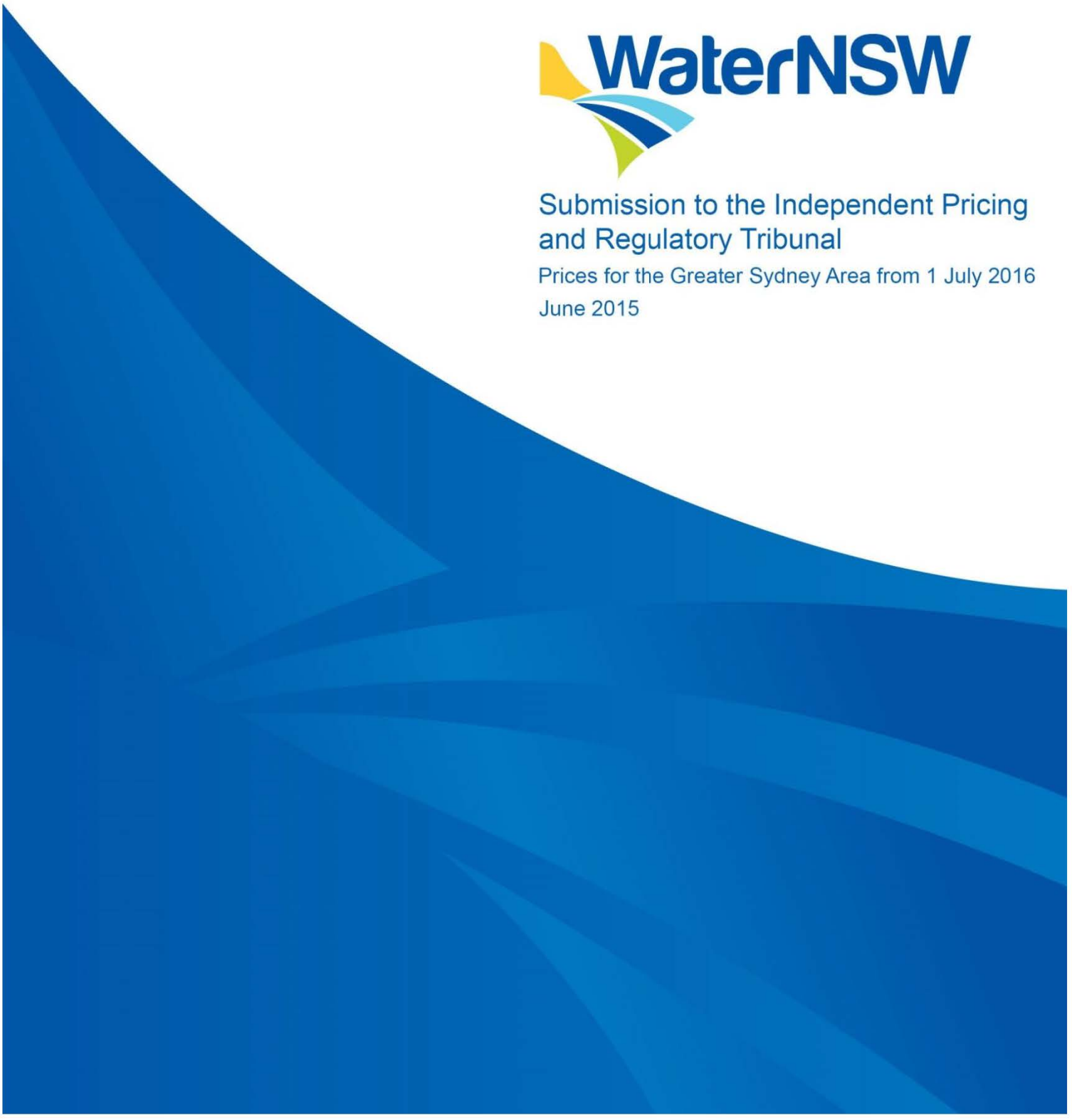


Submission to the Independent Pricing and Regulatory Tribunal

Prices for the Greater Sydney Area from 1 July 2016

June 2015

[This page intentionally blank]

Chief Executive Officer Foreword

I am pleased to submit WaterNSW's proposal on prices for our customers in the Greater Sydney area from 1 July 2016 to the Independent Pricing and Regulatory Tribunal. This is the first regulatory pricing proposal since WaterNSW's formation on 1 January 2015 and represents our continual commitment to be a modern, efficient and customer focused organisation.

For the next regulatory period, WaterNSW's proposal will see the cost of raw water to our customers reduce in real terms. In 2016-17 the real cost of raw water supply will be more than 7% lower than that in 2015-16, and despite WaterNSW planning to deliver a significantly larger Greater Sydney capital investment program over the next 4 years than the last 4 years, real prices in 2019-20 will still be around 3% lower compared to 2015-16. We are able to deliver these cost reductions to our customers by passing on lower operating costs from operating efficiency reforms driven by the new WaterNSW management team, and lower funding costs from the financial markets. We are confident our proposal represents the least cost solution in providing services to our customers.

Importantly, the lower prices we are proposing do not represent a reduction in service quality. WaterNSW remains committed to provide uninterrupted supply of the highest possible quality water to our customers. We will continue to promote improvements in achievable water quality standards and contribute to the protection of public health and the environment through enhanced catchment protection practices in Sydney's drinking water catchments.

Over the next 4 year regulatory period to 2019-20, WaterNSW is proposing to invest around $373 million in capital works to ensure our assets continue to provide reliable service and sufficient supply to meet Sydney's growing population. Our proposed capital program also includes projects to ensure water security to cater for growing consumption.

In preparing this proposal, we consulted openly with our customers and sought to communicate the rationale behind our proposal. I am confident IPART's price review and determination process will provide a robust outcome for WaterNSW's customers. WaterNSW looks forward to continue our engagement with all stakeholders throughout the determination process and beyond.

David Harris
Chief Executive Officer

Contents

Executive summary

This document contains WaterNSW's proposal to the Independent Pricing and Regulatory Tribunal (IPART) on prices to customers in the Greater Sydney area from 1 July 2016 to 30 June 2020.

WaterNSW was formed on 1 January 2015 under the Water NSW Act 2014, effecting a merger of the Sydney Catchment Authority and State Water Corporation and creating a centre of excellence for raw water supply and the development and delivery of raw water infrastructure solutions for all of NSW. WaterNSW is Australia's biggest water supplier and is the major supplier of raw water in NSW, delivering raw water from 42 large dams, pipelines and the State's rivers.

WaterNSW ensures that the water supplied is reliable and, where that water is to be used by end-use customers for drinking, that it is safe. It develops water infrastructure solutions to water security and reliability issues and then plans, develops, operates and maintains that infrastructure.

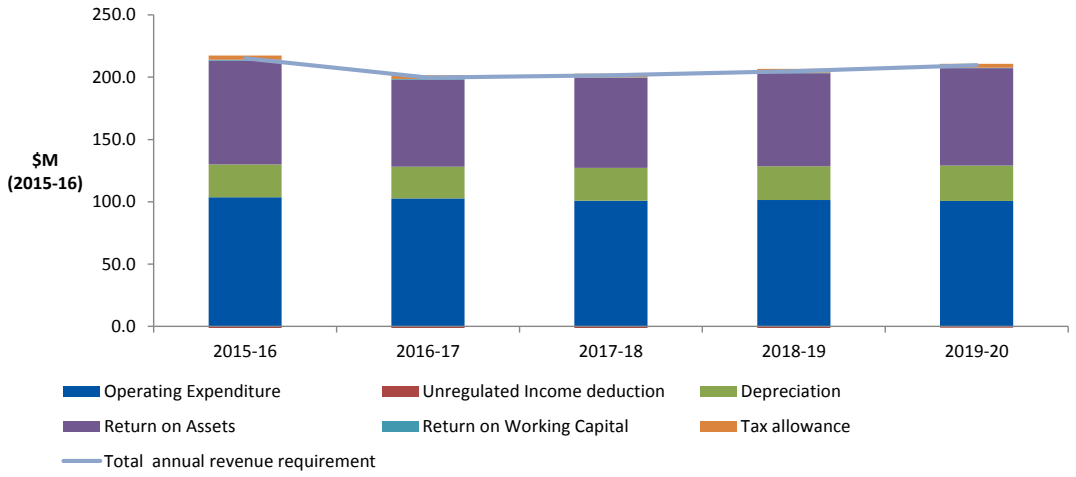
WaterNSW also promotes improvements in achievable water quality standards and contributes to the protection of public health and the environment through enhanced catchment protection practices in declared drinking water catchments.

In the Greater Sydney area, WaterNSW's role covers operations formerly managed by the SCA. Its role is to protect 16,000 square kilometres of drinking water catchments, and manage dams, pipelines and other infrastructure that are used to supply customers with quality raw water. WaterNSW supplies water to urban water utilities for treatment and then consumption by Sydney, Illawarra, Blue Mountains, Southern Highlands and Shoalhaven communities. Its customers include Sydney Water, Wingecarribee Shire Council, Shoalhaven City Council and Goulburn-Mulwaree Council. WaterNSW also provides water supply to some 60 other smaller customers.

Proposed revenue requirement

Over the upcoming determination period, WaterNSW is proposing a total revenue requirement of $815.8 million ($2015-16), or an average revenue requirement of around $204 million per annum. In real terms, the annual revenue requirement in 2019-20 is around 3% lower compared to that of 2015-16. The lower revenue requirement is driven by lower operating costs from operating efficiency reforms driven by the new WaterNSW management team, and lower expected funding costs from financial markets.

WaterNSW is committed to supplying raw water efficiently and at the lowest possible cost to customers. Operating efficiency gains will be made through rigorous review of all expenditure to ensure operations and expected levels of service are being provided at least cost. WaterNSW has proposed a capital expenditure program in line with best asset management practise and is prudent and efficient. The chart below shows the proposed revenue requirement based on the IPART building block approach.



Proposed operating expenditure

Over the upcoming determination, WaterNSW is proposing operating expenditure of $405.7 million ($2015-16) or around $100 million per annum. This proposal represents WaterNSW's commitment to contain and reduce operating expenditure throughout the next determination period. By 2019-20, WaterNSW's proposed operating expenditure will be 3% lower in real terms than the equivalent amount in 2015-16. A summary of WaterNSW's operating expenditure proposal is in the table below.

($ million, 2015-16)	2015-16	2016-17	2017-18	2018-19	2019-20
Core operating expenditure	98.6	97.5	95.8	96.3	95.5
Bulk water cost – Fish River	3.0	3.0	3.0	3.0	3.0
Shoalhaven pumping allowance	2.0	2.1	2.1	2.1	2.1
Total	**103.6**	**102.7**	**101.0**	**101.4**	**100.6**

For the next price determination period, WaterNSW proposes to retain the pumping allowance as part of the operating expenditure proposal. Based on current modelling, the expected cost of pumping from the Shoalhaven system is around $2.1 million per year. WaterNSW is able to provide an updated estimate when IPART is preparing its final determination.

Proposed capital expenditure

For the upcoming determination period, WaterNSW proposes to conduct around $373 million of capital works. The capital investment program in this pricing submission is developed according to the current project management framework and asset management framework and strategy. It is aimed at the construction and renewal of assets that are used to collect, store and deliver raw water to customers. Expenditure in the early part of the determination period is predominantly focused on works to ensure asset reliability and asset renewals. From 2019-20 onwards, the major component of capital expenditure is for the Shoalhaven Transfer project to secure Greater Sydney's next tranche of water supply. A breakdown of the proposed capital expenditure by service requirement is in the table below.

($ million, 2015-16)	2016-17	2017-18	2018-19	2019-20	Total
Renewals and reliability	48.8	73.2	48.6	36.6	207.2
Water security	3.8	8.5	17.4	104.9	134.6
Business efficiency	10.0	8.1	5.0	5.0	28.1
Other regulated	3.0	-	-	-	3.0
Total capital expenditure	**65.7**	**89.9**	**71.0**	**146.5**	**373.1**

Proposed prices

Sydney Water

WaterNSW's proposal will see bulk water costs to Sydney Water reduce in real terms over the determination period. By 2019-20, WaterNSW's revenue requirement from Sydney water will be 3% lower (in $2015-16) compared to 2015-16. For the upcoming determination, WaterNSW proposes to maintain the existing price structure where 80% of revenue from Sydney Water is collected through the fixed charge.

The table below shows WaterNSW's proposed prices to Sydney water for the upcoming determination period with SDP in shutdown mode.

