South Australia
Essential Services Commission Act	Essential Services Commission Act 2002 (SA)
FFO	funds from operations
first determination	ESCOSA's determination of SA Water's water and sewerage revenues for 1 July 2013 to 30 June 2016
first regulatory period	Regulatory period from 1 July 2013 to 30 June 2016
Fourth Pricing Order	18 November 2014 Pricing Order for the second regulatory period
Framework and Approach	SA Water Price Determination 1 July 2016 – 30 June 2020 – Final Framework and Approach
GL	gigalitre
Initial Pricing Order	24 September 2012 Pricing Order for the first regulatory period
IPART	Independent Pricing and Regulation Tribunal of New South Wales
ISMF	Information Security Management Framework
IT	Information Technology
kL	kilolitre
km	kilometre
KPI	Key performance indicator
ML	megalitre
Moody's	Moody's credit rating agency
NPR	Bureau of Meteorology National Performance Report 2013-14: Urban Water Utilities
Ofgem	Office of Gas and Electricity Markets (UK)
Ofwat	Water Services Regulation Authority (UK)
ORBE	Opportunity Risk Based Estimation
Our proposal	SA Water's regulatory business proposal 2016

TERM	DESCRIPTION
Overview of Strategy 2016-2020	SA Water's overview of strategy for the second regulatory period
PM	Project Manager
Public Corporations Act	Public Corporations Act 1993 (SA)
RAB	regulatory asset base
Rate of Return Report	ESCOSA's SA Water Regulatory Rate of Return 2016-20: Report to the Treasurer
RBA	Reserve Bank of Australia
RBP 2013	SA Water's regulatory business proposal for required revenue for 1 July 2013 to 30 June 2016
RBP 2016	This regulatory business proposal for required revenue for 1 July 2016 to 30 June 2020
regulatory rate of return	weighted average cost of capital (WACC)
SA Water	South Australian Water Corporation
SCADA	Supervisory Control and Data Acquisition system – our asset management system
second determination	ESCOSA's determination of SA Water's water and sewerage revenues for 1 July 2016 to 30 June 2020 (yet to occur)
Second Pricing Order	17 May 2013 Pricing Order for the first regulatory period
second regulatory period	Regulatory period from 1 July 2016 to 30 June 2020
section 6 Ministerial Direction	Direction to the South Australian Water Corporation Pursuant to section 6 of the Public Corporations Act 1993 (SA) dated 25 June 2015
SLIB	Service level impact beneficiary
Technical capital plan	SA Water's proposed capital investment in infrastructure prior to delivery efficiency savings
Technology capital plan	SA Water's proposed investment in information technology
the Board	SA Water's Board of Directors
the Minister	The Minister for Water and the River Murray
the Treasurer	The Treasurer of South Australia
Third Pricing Order	2 September 2014 Pricing Order for the second regulatory period
WACC	weighted average cost of capital (regulatory rate of return)
Water Industry Act	Water Industry Act 2012 (SA)
WHS	Workplace health and safety
WTP	Water treatment plant
WWPS	Wastewater pumping station
WWTP	Wastewater treatment plant
Your Say	SA Water's customer engagement program

Table of attachments

ATTACHMENT	TITLE
A	Overview of Strategy 2016-20, SA Water
B	Your Say customer engagement reports , Deloitte
C	Service standards proposal, SA Water
D	Asset management policy, SA Water
E	Capital expenditure indexation review for the first regulatory period, PwC
F	NPR Cost Benchmarking Study, KPMG
G	Cost allocation method certification, KPMG
H	Supply optimisation review, MWH
I	Labour escalation, BIS Shrapnel
J	ADP operation assessment, Aurecon
K	Required Revenue data tables, SA Water
L	Technology capital planning approach – 2016-20, SA Water
M	Digital strategy: 2014-20, SA Water
N	Review of the RBP 2016 technology submission, KPMG

Government of South Australia

SA Water