$2015-16	2015-16	2016-17	2017-18	2018-19	2019-20
Fixed Charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Variable (volumetric) Charge ($/ML)	85.81	75.17	75.08	75.73	76.63
Revenue from Fixed Charge ($M/Yr)	170.05	158.68	160.13	162.87	166.69
Revenue from Variable Charge ($M/Yr)	44.85	39.67	40.03	40.72	41.67
Total Revenue ($M)	**214.90**	**198.35**	**200.16**	**203.59**	**208.36**

Council customers

For the upcoming determination, WaterNSW proposes to align Council customers' price structure with that of Sydney Water – a fixed/variable ratio of 80:20. The application of a high fixed charge reflects the cost base of WaterNSW's business and recognises the highly secure nature of water availability to Councils. The proposed higher fixed charge also takes into account the relative stability in water demand from the councils. The table below shows WaterNSW's proposed prices to its Council customers.

$ 2015-16	2015-16	2016-17	2017-18	2018-19	2019-20
Fixed Charge ($M/month)					
Wingecarribee Council	23,118	69,298	69,298	69,298	69.298
Shoalhaven City Council	600	1,559	1,559	1,559	1,559
Goulburn-Mulwaree Council	1,801	1,299	1,299	1,299	1,299
Variable charge ($/ML)					
Variable (volumetric) Charge ($/ML)	216.17	43.31	43.31	43.31	43.31
Total revenue from Councils ($M)	1.4	1.1	1.1	1.1	1.1

Small and unfiltered customers

In the 2012 determination, the former SCA proposed to align the price structure of small customers with the price structure of the retail network. This strategy ensures customers do not face a price shock if they connect to the distribution network and consistent with previous submissions that prices for small customers should not provide incentives for customers to connect or disconnect from alternative supply. This proposal was accepted by IPART. For the upcoming determination, WaterNSW proposes to maintain the same pricing methodology for raw and unfiltered customers.

Prices for small and unfiltered customers are in the table overleaf.

	2015-16	2016-17	2017-18	2018-19	2019-20
Unfiltered customers					
Fixed Charge for 20mm Meter ($)	104	104	104	104	104
Variable (volumetric) Charge (c/kL)	118	118	118	118	118
Revenue from Fixed Charge ($M/Yr)	0.05	0.05	0.05	0.05	0.05
Revenue from Variable Charge ($M/Yr)	0.24	0.24	0.24	0.24	0.24
Raw water customers					
Fixed Charge ($/month)	0	0	0	0	0
Variable (volumetric) Charge ($/ML)	680	680	680	680	680
Revenue from Fixed Charge ($M/Yr)	0	0	0	0	0
Revenue from Variable Charge ($M/Yr)	0.01	0.01	0.01	0.01	0.01
Total revenue from raw and unfiltered ($M)	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**

Customer impact

In developing prices, WaterNSW has been mindful of the impact on its immediate and end-use customers. For the upcoming price determination, prices to customers will be lower in real terms compared to the prices in the final year of the current determination. This real price decrease is achieved without compromising water quality. The tables below show the estimated price impact to customers.

Estimated price impact to Sydney Water's end use customer (with 20mm connection and consuming 200kL per year).

	2016-17	2017-18	2018-19	2019-20
Pass through to customers ($2015-16)	-9.65	-8.77	-6.98	-4.56

Estimated price impact to Council customers

	2016-17	2017-18	2018-19	2019-20
Revenue from Variable Charge	216,463	216,463	216,463	216,463
Revenue from Fixed Charge	865,872	865,872	865,872	865,872
Total revenue	**1,082,335**	**1,082,335**	**1,082,335**	**1,082,335**
Equivalent $/ML	216.55	216.55	216.55	216.55
% Change	-22%	0%	0%	0%

Proposed changes to regulatory framework

For the upcoming determination, WaterNSW is proposing to introduce two incentive based mechanisms, the Efficiency Benefit Sharing Scheme (EBSS) and Raw Water Quality Incentive Payment Scheme.

Efficiency Benefit Sharing Scheme

Under the current regulatory framework, a regulated utility is able to realise an efficiency benefit if it is able to deliver service standards at costs below that determined by the regulator. However, under this scheme, the incentive to realise the efficiencies reduces as the regulatory period progresses as the utility is required to surrender any efficiency gains to customers at the end of the regulatory period. The EBSS is a mechanism that provides an equal incentive to the regulated utility to implement efficiency savings in each year of the regulatory period as it allows the regulated utility to retain the gains for a defined period of time, regardless of the year in which they were made. This mechanism better aligns the consumers' interest with that of the regulated utility. It incentivises the utility to realise efficiency savings as they arise, not at a time of the utility's choosing. The scheme rewards the regulated utility for lower costs by allowing it to keep a portion of the savings. For a 4 year carry-over period, the utility is able to retain 25% of the realised gains.

For the upcoming determination, WaterNSW proposes to implement an operating expenditure only EBSS with the following features:

- Symmetrical. Rewards are gained for improvement in efficiency and penalties for regression.
- Exclude non controllable cost. Cost outside of WaterNSW's control are not included. WaterNSW proposes to exclude actuarial gains and losses and costs associated with routine and drought pumping
- Cap and Collar. WaterNSW proposes to limit gains and losses to 5% of Greater Sydney area's regulated operating expenditure for the next determination period. This ensures for the introductory period, gains and losses under this scheme is limited.
- Four-year carry over period. A four year period means that in each year, WaterNSW realises approximately 25% of the benefits of any efficiency gains, while customers receive 75% of the benefits. If the holding period of the benefit was less than the duration of the regulatory period then it would not be possible to deliver an equal incentive rate in each year.

Raw Water Quality Incentive Payment Scheme

The Raw Water Quality Incentive Payment (RWQIP) Scheme is a service performance incentive mechanism. Service performance incentive mechanisms generally provides a reward (and sometimes apply a penalty) based on achievement of or improvement to specified performance standards.

For the upcoming determination period, WaterNSW proposes to formally include the RWQIP Scheme that is within the current Raw Water Supply Agreement (RWSA) between WaterNSW and Sydney Water. The RWSA was agreed by both parties after the 2012 Determination was set and therefore could not be included in the implementation of the determination.

The incentive payment clause is a rewards only scheme. An annual payment of up to $1 million is available to WaterNSW if it is able to supply water that is better than the rolling 5-year average of specified water quality – turbidity, colour, alkalinity and exceptional operating condition. Based on past performance data, the annual incentive payment could range from $30,000 to $300,000.

1. Introduction

1.1. WaterNSW – an overview

WaterNSW is the single entity responsible for the management and supply of raw water across the whole of NSW. Created on 1 January 2015 under the Water NSW Act 2014, through the merger of Sydney Catchment Authority (SCA) and State Water Corporation, it is responsible for supplying high quality drinking water to the Greater Sydney, Blue Mountains and Illawarra area of operations and delivering raw water to towns and irrigators and other customers across NSW. WaterNSW operates major water storage infrastructure, provides water infrastructure solutions to customers and stakeholders and is responsible for the protection of declared drinking water catchments in its area of operations.

Mission

WaterNSW's defines its mission as follows:

WaterNSW provides service to its customers and to the people of NSW by:

- *managing, promoting and developing raw water infrastructure;*
- *promoting improvements in achievable water quality standards and supplying raw water to those standards;*
- *contributing to the protection of public health and the environment through enhanced catchment protection practices in declared catchments;*
- *developing the capability of its people; and*
- *at all times acting safely, operating efficiently and exercising sound commercial judgement*

Principal objectives

The enabling legislation *Water NSW Act 2014*, provides clear guidance on how WaterNSW is expected to conduct its business. The principal objectives of WaterNSW can be summarised as:

- Infrastructure Solutions: to provide for the planning, design, modelling and construction of bulk water infrastructure;
- Water Quality: to supply water in compliance with appropriate standards of quality;
- Catchment Protection: to protect public health, safety and the environment and provide for the management of designated catchment areas;
- Act Commercially: to maintain and operate the works of Water NSW efficiently in accordance with sound commercial principles; and
- Efficiency: to capture, store and release water in an efficient, effective and safe manner

1.2. Operations in the Greater Sydney area

In the Greater Sydney area, WaterNSW's role covers operations formerly managed by the SCA. It's role is to protect 16,000 square kilometres of drinking water catchments, and manage dams, pipelines and other infrastructure that are used to supply customers with quality raw water. WaterNSW is responsible for supplying water to urban water supply authorities for treatment and then consumption by Sydney, Illawarra, Blue Mountains, Southern Highlands and Shoalhaven communities. Its customers include Sydney Water, Wingecarribee Shire Council, Shoalhaven City Council and Goulburn-Mulwaree Council. WaterNSW also provides water supply to some 60 other smaller customers.

Water is collected from five catchments into 21 dams which collectively hold more than 2.6 million megalitres of water. Approximately 4.5 million people or about 60 percent of the NSW population use water supplied by WaterNSW in the Greater Sydney area of operations.

WaterNSW's operation in the Greater Sydney area ensures the catchment areas and infrastructure are managed to promote water quality; the protection of public health and public safety; and the protection of the environment. It must also ensure water supplied is of appropriate quality. Figure 1.1 shows WaterNSW's Greater Sydney area of operations.

Figure 1.1 WaterNSW Greater Sydney area of operations

1.3. Other regulatory requirements

WaterNSW's operations are governed by a number of regulatory requirements. The following sections provide a brief summary of the key requirements.

Operating Licence

WaterNSW's activities in the Greater Sydney area are currently performed under the Operating Licence granted to the former SCA in July 2012 for a period of five years. The key objectives under the Operating Licence require WaterNSW

- to provide, construct, operate, manage and maintain efficient and co-ordinated viable systems and services for supplying water
- to ensure that the systems and services meet the quality and performance standards specified in the Operating Licence in relation to water quality, service interruptions and other matters determined by the Governor, and
- to compile indicators of the direct impact of the its activities (including, but not limited to, the impact of energy used and waste generated) on the environment.

Catchment audit

The *WaterNSW Act 2014* requires an audit of the state of the health of the catchment is to be undertaken every three years. The catchment audits must assess the state of the catchment areas having regard to catchment health indicators. The indicators are supported by a technical report that describes how the indicators were selected and the methods used for the collection of data, and the agencies responsible for collecting those data

The findings of catchment audits, to the extent to which they relate to the activities of WaterNSW and water quality, are to be incorporated into its risk framework and programs and activities relating to catchment management. WaterNSW's progress in implementing the catchment audit findings are documented in its annual Catchment Activities Report required under its Operating Licence.

Memoranda of Understanding

WaterNSW is also required under the *WaterNSW Act 2014* to establish Memoranda of Understanding (MoU) with certain regulatory agencies including NSW Health and the Environment Protection Authority. The MoU's establish strategic and operational forums for the agencies to share information and liaise on matters of shared interest.

Supply arrangements

Section 25 of the *WaterNSW Act 2014* requires WaterNSW to enter into arrangements with Sydney Water Corporation regarding the supply of water. The Operating Licence places similar obligations on WaterNSW to enter into arrangements with its other customers although this is not a requirement of the Act.

The Raw Water Supply Agreement outlines the arrangements between WaterNSW and Sydney Water Corporation for the supply of water. WaterNSW also has agreements for the supply of water with Wingecarribee Shire Council and Shoalhaven City Council and Goulburn Mulwaree Council. WaterNSW has arrangements in place for the supply of water to a further 60 customers who draw water from its storages and infrastructure.

Metropolitan Water Plan

The Metropolitan Water Plan (MWP) outlines how the NSW Government plans to secure Sydney's drinking water supply for the longer term and during drought. The Plan details water supply availability from surface water supplies such as dams and also desalinated water. It also outlines the water efficiency strategies that are planned to reduce demand such as recycling and water conservation.

The current MWP (2010) sets out the operating rules for the Sydney Desalination Plant as well as WaterNSW's transfer of water from the Shoalhaven system to augment Sydney's water supply. It also identifies infrastructure works such as rehabilitation/replacement of the upper canal; environmental flow infrastructure for Warragamba Dam; and upgrades to the Shoalhaven transfer system.

The Government, through the Metropolitan Water Directorate, is currently preparing the next MWP. At the time of this submission, the next MWP has not been released and it is not likely to be released until late 2015 at the earliest. Should the next MWP's deviate significantly from this proposal, WaterNSW would seek to re-open the determination to ensure the revenue requirement is appropriately matched to the changed infrastructure requirement.

Other regulatory requirements

Water quality
The quality of water supplied by WaterNSW to its customers in the Greater Sydney area of operations is regulated through its Operating Licence, Raw Water Supply Agreements and through a Memorandum of Understanding with NSW Health. All water quality requirements in the Operating Licence are subject to the approval of NSW Health and all water quality reporting obligations on WaterNSW include reporting to NSW Health.

Dam safety
WaterNSW must manage its prescribed dams in compliance with NSW Dams Safety Committee requirements. Dam safety emergency plans are prepared for all dams prescribed by the NSW Dams Safety Committee.

Greater Metropolitan Water Sharing Plan
The Greater Metropolitan Water Sharing Plan outlines the extractions and releases WaterNSW is allowed to make from its infrastructure works in it Greater Sydney area of operations. The plan places obligations on WaterNSW for the release of water stored for drinking, for environmental flows and for the drinking water supply for North Richmond.

2. Performance over current determination period (2012-2015)

2.1. Operating highlights

The current price determination period commenced on 1 July 2012 and is the fifth pricing determination since WaterNSW's Greater Sydney area of operation (former SCA) has been subject to its own economic and operation regulation. The period has seen variability of climate with predominately warm dry weather with several high rainfall events. While the rainfall events boosted dam levels, the rapid inflows to storages led to Warragamba Dam spilling for the first time in 14 years in 2012. There were also a number of bushfire events during the period. Despite the impact of bushfires and high rainfall events presenting challenges to the maintenance of water quality, WaterNSW was able to provide an uninterrupted supply of high quality water to its customers.

During the period, WaterNSW has also delivered key infrastructure projects to help secure supply in the longer term and maintained its focus on targeted and effective asset management, catchment management and land-use planning.

This section provides a discussion on WaterNSW's achievements and performance against output measures during the current determination period. It will also compare revenue and sales against the determination.

2.2. Organisational achievements

Reliable water

WaterNSW has delivered on its core responsibilities of supplying quality water suitable for treatment. During the determination period, WaterNSW has met or exceeded water quality compliance targets and provided an uninterrupted supply to major customers. There were no unplanned outages and there was no interruption of supply to major customers Sydney Water and the Councils.

WaterNSW continued to play a major role in the long term supply planning by providing key scientific and water modelling data and analysis that contributes to the development of the next Metropolitan Water Pan (MWP). WaterNSW's long term supply model WATHNET was used extensively for this purpose and a more bespoke model, MetroNet, was also developed. The models were externally expert peer reviewed and were found to be robust, and the calculated yield approach used by WaterNSW considered best practice.

WaterNSW also supported the Hawkesbury-Nepean Valley Flood Management Review by providing hydrologic and hydraulic modelling input and reviewed existing flood information for the valley. This support was provided within existing resources.

Catchment management and protection

During the determination period, WaterNSW worked closely with key stakeholders to implement the Healthy Catchment Strategy. Some of the key achievements under the Strategy include:

- Priority Pollutants Program. Provided more than $800,000 in infrastructure grants to target high priority sewage and stormwater infrastructure improvements in the catchment
- Rural Landscape Program. Committed $1.4 million to assist landholders to treat erosion, protect riparian areas and manage grazing land to best practice. By 31 December 2014, 41 grants had been awarded.
- Focus on mining impact. Maintained a strong focus on the impacts of mining on the catchments and water supply infrastructure by ongoing active involvement in planning approval and subsidence management processes to identify and mitigate risks posed by mining as well as undertaking science and research to help determine long-term impacts of mining on water resources and related environments.

Expenditure within IPART determined allowances

WaterNSW has managed its operating expenditure such that it is within the allowance determined by IPART in the 2012 Determination. Over the current determination period, WaterNSW's operating expenditure is expected to be around $380 million ($ nominal), around $11 million (or 3%) below the expenditure target. This is achieved despite the increases resources required to manage bushfire and heavy rainfall events in 2012-13 and 2013-14 and ongoing assistance provided to the Hawkesbury-Nepean Flood Management Review Task Forcel.

WaterNSW's capital expenditure is expected to be $22 million (or 15%) below expenditure allowance. This is largely due to the provisions for Warragamba Dam Environmental Flows Works being put on hold pending the release of the next Metropolitan Water Plan.

Detail discussion in relation to WaterNSW's performance against expenditure allowances are in section 2.8 and 2.9.

Stakeholder relationships

As required under the Operating Licence, WaterNSW developed memorandum of understanding with NSW Health to manage water quality, research, reporting and understanding. A memorandum of understanding was also developed with the Environmental Protection Authority (EPA) to enable the organisations to jointly manage issues relating to potential pollution threats to water quality, land management, compliance and enforcement.

People

The safety of staff, contractors and invitees is the highest priority for WaterNSW. During the price determination period, the former SCA updated and implemented a comprehensive Work health and safety management system and implemented the Safety and Wellbeing Strategy and Action plan 2013-16. In recognition of the important leadership roles that front-line supervisors and managers play in the organisation, the 'Challenge of Leadership' program was delivered in 2013 to provide support and development opportunities to staff in those positions.

Environmental systems

WaterNSW has made substantial progress towards developing a fully implemented Environmental Management System (EMS). The EMS is on track for certification by 30 June 2016, well ahead of the 30 June 2017 Operating Licence requirement. It has also maintained 100 percent environmental release compliance with the requirements of the Combined Approvals under the Water Sharing Plan.

2.3. Implementation of the 2012 Determination

WaterNSW has implemented the 2012 determination in full since it came into effect on 1 July 2012. WaterNSW has implemented the annual charges in full (after adjusting for CPI changes). Updated price schedules were sent to IPART for checking prior to implementation. WaterNSW has not received any report or concerns from IPART regarding the implementation of the determination.

Carbon tax rebate

In the 2012 Determination, IPART provided an allowance to cover the cost of carbon tax that WaterNSW would have incurred during the course of its business. On 17 July 2014, the Federal Government abolished the Carbon Tax with retrospective effect from 1 July 2014. As a result, the carbon tax allowances for 2014-15 and 2015-16 are no longer required, leading to revenue over-recovery for the two final years of the determination.

WaterNSW sought and was granted approval by the NSW Treasurer to provide a rebate to its customers equal to the amount that was allowed for under the determination. The 2014-15 allowance has already been refunded to customers. The 2015-16 allowance is planned to be refunded through a rebate in the December quarter bill in 2015-16.

2.4. Performance against output measures

Summary performance

As per previous determinations, IPART continued the use of output measures to measure WaterNSW's progress against key aspects of the 2012 Determination. WaterNSW provided regular updates on its progress to IPART throughout the determination period. Table 2.1 provides a summary of WaterNSW's progress against the output measures.

Table 2.1 Performance against output measures

Output measures		Status
1.	Deliver a strategy for the future of the Upper Canal by June 2013	Completed
2.	Complete the Prospect Reservoir downstream filter trench upgrade by June 2014	Completed
3.	Complete the Wingecarribee Dam safety upgrade project by June 2013	Completed
4.	Complete the Metropolitan Dams electrical system upgrade project by June 2017	On track
5.	Upper Canal refurbishment – complete refurbishment works by June 2016	On track – Scope changed
6.	Warragamba Dam Environmental Flows – confirm a means of cost-effectively delivering the required environmental flows specified by the NSW Government in the 2014 Metropolitan Water Plan by June 2014, with construction to begin as directed by the Government.	Options assessment completed
7.	Warragamba Dam Pipeline Valves and Controls – establish and deliver a 5-year capital program to refurbish, modify and replace all existing valves and associated infrastructure (including controls) on the Warragamba pipeline by December 2012.	Completed
8.	Warragamba Dam Reliability Upgrade – complete upgrade works to the crest gates and their operating systems by 2016 to ensure they are code compliant, and investigations associated with the remainder of works to address reliability of Warragamba Dam by June 2013.	On hold – pending further information
9.	Shoalhaven Transfers Works – complete preparation and gain approval of a business case for the preferred option specified by the NSW Government in the 2014 Metropolitan Water Plan for the transfer of water from the Shoalhaven River to Sydney by June 2015.	On hold – pending further information

Upper Canal Strategy

The Upper Canal is an essential component of the water supply system for Sydney. It transfers water from the four Upper Nepean dams to the Prospect Water Filtration Plant. It also plays a vital role in water security should the supply from Warragamba Dam be unavailable. On a long term average basis it supplies approximately 20% of Sydney's water.

Constructed in the 1880s and now listed on the State Heritage Register, the Upper Canal consists of 65 kilometres of open canal, tunnels and aqueducts. Originally designed with a capacity of 680 ML/d, the capacity of the canal is currently limited to around 500 ML/d for a

range of reasons. The canal also faced risks associated with its structural condition, water quality and drainage, security and Workplace Health and Safety (WHS). Those risks were exacerbated by the changing nature of surrounding land uses.

The Upper Canal Strategy was therefore developed to address calculated yield and system redundancy issues in the long term and to address more urgent and immediate risks. On this basis, the strategy for the canal has been segregated into three timeframes:

- Short Term - immediate rehabilitation, over the current and next price determination period (to 2020);
- Medium Term (2020 to 2035) - responsive to changing risk profile; and
- Long Term (beyond 2035) - responsive to MWP. Solution may need to be in place by 2040 or potentially earlier.

Short term strategy

The short term strategy is to reduce as many of the high and medium risks in a relatively short time frame. A two stage rehabilitation program was developed to address the most immediate issues and help increase the reliability and stability of the canal and includes measures to increase automation. By 2020 the capacity will be restored to 680 ML/d for short durations during periods when redundancy is required. Stage 1 of this rehabilitation program ($9 million) is well underway and WaterNSW is finalising its business case for Stage 2 of the rehabilitation program ($75 million).

Medium term strategy

The strategy in the medium term (from 2020 until around 2035) is to adopt an adaptive monitor and response approach.

Long term strategy

The long term strategy for the existing canal involves replacement, at a capacity of at least 740 ML/d. A final decision does not need to be made at this stage, however any solution needs to be made as part of the metropolitan water planning process and may need to be in place by 2040, or potentially earlier.

The Upper Canal Strategy document was provided to IPART in June 2013.

Prospect Reservoir Upgrade

Prospect Dam is an earth fill dam that was originally constructed in the 1880s. It currently serves as an off line storage, providing important flexibility for the water supply system and essential back up supply capability to help ensure continuity of supply in the event of significant water quality problems or asset failure elsewhere in the system.

Over its lifetime, it has been the subject of a number of modifications and upgrades in response to events at the dam and changes in design standards over the years. The upgrade works completed under this project was to address the downstream piping risk of the dam to ensure the dam meets current dam safety requirements of the NSW Dam Safety Committee (DSC).

The construction stage of the project was awarded for $13.7 million, $8.2 million below the original estimate. Site works commenced in October 2013 and all works were completed in October 2014.

Wingecarribee Dam Safety Upgrade

Wingecarribee Dam is a rock and earth fill dam located in the Southern Highlands region. Built in 1974 as part of the Shoalhaven Scheme, it provides water supply to the nearby towns of Bowral and Mittagong and provides top up supplies to Sydney and the Illawarra during drought periods.

The Wingecarribee Dam safety upgrade addressed two dam safety risks: the potential of erosion of dam material during flood events and overtopping of the dam crest which could occur due to blockage of the spillway and radial gate by floating peat. The completed works ensured the Wingecarribee Dam meets NSW Dams Safety Committee Regulations.

The project was completed in December 2012, three months ahead of schedule. The project realised a saving of approximately $600,000 due to the project team working together with the contractor to achieve improvements in the design and construction methodology.

Metropolitan Dams electrical system upgrade

The majority of the electrical systems at the Metropolitan Dams (Avon, Cataract, Cordeaux, Nepean and Woronora) were installed when the dams were constructed. These systems are outdated and require upgrade. The project is designed to upgrade critical electrical infrastructure such as power distribution infrastructure, substations, switchboards, cabling and monitoring and control equipment.

The concept design and documentation stage of the project has been completed and the business case for the construction and implementation phase is being finalised. The construction phase of project is expected to be completed by 2017-18.

Upper Canal refurbishment

The original output measure was developed before the Upper Canal Strategy (see discussion above) was finalised and required WaterNSW to complete a limited set of refurbishment by 2016.

The scope of works for Upper Canal refurbishment was changed after the then SCA Board adopted the Upper Canal Strategy. The strategy saw the short term refurbishment program separated into two phases. Stage 1 of the program covers in-canal structural rehabilitation of urgent and high priority sites and is expected to be completed by the end of 2015-16. Stage 2 of the program involves more extensive rehabilitation work as well as automation of certain operations. The business case for phase 2 of the project is being finalised, with works expected to be completed by 2020.

Warragamba Dam environmental flows

WaterNSW provided hydrological as well as economic support to the NSW Government in evaluation a range of possible environmental flow regimes for Warragamba Dam. The option assessment was completed by 30 June 2014 and the options are being considered as part of the 2015 Metropolitan Water Plan (not yet released – under development).

Warragamba pipelines valves and controls upgrade

The Warragamba Pipelines consist of two parallel pipelines that deliver raw water by gravity from Warragamba Dam to Prospect Water Filtration Plant for treatment. The pipelines, completed over 50 years ago have had no major upgrades undertaken since their construction and the major valves are approaching the end of their design lives. As the pipeline provides the majority of Sydney's water needs, the upgrade is required to ensure the continuation of safe, reliable and efficient supply of water.

The upgrade will be conducted in phases over a period of around six years. The upgrade plan was submitted to IPART in December 2012. The business case for the construction and implementation phase of the project is being prepared. The upgrade is expected to be completed by 2021.

Warragamba Dam reliability upgrade

The capital expenditure relating to the Warragamba Reliability upgrade project is to carry out works to address dam safety issues identified by the Warragamba Dam Risk and Reliability Investigations.

The investigation works have been delayed due to a longer than expected investigation due to geological investigation of the Lapstone fault complex. Upgrade to dam infrastructure therefore cannot commence until the investigation work is completed, and is also dependent on the outcomes of the Hawkesbury Nepean Valley Flood Management Review. As a result, commencement of the upgrade has been delayed. The detailed design and documentation phase of crest gates will commence in 2015-16.

Shoalhaven Transfers Works

The 2010 Metropolitan Water Plan (MWP) identified the construction of a water transfer tunnel from Burrawang to Avon Dam as the next augmentation of Greater Sydney's water supply system. The development of the business case is currently on hold pending the finalisation of the next MWP, which is expected to be finalised in 2015-16. It is expected the next MWP will provide guidance on the timing and requirement of the next system augmentation. The guidance will enable WaterNSW to proceed with planning and preparation of the project.

2.5. Service standards

Operating Licence compliance

The Operating Licence sets out requirements to be met in relation to quality standards for raw water, catchment management and water supply. The current licence was renewed on 30 June 2012. During the current price determination period, IPART conducted two audits against the Operating Licence. For both 2012-13 and 2013-14, the then SCA achieved 100% full to high compliance to licence conditions that were selected for audit. Recommendations for improvements relating to the Water Quality Management System have either been addressed or are being addressed. WaterNSW's operating licence audit results for the past 5 years is shown graphically in Figure 2.1 below.

Water quality and quantity

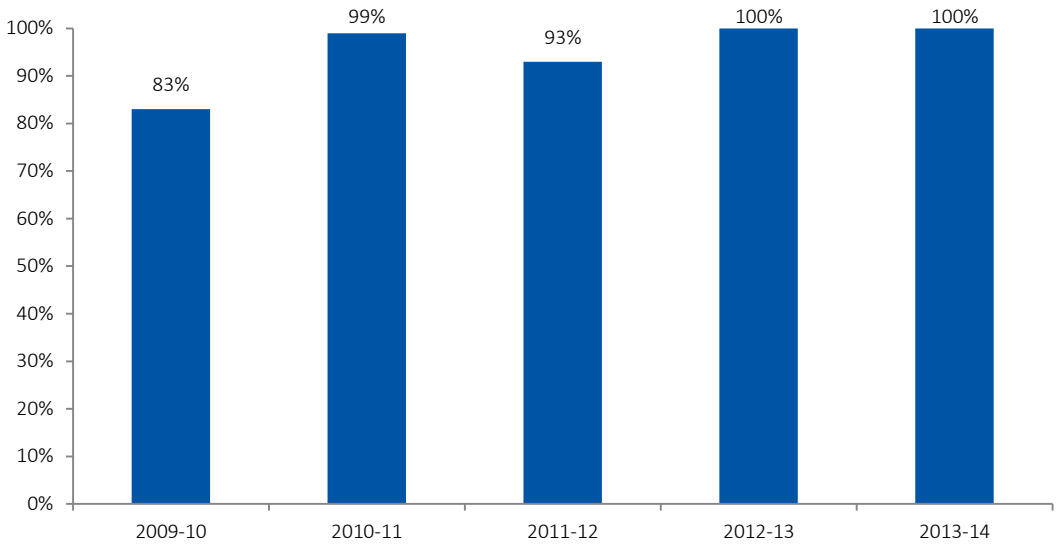
During the determination period, WaterNSW achieved greater than 99% compliance against the Raw Water Supply Agreement with Sydney Water. There was no supply interruption to our major customers during the period.

Dam safety

WaterNSW's Dam Safety Management Program complies with the NSW Dam Safety Committee's (DSC) requirements; Australian National Committee on Large Dams (ANCOLD) guidelines and with current international best practice. During the determination period, WaterNSW conducted performance monitoring of the 21 prescribed dams in the Greater Sydney area of operations and all dams were found to be performing satisfactorily. WaterNSW will continue to conduct Dam safety inspections, monitoring and maintenance activities in compliance with the Dam Safety Committee's requirements.

WaterNSW intends to undertake a portfolio risk assessment (PRA) of its Greater Sydney Dams that will enable consistent risk-based analysis of dam safety compliance, providing a robust business planning tool for investment benchmarking across its entire Dam portfolio. Warragamba Dam will be excluded from this study given the significant analysis already being undertaken by both the Warragamba Risk and Reliability Study and the Hawkesbury-Nepean Valley Flood Management Review. These studies will support a future PRA update for Warragamba and will help to inform the future direction of Sydney's strategic water supply considerations of the Metropolitan Water Plan.

Figure 2.1 Compliance to audited Operating Licence clauses



2.6. Water sales

Sydney Water accounts for 99% of water sales in WaterNSW's Greater Sydney area. The remaining water sales are attributed to Goulburn-Mulwaree Council, Shoalhaven Council, Wingecarribee Council as well as 60 small raw/unfiltered customers.

Table 2.2 shows the actual/forecast water sales compared to the forecast adopted for the current determination.

The higher sales is due to predominantly dry and warm conditions with the exception of heavy rainfall events experienced in Feb 2013, June 2013 and March 2014. March 2015 recorded the highest March demand since 2006.

2.7. Water sales and revenue variation

Table 2.2 shows the actual/forecast water sales compared to the forecast adopted in the 2012 Determination. Table 2.3 shows the variation in revenue as a result of higher than forecast water sales. Despite the increase in water sales, the variation in revenue is around 1.3%. The high fixed to variable revenue recovery ratio for Sydney Water has limited the upside revenue gain for this determination period.

Table 2.2 Actual/forecast water supplied to customers

(ML)	2012-13 (Actual	2013-14 (Actual)	2014-15 (Forecast)	2015-16 (Forecast)	Total
Forecast demand adopted for 2012 Determination					
Sydney Water	487,516	489,651	491,807	495,395	1,964,369
Council customers	3,900	3,950	4,000	4,050	15,900
Raw water customers	30	30	30	30	120
Unfiltered customers	220	220	220	220	880
Total forecast demand	**491,666**	**493,851**	**496,057**	**499,695**	**1,981,269**
Actual/forecast water sales					
Sydney Water	518,021	531,904	519,184	522,674	2,091,783
Council customers	3,924	4,531	4,567	4,998	18,020
Raw water customers	76	8	6	20	110
Unfiltered customers	104	164	116	200	584
Total water sales	**522,125**	**536,607**	**523,873**	**527,892**	**2,110,497**
Variation to Determination					
Sydney Water	30,505	42,253	27,377	27,279	127,414
Council customers	24	581	567	948	2,120
Raw water customers	46	-22	-24	-10	-10
Unfiltered customers	-116	-56	-104	-20	-296
Variation	**30,459**	**42,756**	**27,816**	**28,197**	**129,228**
Variation %	**6.2%**	**8.7%**	**5.6%**	**5.6%**	**6.5%**

Table 2.3 Revenue variation compared to the 2012 Determination

$ million	2012-13	2013-14	2014-15	2015-16	Total
2012 Determination					
Revenue requirement ($2015-16)	209.4	211.8	213.0	214.1	848.3
Carbon tax rebate			-2.2	-2.3	-4.5
Revenue requirement (adjusted for carbon tax rebate)	209.4	211.8	210.8	211.8	843.8
Actual/forecast revenue					
Revenue ($nominal)	198.3	205.2	209.0	214.3	826.8
Revenue ($2015-16)	212.0	215.5	213.2	214.3	854.9
Variation to Determination ($2015-16)	**2.6**	**3.7**	**2.4**	**2.5**	**11.1**
Variation %	**1.2%**	**1.7%**	**1.1%**	**1.2%**	**1.3%**

2.8. Operating expenditure

The 2012 Determination allowed a total operating expenditure of $407 million ($2015-16) over the determination period. Based on current forecast, WaterNSW is likely to underspend its operating expenditure target by around $10 million (-3%). The variance comparison is shown in Table 2.4 below.

Table 2.4 Operating expenditure against 2012 Determination

$ million	2012-13 (Actual)	2013-14 (Actual)	2014-15 (Forecast)	2015-16 (Forecast)	Total
2012 Determination					
Operating expenditure allowance ($2015-16)	100.6	101.8	102.1	102.2	406.7
Actual/forecast expenditure					
Operating expenditure ($nominal)	86.4	93.8*	98.6	103.6	382.4
Operating expenditure ($2015-16)	93.4	98.5	101.1	103.6	396.5
Variance to Determination ($2015-16)	**-7.2**	**-3.4**	**-1.0**	**1.4**	**-10.2**
Variance %	**-7%**	**-3%**	**-1%**	**1%**	**-3%**

* This amount excludes one off employee superannuation actuarial adjustment of $8.8 million. This amount was incurred as a result of the transfer of staff from the SCA Division to the Department of Trade and Investment as part of the Government Sector Employee Act (GSE Act) implementation.

Variance to Determination

The main reasons for the lower than expected expenditure over the determination period are as follows:

- Lower energy costs – Shoalhaven transfers. In the 2012 Determination, IPART provided a probability based allowance for Shoalhaven pumping cost. As dam levels remained at above 75% during the determination period, water transfers from the Shoalhaven system were not required. Expenditure is around $1.9 million below determination allowance.
- Lower energy costs – routine pumping. Apart from drought transfers, WaterNSW conducts routine transfers between its Greater Sydney reservoirs in order to balance storage levels. However, during the current determination period, high storage levels meant that routine transfers occurred less than originally budgeted, resulting in lower routine pumping cost of around $0.9 million over the determination period.
- Repeal of the Carbon Tax. Allowances for carbon tax incurred as part of day-to-day operation and Shoalhaven pumping was provided for the current determination period. Over the determination period, the carbon cost incurred by WaterNSW's Greater Sydney area of operations was around $5.6 million below determination forecast. As the Carbon Tax was repealed with effect from 1 July 2014, the carbon tax allowance for 2014-15 and 2015-16 are no longer required. As discussed in section 2.3, the allowance will be refunded to WaterNSW's customers.
- Bulk water purchases. Bulk water purchases from the Fish River Scheme were lower than initially forecast for 2012-13 as high storage levels negated the need for water purchases. Expenditure is around $0.4 million lower than determination forecast.
- Insurance premiums. Lower insurance premium were negotiated when the former SCA transferred its insurance cover to the Treasury Managed Fund. Expenditure is around $4 million below determination forecast.

The under expenditure was offset by higher than expected costs:

- Managing incidents. Additional costs (around $1.2 million) were incurred to manage incidents such as bush fires in and around catchment areas as well as heavy rainfall events that led to Warragamba Dam spilling.
- Warragamba Dam Risk and Reliability Investigation. Expenditure associated with the investigation will be around $1.5 million higher than expected due to longer than expected geological investigation of Lapstone Fault complex.

2.9. Capital expenditure – overview

The 2012 Determination allowed total capital expenditure amount of $149.9 million ($2015-16). Based on current forecasts, capital expenditure is expected to be $22.3 million (-14.9%) lower than the 2012 determination allowance. Table 2.5 below provides a year-on-year comparison of actual/forecast expenditure against the capital expenditure target in the 2012 Determination.

The lower capital expenditure is largely due to the deferral of Warragamba Environment Flows construction works. At the time of the SCA's price submission in 2011, it was expected that the decision on Warragamba Dam environmental flows would be decided as part of the 2014 MWP and construction would commence in 2015-16. As the next MWP is still being finalised, the capital provision for the project is therefore not forecast to be spent in this determination period. Excluding the provision for Warragamba Environmental Flows, capital expenditure compared to target is only $4.4 million (-3.4%) lower than the determination allowance. The variation comparison without Warragamba Dam Environmental Flows is shown in Table 2.6.

Table 2.5 Capital expenditure against 2012 Determination allowance

$ million	2012-13 (Actual)	2013-14 (Actual)	2014-15 (Forecast)	2015-16 (Forecast)	Total
2012 Determination					
Capital expenditure allowance ($2015-16)	35.2	37.5	36.3	40.9	149.9
Actual/forecast capital expenditure					
Capital expenditure ($nominal)	17.7	32.3	16.1	58.1	124.2
Capital expenditure ($2015-16)	19.1	33.9	16.5	58.1	127.7
Variance to Determination	**-16.2**	**-3.6**	**-19.8**	**17.3**	**-22.3**
Variance to Determination (%)					**-14.9%**

Table 2.6 Capital expenditure (excluding Warragamba Environmental Flows Works) against 2012 Determination allowance

$ million	2012-13 (Actual)	2013-14 (Actual)	2014-15 (Forecast)	2015-16 (Forecast)	Total
2012 Determination					
Capital expenditure allowance ($2015-16)	35.3	37.5	36.3	40.8	149.9
Less Warragamba E-flows ($2015-16)			-1.1	-16.6	-17.7
Adjusted allowance ($2015-16))	**35.3**	**37.5**	**35.2**	**24.2**	**132.2**
Actual/forecast expenditure					
Capital expenditure ($nominal)	17.7	32.3	16.1	58.1	124.2
Capital expenditure ($2015-16)	19.1	33.9	16.5	58.1	127.7
Variance to Determination ($2015-16)	**-16.2**	**-3.6**	**-18.7**	**33.9**	**-4.4**
Variance to Determination (%)					**-3.4%**

2.10. Significant capital projects delivered or commenced in the 2012 determination period

Upper Canal refurbishment

As discussed in section 2.4, the development and finalisation of the Upper Canal strategy represents a significant milestone in the maintenance of a heritage listed water supply asset. During the determination period, WaterNSW implemented Stage 1 of the refurbishment program and addressed many of the urgent and high risk areas identified by the strategy. Work included replacing canal walls, safety upgrades to access roadways, replacing fencing, penstock and platforms, drainage rehabilitation and other minor work. The project was ahead of schedule and WaterNSW is planning to bring forward some of the works originally identified for completion in Stage 2 of the rehabilitation program.

For more information about the Upper Canal strategy, refer to section 2.4.

Prospect Reservoir upgrade

The upgrade to Prospect Reservoir was completed during the period to bring the reservoir in line with contemporary dam safety standards by upgrading the filter and drainage system. Construction commenced in October 2013 and all works were completed in October 2014.

This project is one of the output measures for the determination. Refer to section 2.4 for more information.

Wingecarribee Reservoir upgrade

The upgrade to Wingecarribee Reservoir was completed in December 2012. The project upgraded the dam wall filter and drainage trench to bring it in line with contemporary design standards and replaced the existing peat fence with a two stage floating barrier system.

This project is one of the output measures for the determination. Refer to section 2.4 for more information.

Warragamba Pipeline Valves and Controls upgrade

This project involves a phased upgrade of valves and controls of the Warragamba Pipeline over a six year period. The upgrade plan was submitted to IPART in December 2012 and the business case for the construction and implementation phase of the project is being prepared. The upgrade is expected to be completed by 2021.

This project is one of the output measures for the determination. Refer to section 2.4 for more information.

Kangaroo Pipeline Tunnel Relining

The Kangaroo Pipeline is part of the Shoalhaven Scheme and links the Kangaroo Valley Pumping and Power Station to the Fitzroy Canal. The pipeline is made up of a tunnel, shaft and pipeline sections. The tunnel sections are fully steel lined concrete pressure conduit.

The relining project was to rectify defects, spot rust and increasing instances of blistering that was identified during inspections conducted in 2008 and 2010. The relining of the tunnel was required to ensure the then SCA meet the requirement in an agreement between the SCA and (then) Eraring Energy on asset availability.

The relining works were completed in late August 2013 and independently tested for compliance in early September 2014.

Burrawang Pumping Station and Metropolitan Dams electrical system upgrades

The electrical systems for the Burrawang Pumping Station and Metropolitans Dams are obsolete and outdated and pose a risk to water supply reliability and staff safety. Two separate projects have been scoped to conduct the upgrade. The detailed design and documentation phase of the projects have been completed. The Burrawang Pumping Station business case was approved in April 2015, with the Metropolitan Dams electrical upgrade business case for the construction phase still being finalised.

The upgrade to the Metropolitan Dams is expected to be completed in 2018-19. The upgrade to Burrawang Pumping Station is expected to be completed in 2017-18.

Data Centre Relocation

This project was conducted as part of the NSW Government Data Centre Reform Initiative. Under this initiative, the then SCA relocated its stand-alone data centres to the new purpose-built whole-of-government data centres. The new data centres provide lower recurrent costs, capacity to meet future growth, secure environment for computer systems and data storage and ability to access technology services through a standardised, competitively priced GDC services catalogue managed by the Department of Finance and Services on behalf of NSW Government.

Relocation of the main data centre was completed in May 2014. The secondary data centre was relocated in March 2015.

3. Customer profile and demand projections

3.1. Customer profile and trend

WaterNSW's customer base in its Greater Sydney area of operations consists of a combination of large wholesale and smaller retail customers. The characteristics of the customer base are shown in Box 3.1. Given the nature of its operation, WaterNSW is not expecting its customer base to change in the near future.

The breakdown of WaterNSW's Greater Sydney customer number projections is shown in Box 3.1.

Box 3.1 Customer characteristics

Customer type	Characteristics
Wholesale customers • Sydney Water • Wingecarribee Council • Shoalhaven Council • Goulburn-Mulwaree Council	• Draw raw water from designated bulk supply points • Raw water undergoes treatment before supply to end use customers in the customers' respective operating areas
Retail – raw water customers	• Positioned relatively high in the supply system. • Extract water directly from dams • Generally commercial users such as mines
Retail – unfiltered customers	• Positioned relatively low in the supply system, downstream from dams • Draw supply from various points along transmission lines (pipeline and Upper Canal) • Generally semi-rural residential users • The supply is unfiltered (treated) and is not suitable for human consumption without further treatment

Table 3.1 Customer projections

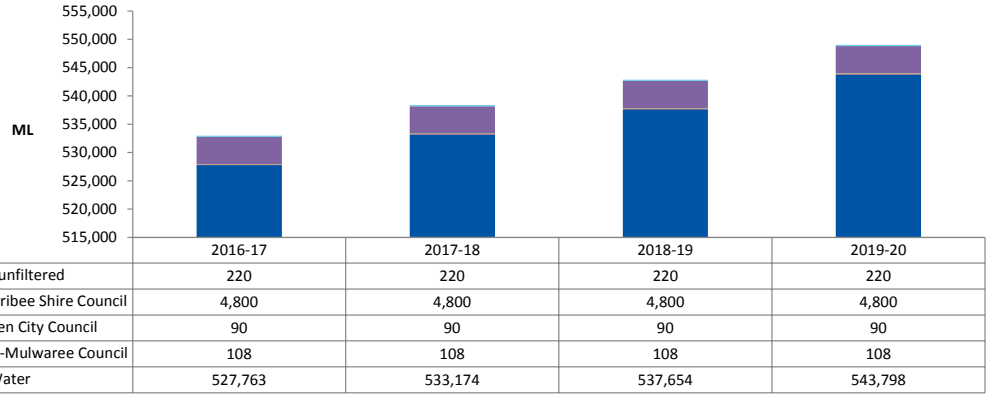
	2016-17	2017-18	2018-19	2019-20
Wholesale customers	4	4	4	4
Retail customers				
Raw water customers	8	8	8	8
Unfiltered water customers	53	53	53	53
Total customers	**65**	**65**	**65**	**65**

3.1. Demand forecasts

Overall demand projections

Figure 3.1 below shows the forecast demand for water for the next four years. Between 2016-17 and 2019-20, water demand is forecast to increase by around 3%, with the increase driven mostly by Sydney Water. Demand projections below are based on information supplied by WaterNSW's customers during consultation. Sydney Water's demand projection is discussed in further detail below.

Figure 3.1 Demand projections



	2016-17	2017-18	2018-19	2019-20
Raw and unfiltered	220	220	220	220
Wingecarribee Shire Council	4,800	4,800	4,800	4,800
Shoalhaven City Council	90	90	90	90
Goulburn-Mulwaree Council	108	108	108	108
Sydney Water	527,763	533,174	537,654	543,798

Sydney Water demand forecast

WaterNSW does not conduct its own end user water demand forecast for Sydney Water's end use customers. This function is conducted by Sydney Water as it has the usage and billing data. Sydney Water regularly provides demand forecast updates to WaterNSW for both operational planning and financial modelling purposes. The demand forecast used in this submission is the latest update provided by Sydney Water in June 2015 and incorporates the latest population projections for Sydney. The projections forecast Sydney's population to reach 5.85 million people by 2026, some 10 years earlier than the previous forecast. The demand forecast includes three scenarios: business-as-usual (BAU), high and low. The growth in population meant that water demand has increased significantly compared to the forecast conducted in September 2013. Table 3.2 below shows the change in water demand

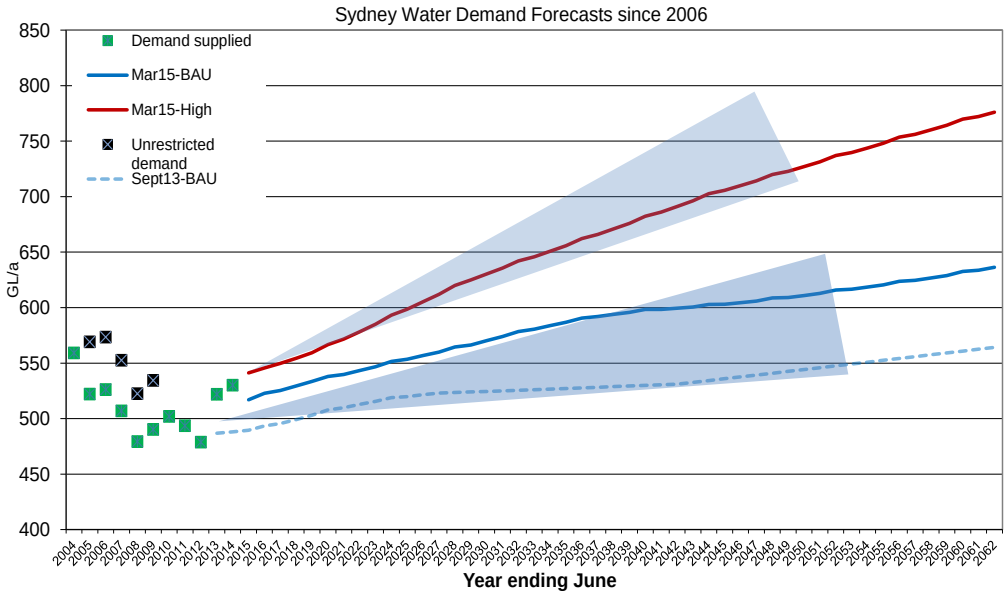
compared to the September 2013 forecast. It is important to note that the new demand forecast includes changes in historic usage.

Table 3.2 Forecast water demand increase

Demand scenarios	5 year horizon (2018) GL/year	15 year horizon (2028) GL/year	50 year horizon (2063) GL/year
Business-as-usual (BAU)	25	56	133
High	50	130	323
Low	-15	-39	-30

It is also important to note that historical demand forecast had significant variability, with growth trend tending to mirror the high demand scenario. Figure 3.2 shows the variability and trend on water demand.

Figure 3.2 Variability in demand forecasts



The increase in water demand forecast and the tendancy for demand projections to trend towards the high demand scenario has a major influence on the infrastructure investment for WaterNSW. This impact will be discussed further in section 4.

4. How this proposal is prepared

4.1. Basis of proposal

Service standards

WaterNSW's proposal for the upcoming determination period is developed to ensure it continues to meet the service standards for reliability of supply and water quality set down in the Operating Licence and individual water supply agreements with major customers. This proposal will also ensure WaterNSW continues to meet its environmental obligations as set in the Water Sharing Plan and standards set by technical regulators such as the NSW Dam Safety Committee.

WaterNSW's Strategic Action Plan

This proposal also contains activities that align to WaterNSW's Strategic Action Plan. The actions and milestones specified in the Strategic Action Plan are discussed in more detail in the section below.

4.2. Road map for future operation – WaterNSW's strategic direction

Strategic objectives

Over the next determination period, WaterNSW will continue its focus on transformation and continuous improvement to realise its vision to deliver greater value to customers through innovation and by continually challenging itself to do things better and more efficiently. WaterNSW has developed the following strategic objectives to help realise this vision:

- Safety excellence. To improve our safety performance for employees, contractors and the public
- Business transformation. To reform the business' organisation structure, culture and its processes in core functional areas to enable it to achieve its other strategic objectives
- Customer value creation and responsiveness. To improve customer value
- Growing the capabilities of our people. To enable performance through our people
- Capability to develop and evaluate infrastructure solutions. To pro-actively scope, develop and propose infrastructure solutions that address identified deficiencies in the quantity and reliability of metropolitan and rural raw water supply
- Asset health and capability management. To improve the efficiency of our asset management processes and activities and our asset development projects performance

- Water quality research and expertise. To improve our understanding of water quality causes and effects so that we continue to deliver high quality water to customers
- Better business systems. To improve the efficiency of our processes through the use of technology and to provide information to our customers that assists them in improving their business and being more profitable
- Knowledge management. To systematically capture all of the company's mission critical and mission important know-how, methods and outcomes (knowledge) and have that knowledge readily accessible to all employees and in a form that is usable across multiple functional areas.

4.3. Strategic Action Plan

Each of the above strategic objectives will be delivered through initiatives in the Strategic Action Plan. The Strategic Action Plan is a comprehensive document containing corporate goals that WaterNSW is seeking achieve in the next three years, with actions and measures to track whether the corporate goals have been achieved. In order to ensure progress in delivering the corporate goals, detailed deliverables and milestones are listed with specific Business Units allocated responsibilities in delivering the outcomes.

The sections below provide a brief overview on each of the Strategic Action Plan objectives and the actions WaterNSW is taking to achieve them.

Safety excellence

Safety is a high priority and WaterNSW will ensure the concept of 'safety excellence' is embedded in its workplace culture. A key goal under this objective is to have a safe work place and safe transit for our staff, contractors and the public. WaterNSW aims to have zero employee and contractor LTIs annually and zero MTIs for the public annually. To achieve this goal, WaterNSW will develop and maintain a certified Work Health & Safety (WHS) & Environmental Management System (EMS) and implement the 'Safety First Initiative' in accordance with the timetable agreed with the WaterNSW Board. A series of training sessions will also be undertaken to ensure all staff understand their safety related obligations.

Business transformation

As an organisation created from a merger of two existing businesses, WaterNSW is cognisant of the need to integrate its organisation structure, culture and processes to deliver greater efficiency and service quality. Under this objective, WaterNSW will embark on a series of programs to integrate and transform the way core functions are performed.

WaterNSW will ensure it has an organisation structure that is aligned to delivering on the organisation's strategic objectives and meets good organization design principles. It will also negotiate a unified industrial employment regime that provides terms and conditions of employment for staff covered by the enterprise agreement that are efficient, cost effective and best enable the carrying on of WaterNSW's business.

To ensure efficiency gains are enduring, WaterNSW will re-engineer business processes to achieve a step-change in business efficiency. This will also be supported by utilising modern technology where possible to deliver outcomes and adopting efficient and effective management systems in key areas to improve organisational performance.

A process improvement methodology will be implemented to ensure continuous improvement thinking is the universal approach to problem solving in WaterNSW.

Customer value creation and responsiveness

WaterNSW believes that delivering value to its customers is central to its success as a business. To this end, WaterNSW will ensure it has products that meet its customer needs through active engagement with all stakeholders. WaterNSW will also aim to ensure that its pricing submission reflects the outcome from the stakeholder engagement process and pricing determination outcomes reflects it submission as much as possible.

Growing the capabilities of our people

A capable and engaged workforce is key to the delivery of WaterNSW's strategic objectives. To ensure the right skill sets are available at the right time, WaterNSW will develop a workforce planning strategy to ensure it has a three year forward view of the skills (level and quantity) that are needed in the workforce and contractors and is taking action to be positioned in that timeframe. A Leadership Capability Framework will also be established to support capability development so that its leaders are capable of leading and empowering their people and teams to achieve WaterNSW's mission and retain and attract the talent it needs.

Capability to develop and evaluate infrastructure solutions

One of WaterNSW's principal objectives is to provide for the planning, design, modelling and construction of bulk water infrastructure. Increasingly, WaterNSW will also be asked to evaluate infrastructure ideas and solutions. In the upcoming determination period, WaterNSW will grow its capability to identify, model and prioritise water infrastructure solutions that address identified water quality and reliability deficiencies. This goal will be achieved when each water supply system/valley has a prioritised 20 year water infrastructure strategy and plan of infrastructure solution options that address current and future water security and infrastructure gaps, and with reference to our customers' desired 'Levels of Service'.

WaterNSW will also review its commercial analysis approaches to ensure all its infrastructure solutions are underpinned by robust commercial analysis.

Asset health and capability

As an infrastructure business, WaterNSW needs to ensure its portfolio of assets has the right capability to deliver on customer needs and regulatory requirements, and that asset capability is maintained. To this end, WaterNSW will adopt a reliability centred maintenance approach to asset management. WaterNSW will have systems in place to ensure quality asset condition data for all its assets are available. An asset reliability and maintenance

strategy will be implemented and where the health of water infrastructure assets are below the required standard, a remediation plan will be put in place to rectify the issues.

In relation to capital expenditure, WaterNSW will ensure its asset planning and regulatory pricing submission processes are integrated and transparent and a robust project governance and procurement framework is implemented to ensure capital expenditure plans approved as part of the price review process is delivered.

Water quality research and expertise

WaterNSW will continue to ensure no events in the Sydney Drinking Water Catchment that result in a risk to public health in the water supplied for treatment; zero 'emergency' water quality events. WaterNSW will also ensure it maintains leading edge knowledge on the causes and effects of water quality risks. To achieve this, WaterNSW will implement the revised Healthy Catchment Strategy to reduce risks to water quality and implement the revised Science Strategic Plan to ensure catchment actions have sound scientific backing.

As mining activities have the potential to adversely affect water quality, WaterNSW will review its current mining principles to ensure they remain in line with current scientific knowledge and develop and implement a Coal Seam Gas Advocacy Strategy to manage current CSG activity.

A water quality event forecasting system will also be developed to ensure every water quality event is forecast in time for the full implementation of a planned response.

Better business systems

Effective and efficient business systems will provide a key enabler for WaterNSW to deliver more efficient services. Over the next determination period, WaterNSW will ensure its business systems are fit for purpose by developing and implementing an Enterprise Architecture. The Enterprise Architecture will identify all systems and processes and create a baseline inventory of systems and processes. Once all systems and processes have been evaluated for their fitness of purpose against user and customer needs, a remediation plan will be produced to implement any required actions.

WaterNSW will also develop a Framework for internal reporting and dashboards and implement a project to achieve security certification (ISO27001) to ensure both internal and external stakeholders have access to reliable, accurate, secure and electronically accessible information.

Knowledge management

WaterNSW will develop and progressively implement an Information Management Framework to ensure business critical knowledge is readily available whenever required. This will entail the adoption of a standardised methodology of and storing information and selection of a technological platform that captures Water NSW's mission critical and mission important knowledge and makes that knowledge readily accessible by all employees.

4.4. Price submission in times of uncertainty

The next Metropolitan Water Plan and Hawkesbury-Nepean Valley Flood Management Review

Originally, the next Metropolitan Water Plan (MWP) was intended to be finalised in 2014. However, delays mean that the next MWP's is not likely to be released until late 2015 at the earliest.

The conclusion of the current price determination period in 2015-16 requires WaterNSW to proceed with price submission preparation (and therefore capital investment planning) now despite the uncertainty surrounding the next MWP and the Hawkesbury-Nepean Valley Flood Management Review (HNVFMR). WaterNSW's proposal for the upcoming price determination is therefore based currently available information – MWP 2010 modified with updated information on water demand forecast.

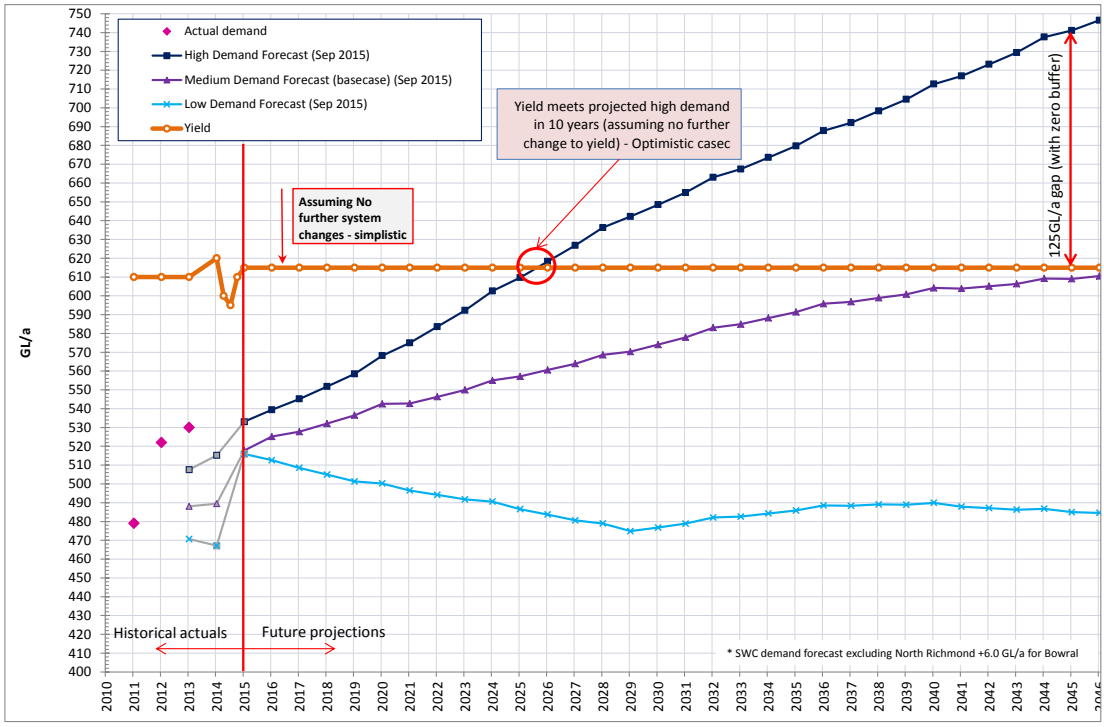
Should the next MWP and the potential Government response to the HNVFMR require substantial change to the proposed capital and operating plan, WaterNSW would seek to re-open the determination to ensure revenue requirement is appropriately matched to the changed infrastructure requirement

Interaction between change in water demand forecast and water supply system yield

Long term water supply yield is a calculated figure (in GL/year) that represents the maximum amount of water that can be supplied annually on a sustainable basis, taking into account the constraints of the water supply system design criteria. The calculation considers not just surface water but all sources of available water, including groundwater and desalinated water. Over the long term, the water supply system has sufficient capacity to meet service level requirements if water demand (also in GL/year) is at or below calculated system yield. The Greater Sydney water supply system calculated yield is 615 GL/year and current water demand is at 515 GL/year.

While current system yield in 100 GL/year above demand, the projected growth in water demand is likely to result in demand exceeding yield in the next ten years. and additional sources of water will be required. The interaction between demand and system yield is show graphically in Figure 4.1.

Figure 4.1 Interaction between demand and system yield



Proposal to ensure long term security of supply

Given the uncertainty discussed above, the capital investment plan contained in this price submission involves bringing forward the capital expenditure on the Shoalhaven Transfer Works to 2016-17 and the deferral of the commencement of Warragamba Environmental Flows construction to 2021. This proposal will ensure that sufficient capital works that add to system calculated yield have commenced prior to commencement of environmental flows and to meet the projected increase in demand.

Licence fee from NSW Office of Water

Another aspect of uncertainty in relation to the preparation of this submission is the forecast licence fee WaterNSW is required to pay the NSW Office of Water (NOW). This uncertainty arises from the different submission timeframe of the respective organisation's price proposal to IPART. WaterNSW's proposal is submitted to IPART in June 2015 while NOW's proposal is not due to IPART until September 2015.

While WaterNSW and NOW have had discussions on the likely licence fees for the upcoming determination period, the timing of NOW's submission preparation is such that it cannot provide a definitive amount for WaterNSW to include in this price submission. As a result, WaterNSW has included the best available estimate of NOW licence fees in its operating expenditure proposal. WaterNSW therefore requests IPART to apply the licence fee determined in NOW's price determination (instead of WaterNSW's estimates) when determining WaterNSW's efficient operating expenditure.

4.5. Consultation

Sydney Water

WaterNSW's revenue is a significant input cost to Sydney Water's prices. The growth in end user demand and increase in Sydney Water's customer base also have an impact on WaterNSW's supply planning. Throughout the development of this proposal, WaterNSW and Sydney Water worked closely with each other to ensure proposed expenditure and investment programs ensure the delivery of the same service standards and that sufficient investments are planned to cater for expected growth in water demand. Regular bi-monthly meetings were held to update both parties on planning parameters, discuss financial market outlook and to ensure all elements of WaterNSW's regulatory proposals are acceptable to Sydney Water.

Council customers

WaterNSW has in place supply agreements with Wingecarribee Council, Goulburn-Mulwaree Council and Shoalhaven Council. As part of the agreement, regular meetings were held to discuss a wide range of issues relating to water supply. In preparing this proposal, WaterNSW also consulted with Council customers on the overall proposal as well as changes that specifically affect them.

Local Government Reference Panel

The Local Government Reference Panel (LGRP) is a means for WaterNSW to consult with local councils that are in the Greater Sydney operational area. The LGRP provides a forum for WaterNSW to consult on catchment and water quality issues and allow local stakeholders to become involved in matters relating to WaterNSW's operations.

IPART

WaterNSW adopted a 'no surprises' approach with IPART throughout the current determination period. Regular quarterly CEO level meetings were held to provide IPART with updates on WaterNSW (and the former SCA) progress against the current determination. Throughout the preparation period, regularly discussions were held between WaterNSW and IPART officers to discuss significant issues that may impact on the pricing outcome for the next determination period (e.g. the next Metropolitan Water Plan). WaterNSW also kept IPART abreast of proposals contained in this submission.

5. Proposed revenue requirement

5.1. Length of the determination period

For the upcoming determination, WaterNSW is proposing a regulatory period of four years, from 2016-17 to 2019-20. WaterNSW believes a four year determination period is the right balance between providing a stable and certain operating environment while allowing sufficient flexibility to respond to changes in the water industry.

For the 2012 Determination, IPART aligned the determination period of the then SCA with Sydney Water. WaterNSW proposes to continue with this approach and recommends the upcoming determination period to be aligned with that of Sydney Water to minimise regulatory uncertainty for both parties.

5.2. Revenue requirement

Over the upcoming determination period, WaterNSW is proposing a total revenue requirement of $815.8 million ($2015-16), or an average revenue requirement of around $204 million. In real terms, the annual revenue requirement in 2016-17 will be around 7% lower than 2015-16. By 2019-20, WaterNSW's revenue requirement will still be around 3% lower compared to that of 2015-16. The lower revenue requirement reflects WaterNSW's commitment to deliver operating expenditure whilst also passing on a lower estimated rate of return.

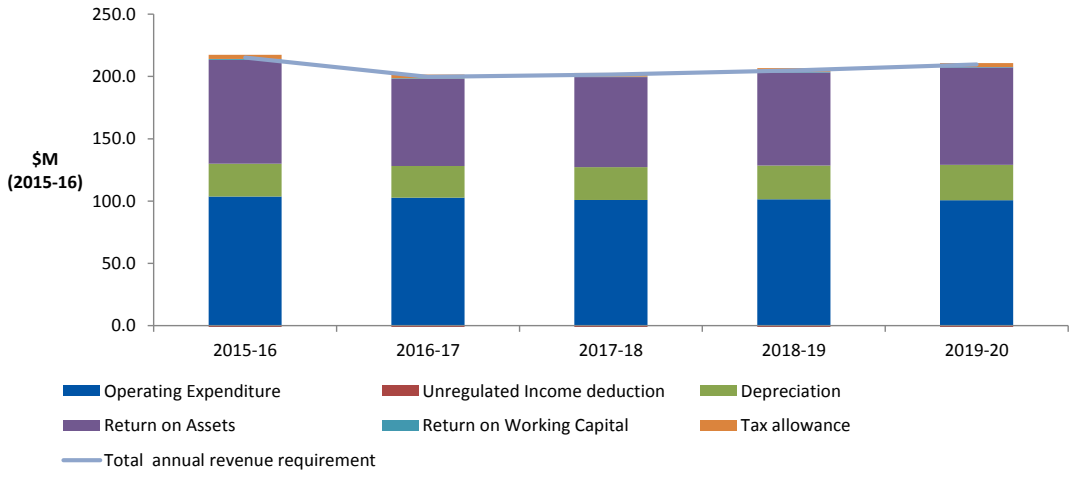
Efficiency gains will be delivered through a rigorous budget planning process where all cost items are examined in detail and that seeks to ensure least cost methods are used to deliver the expected level of service. In relation to capital expenditure, WaterNSW's proposal will ensure that expenditure is in line with best practise asset management and no unnecessary capital expenditure is incurred. An example of this approach can be seen in the Upper Canal Strategy where a program of capital works is planned to extend the life of the Canal and deferral of significant capital expenditure required for the Canal's replacement until at least 2035. These measures together represent WaterNSW's commitment to ensure lowest sustainable prices are applied to its customers.

The proposed revenue requirement for the upcoming determination period is shown in Table 5.1 and graphically in Figure 5.1. The revenue requirement is calculated using IPART's building block approach. WaterNSW's proposal on the components of the building block is discussed below.

Table 5.1 Revenue requirement based on the building block approach

($million, 2015-16)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Operating expenditure	103.6	102.7	101.0	101.4	100.6	405.7
Unregulated income deduction	-2.1	-1.8	-1.4	-1.8	-1.0	-6.0
Return of assets (depreciation)	26.5	25.4	26.3	27.1	28.4	107.3
Return on assets	83.3	69.9	72.2	74.6	78.3	295.1
Return on working capital	0.7	0.5	0.4	0.5	0.3	1.7
Tax allowance	3.2	3.0	3.0	3.0	3.1	12.1
Total annual revenue requirement	**215.2**	**199.7**	**201.5**	**204.9**	**209.7**	**815.8**
Year-on-year change		**-7.2%**	**0.9%**	**1.7%**	**2.3%**	

Figure 5.1 Revenue requirement based on the building block approach



5.3. Components of the building block

Return on assets

IPART's revised Weighted Average Cost of Capital (WACC) methodology

In 2013, IPART conducted a review on its WACC methodology in response to the uncertainty and volatility generated by the global financial crisis. The review resulted in a revised methodology that is more robust and is likely to withstand financial market volatility. One of the key changes to the WACC framework is the way the cost of debt is calculated. Under the new methodology, 50% of the cost of debt is calculated using the 'on the day' approach and 50% is calculated using the long term average approach. At the time of the review, the then SCA supported IPART in adopting the revised methodology as it provides improved certainty and stability in the rate of return. WaterNSW continues to support the revised approach and took the opportunity during the merger process to restructure the former SCA's debt portfolio to mirror IPART's cost of debt methodology.

Proposed WACC for determination period

For the upcoming determination period, WaterNSW proposes a post-tax real WACC of 4.58%. The WACC is calculated using IPART's revised WACC methodology and the parameters is WaterNSW's current best estimates of likely outcomes for when IPART conducts its observation in 2016. Equal weightings are applied to the long term and short term approach. The parameters are shown in Table 5.2 below.

Table 5.2 WACC Parameters

	'On the day' approach	'Long term average' approach
Nominal risk free rate	4.5%	2.5%
Inflation	2.5%	2.5%
Debt margin	2.4%	2.5%
Debt to total assets	60%	60%
Market risk premium	6.0%	8.0%
Gamma	0.25	0.25
Equity beta	0.7	0.7
Cost of equity	9.2%	8.6%
Cost of debt (nominal pre-tax)	7.4%	5.5%
Real post tax WACC	5.3%	3.9%
Mid-point WACC based on 50:50 approach: 4.58%		

Return of assets (depreciation)

Method of depreciation

Consistent with past regulatory proposals, WaterNSW proposes to apply the straight line method in calculating depreciation for regulatory purposes

Useful life of assets

For the 2012 determination period, IPART adopted an average asset life of 60 years. WaterNSW proposes to retain the same value for the upcoming determination. WaterNSW is of the view that the capital investment profile in the current determination period will not materially alter the average useful life of its assets

6. Proposed operating expenditure

6.1. Operating expenditure

Over the upcoming determination, WaterNSW is proposing operating expenditure of $405.7 million ($2015-16). This proposal represents WaterNSW commitment to contain and reduce operating expenditure throughout the next determination period. By 2019-20, WaterNSW's proposed operating expenditure will be 3% lower in real terms than the equivalent amount in 2015-16.

Shoalhaven pumping allowance

In the 2012 Determination, IPART provided an allowance for cost associated with the transfer of water from the Shoalhaven system. The allowance was based on the probability of pumping required at the time the final determination was finalised. For the next price determination period, WaterNSW proposes to retain the pumping allowance as part of the operating expenditure proposal. Based on current modelling, the expected cost of pumping from the Shoalhaven system is around $2.1 million per year. WaterNSW is able to provide an updated estimate when IPART is preparing its final determination.

Table 6.1 provides a high level breakdown of the proposed operating expenditure. Table 6.2 provides a breakdown by resource categories for the core operating expenditure.

Table 6.1 Proposed operating expenditure 2016-17 to 2020-21

($ million, 2015-16)	2015-16	2016-17	2017-18	2018-19	2019-20
Core operating expenditure	98.6	97.5	95.8	96.3	95.5
Bulk water cost – Fish River	3.0	3.0	3.0	3.0	3.0
Shoalhaven pumping allowance	2.0	2.1	2.1	2.1	2.1
Total	**103.6**	**102.7**	**101.0**	**101.4**	**100.6**

Table 6.2 Core operating expenditure by resource

($ million, 2015-16)	2015-16	2016-17	2017-18	2018-19	2019-20
Employee related	39.8	39.7	39.5	39.4	39.5
Administration	6.3	7.1	6.7	6.6	7.1
Contractors	35.5	37.1	35.7	36.6	35.6
Property	4.4	4.4	4.3	4.2	4.4
Materials	1.3	1.3	1.3	1.3	1.3
Insurance	2.4	2.4	2.4	2.4	2.4
Energy	2.1	1.9	1.9	1.9	1.9
License Fees	3.2	3.2	3.2	3.2	3.2
Grants	0.7	1.0	0.9	0.8	0.8
Other expenses	2.5	2.6	3.2	3.0	2.5
Proposed Efficiency Savings	0.4	-3.3	-3.4	-3.3	-3.2
Total Operating Expenditure	**98.6**	**97.5**	**95.8**	**96.3**	**95.5**

Allocation of shared operating costs

As a business with two distinct regulated customer bases, WaterNSW must ensure that shared overhead costs are allocated fairly amongst its customer bases. A cost allocation process has been developed to ensure that each customer base is allocated the fair amount of shared overhead cost. Key features of this process are:

- Direct cost. Costs directly attributable to a specific customer base are allocated to that customer base. For example, costs associated with protecting Greater Sydney's drinking water catchment are allocated directly to the Greater Sydney area customer base and are included in full in this operating expenditure proposal.
- Overheads incurred only by a specific customer base. Overheads incurred solely as part of providing services to a particular customer base are allocated to that customer base only. Using the example of protecting Greater Sydney's drinking water catchment above, any management and administration cost incurred by the Catchment Operations team will be allocated directly to the Greater Sydney customer base and are included in full in this operating expenditure proposal.
- Corporate-wide overheads. Costs associated with corporate wide business functions are isolated and then allocated to the regions based on the proportional operating expenditure related salaries and wages. Under this category, only a portion of the costs associated with business units such as Corporate Finance are included in this expenditure proposal.

6.2. Significant operating activities

Supply of water – quality and quantity

One of the main drivers of operating expenditure is to ensure WaterNSW meets its service delivery requirement of supplying water of sufficient quantity and quality. In order to achieve this, WaterNSW maintains a robust water monitoring function for both quantity and quality.

One of WaterNSW's strategic objectives is to improve the understanding of water quality causes and effects in order to ensure delivery of high quality water to customers. To achieve this, WaterNSW plans to design and develop a water quality event forecasting system to ensure future water quality events are forecast in time for the full implementation of planned responses. WaterNSW's understanding on causes and effects of water quality risks will also be reinforced by the Science Strategic Plan. The first Science Strategic Plan 2010-2015 is currently under review. It is expected that the revised Science Strategic Plan will be adopted and implemented in time for the commencement of the next determination period.

WaterNSW plays an important role in analysing supply efficiency in the Greater Sydney area as part of the metropolitan water planning process. For the upcoming determination, WaterNSW will continue to maintain a strong water supply modelling capability.

Catchment activity

The upcoming determination will also see the implementation of the 2016-2020 Healthy Catchment Strategy (HCS). The third revision of the HCS will continue to outline the risks and priorities for action that underpin investment in protecting the catchment. The 2016-2020 HCS will see WaterNSW continue the partnership approach with local councils and landholders to deliver improvement catchment protection outcomes.

Asset maintenance and management

As an infrastructure operator, asset maintenance and management is a crucial task. One of the major integration and transformation project for WaterNSW is the integration of the asset management function of the former SCA and State Water businesses. WaterNSW will continue the process of aligning its asset management process to International Standard ISO 55001 started by the former SCA and State Water businesses. WaterNSW plans to have its asset management system certified by June 2016.

7. Proposed capital expenditure

7.1. Capital expenditure – overview

Process of developing the capital investment program

WaterNSW's capital investment program has been developed using its existing project management framework and asset management framework and strategy. As part of the current operating licence condition, WaterNSW is in the process to aligning its asset management framework with the International Standard ISO 55001.

Under the asset management strategy, the capital investment program has been developed to ensure infrastructure complies with contemporary service delivery and asset management standards. It also includes renewals programs for various asset categories (information technology, hydrometric and general civil, mechanical and electrical assets). Expenditure on asset renewal programs are determined based on achieving the balance between 'asset consumption' and asset replacement or renewal. The concept of 'asset consumption' refers to the decrease in service potential of the asset over time due to a combination of wear and tear, corrosion/ degradation, technical obsolescence, increasing minimum standards and changing customer needs. Failure to maintain the balance between investment and consumption will result in an asset base which will have decreased capability and increased risk over the long term. This will result in either reduced capability to deliver service, or a significant increase in investment required to make up the 'backlog'.

Proposed expenditure

For the period of 2016-17 to 2019-20, WaterNSW proposes to conduct around $373 million of capital works. The year-on-year expenditure profile is shown in Table 7.1.

Table 7.1 Proposed capital expenditure 2016-17 to 2019-20

($ million, 2015-16)	2016-17	2017-18	2018-19	2019-20	Total
Proposed capital expenditure	65.7	89.9	71.0	146.5	373.1

Drivers for expenditure

For the next determination period, the capital investment program is aimed at the construction and renewal of assets that are used to collect, store and deliver raw water to customers. Expenditure in the early part of the determination period is predominantly focused on works to ensure asset reliability and asset renewals. From 2019-20 onwards, the major component of capital expenditure is for the Shoalhaven Transfers project to secure Greater Sydney's next tranche of water supply. Table 7.2 shows the breakdown of proposed capital expenditure by service requirement and Table 7.3 shows capital expenditure by categories used by IPART in the information return templates.

Table 7.2 Proposed capital expenditure by service requirement

($ million, 2015-16)	2016-17	2017-18	2018-19	2019-20	Total
Renewals and reliability	48.8	73.2	48.6	36.6	207.2
Water security	3.8	8.5	17.4	104.9	134.6
Business efficiency	10.0	8.1	5.0	5.0	28.1
Other regulated	3.0	-	-	-	3.0
Total capital expenditure	**65.7**	**89.9**	**71.0**	**146.5**	**373.1**

Table 7.3 Proposed capital expenditure by regulatory drivers

($ million, 2015-16)	2016-17	2017-18	2018-19	2019-20	Total
Mandatory standards	32.3	42.8	19.1	8.4	102.6
Discretionary standards	13.5	32.0	29.8	27.2	102.5
Business efficiency	13.4	7.4	5.6	7.5	33.9
Government program	6.5	7.7	16.5	103.4	134.1
Total capital expenditure	**65.7**	**89.9**	**71.0**	**146.5**	**373.1**

Significant projects overview

Renewals and reliability of assets

Over the next determination period, WaterNSW will continue with existing programs to renew and refurbish infrastructure and catchment assets to ensure reliable supply of water to its customers. Major projects in this category include:

- Upper Canal Refurbishment – Phase 2. This is the largest renewals project for WaterNSW's Greater Sydney area for the next determination period. Over the price path, WaterNSW is proposing to invest around $65 million to complete the refurbishment plan in accordance with the Upper Canal Strategy (refer to section 2.4 for further detail).
- Water Supply Asset Renewals. WaterNSW has a program in place to replace and renew minor and ancillary assets that support water supply operations, and to maintain the defined minimum levels of service and reliability.
- Catchment Assets renewals. Similar to the Water Supply Asset Renewals program, this program replaces and renews catchment assets such as picnic ground facilities, signage and catchment management assets such as firefighting equipment.
- Electrical systems upgrade. WaterNSW proposes to complete the electrical systems upgrade for the Metropolitan Dams and the Burrawang pumping stations to meet contemporary electrical and safety standards.

Water security project – Shoalhaven Transfers Works

The Shoalhaven Transfers Works project is an augmentation of the Shoalhaven system that entails the construction of a pipeline to transfer water from Burrawang to Avon Reservoir. When completed, the pipeline will provide a more efficient means of transferring water to Sydney compared to current configuration. The preferred option of the pipeline is the result of a series of work conducted by the former SCA which include scoping studies and option analysis. The costs of these works have already been included in the former SCA's regulatory asset base. The 2010 MWP (current MWP) indicated that the pipeline should be built and operational by 2025, but commencement would be subject to factors such as future climate predictions, and population growth and demand. Based on most recent demand projections and likely Government response to the Hawkesbury-Nepean Valley Flood Management Review, it is likely that water demand will exceed system yield in the next 10 years. In the absence of new direction from a revised MWP, WaterNSW believes it is prudent to include the project as part of the capital investment plan for the upcoming determination. The commencement of the project has been brought forward from 2018-19 to 2016-17.

Changes to previous capital investment plan

The two most significant changes to the capital investment plan compared to the last determination is the deferral of Warragamba Environmental Flows works of approximately $98 million (to commence in 2021) and the bringing forward of the approximately $103 million of capital expenditure for the Shoalhaven Transfer project. The rationale of bring forward the commencement has been discussed above.

As discussed in section 4.4, the capital investment plan for the current determination included expenditure for the construction of environmental flows structure for Warragamba Dam – subject to confirmation in the next MWP. However the delay in the release of the next MWP meant that the project has not yet commenced. Given the uncertainty in the release of the 2015 MWP and the environmental flows negative effect on system yield, WaterNSW decided to defer the commencement of the construction works to 2020-21. The deferral will ensure that sufficient yield adding works have commenced and there is sufficient calculated system yield before environmental releases commence.

Allocation of corporate wide capital expenditure

Similar to the operating expenditure proposal, WaterNSW has developed a process to ensure expenditure on corporate wide capital projects are allocated fairly to each customer base. Under this process, cost associated with corporate wide capital projects (such as corporate information technology projects) are isolated and then allocated to each region based on the proportional value of the Regulatory Asset Base (RAB). On the basis of RAB proportion, 67% of the cost associated with corporate wide capital projects are allocated to the Greater Sydney customer base. The proportion of Greater Sydney RAB is shown in Table 7.4 below.

Table 7.4 Greater Sydney RAB as a proportion of WaterNSW's total RAB

$ million	Value as at 1 July 2016	Proportion
Regulatory asset base – Rural customer base	763	33%
Regulatory asset base – Greater Sydney customer base	1,529	67%
Combined regulatory asset base	**2,292**	**100%**

8. Proposed prices

8.1. Prices for Sydney Water

Proposed prices for Sydney Water are in Table 8.1.

Table 8.1 Proposed prices and revenue to Sydney Water (SDP off)

$2015-16	2015-16	2016-17	2017-18	2018-19	2019-20
Fixed Charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Variable (volumetric) Charge ($/ML)	85.81	75.17	75.08	75.73	76.63
Revenue from Fixed Charge ($M/Yr)	170.05	158.68	160.13	162.87	166.69
Revenue from Variable Charge ($M/Yr)	44.85	39.67	40.03	40.72	41.67
Total Revenue ($M)	**214.90**	**198.35**	**200.16**	**203.59**	**208.36**

Table 8.2 Proposed prices and revenue to Sydney Water (SDP on)

$2015-16	2015-16	2016-17	2017-18	2018-19	2019-20
Fixed Charge ($M/month)	14.17	13.22	13.34	13.57	13.89
Variable (volumetric) Charge ($/ML)	104.87	90.62	90.33	90.96	91.83
Revenue from Fixed Charge ($M/Yr)	170.05	158.68	160.13	162.87	166.69
Revenue from Variable Charge ($M/Yr)	45.37	39.67	40.03	40.72	41.67
Total Revenue ($M)	**215.42**	**198.35**	**200.16**	**203.59**	**208.36**

Price structure

For the 2012 Determination, IPART accepted the former SCA's proposal to calculate prices to Sydney Water based on the short-run marginal cost approach where the variable price to Sydney Water was set to recover 20% of the revenue requirement and the fixed price recovering the remaining 80%.

For the upcoming determination period, WaterNSW proposes to retain this pricing structure. The high fixed to variable price ratio reflects the fixed cost nature of WaterNSW's business and provides cost certainty to the largest customer. As discussed in section 2.7, the high fixed prices has limited the upside gain in a period where actual demand exceeded the level set at the beginning of the determination period.

'SDP price schedule'

The 'SDP price schedule' was introduced at the 2012 Determination in recognition of the revenue destabilisation that SDP's operation would inflict on the former SCA. The 'SDP price schedule' allows the variable charge to Sydney Water to increase when SDP is in full operation mode so that the former SCA would receive sufficient revenue to cover its IPART determined revenue.

The SDP price schedule from the current determination is tied to the specific modes of operation under the current operating rules and therefore does not provide for future potential changes to these modes of operation or operating rules as determined by the NSW Government. To ensure the integrity of IPART's determined efficient revenue, WaterNSW proposes the incorporation of a mechanism to adjust the SDP price schedule in the case that the NSW Government changes the SDP modes of operation or operating rules.

8.2. Prices for Council customers

Proposed prices to Council customers are shown in Table 8.3 below.

Table 8.3 Prices to Council customers

$ 2015-16	2015-16	2016-17	2017-18	2018-19	2019-20
Fixed Charge ($M/month)					
Wingecarribee Council	23,118	69,298	69,298	69,298	69,298
Shoalhaven City Council	600	1,559	1,559	1,559	1,559
Goulburn-Mulwaree Council	1,801	1,299	1,299	1,299	1,299
Variable charge ($/ML)					
Variable (volumetric) Charge ($/ML)	216.17	43.31	43.31	43.31	43.31
Total revenue from Councils ($M)	**1.4**	**1.1**	**1.1**	**1.1**	**1.1**

Price structure

The revenue requirement from Council customers is based on the derived cost of each council based on their location of the network. Once the derived costs have been calculated, the pricing structure is overlayed to determine the fixed and variable component of the prices. For the upcoming determination, WaterNSW proposes to align Council customers' price structure with that of Sydney Water – a fixed/variable ratio of 80%:20%. The application of a high fixed charge reflects the cost base of WaterNSW's business and recognises the highly secure nature of water availability to Councils. The proposed higher fixed charge also takes into account the relative stability in water demand from the councils.

8.3. Prices to unfiltered and raw customers

Proposed prices to unfiltered and raw water customers are shown in Table 8.4.

Table 8.4 Proposed prices to unfiltered and raw customers

	2015-16	2016-17	2017-18	2018-19	2019-20
Unfiltered customers					
Fixed Charge for 20mm Meter ($)	104	104	104	104	104
Variable (volumetric) Charge (c/kL)	118	118	118	118	118
Revenue from Fixed Charge ($M/Yr)	0.05	0.05	0.05	0.05	0.05
Revenue from Variable Charge ($M/Yr)	0.24	0.24	0.24	0.24	0.24
Raw water customers					
Fixed Charge ($/month)	0	0	0	0	0
Variable (volumetric) Charge ($/ML)	680	680	680	680	680
Revenue from Fixed Charge ($M/Yr)	0	0	0	0	0
Revenue from Variable Charge ($M/Yr)	0.01	0.01	0.01	0.01	0.01
Total revenue from unfiltered and raw ($M)	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**

Price structure

In the 2012 determination, the former SCA proposed to align the price structure of small customers with the price structure of the retail network. This strategy ensures customers do not face a price shock if they connect to the distribution network and consistent with previous submissions that prices for small customers should not provide incentives for customers to connect or disconnect from alternative supply. This proposal was accepted by IPART.

For the upcoming determination, WaterNSW proposes to maintain the same pricing methodology for unfiltered and raw customers.

8.4. Price impact on customers

In developing prices, WaterNSW has been mindful of the impact on its immediate and end use customers. For the upcoming price determination, prices to customers will be lower in real terms compared to the prices in the final year of the current determination. This real price decrease is achieved without compromising water quality.

Impact on Sydney Water customers

Table 8.5 below shows how WaterNSW's proposed prices will contribute to a price reduction to Sydney Water's end customers through each year of the determination period. The calculation below is based on the average bill of an individually metered residential property.

Table 8.5 Price impact to Sydney Water's end use customer

	2016-17	2017-18	2018-19	2019-20
Pass through to customers ($2015-16)	-9.65	-8.77	-6.98	-4.56
% decrease attributable to WaterNSW	1.2	1.1	0.9	0.6

Impact on Council customers

Table 8.6 shows the impact of WaterNSW's proposed prices in real terms

Table 8.6 Price impact to Council customers

	2016-17	2017-18	2018-19	2019-20
Revenue from Variable Charge	216,463	216,463	216,463	216,463
Revenue from Fixed Charge	865,872	865,872	865,872	865,872
Total revenue	**1,082,335**	**1,082,335**	**1,082,335**	**1,082,335**
Equivalent $/ML	216.55	216.55	216.55	216.55
% Change	-22%	0%	0%	0%

9. Proposed changes to the regulatory framework

9.1. Improving the regulatory framework through introduction of incentive mechanisms

Throughout the world, economic regulation is the tool used to protect consumers from utilities abusing their monopoly powers. Initially, economic regulation relied heavily on prescriptive forms of control designed to protect consumers' interest. However, as the regulatory system matured, regulators gradually moved away from prescriptive controls towards forms of regulation that provide incentives for utilities to align their interests with that of the customers as well as providing flexibility to innovate and select projects that deliver the type of efficiencies desired by the end customers. These types of incentive schemes have been widely adopted by water and energy regulators in the United Kingdom and the Australian energy sector. In the United Kingdom, the incentive schemes have been shown to deliver enduring gains to customers, the regulator as well as the regulated utility.

While economic regulation in the Australian water industry is much less evolved compared to the United Kingdom and the Australian energy sector, IPART in recent years has taken positive steps to improve key components of the regulatory framework. Initiatives such as the introduction of financeability test for water pricing determination, the introduction of a more robust approach in determining the WACC to reduce volatility, increasing transparency through publication of WACC Market Updates and improvement to the approach in inflation forecasting have all been well received by regulated water utilities and recognised by rating agency Moodys.

IPART's recent initiatives have improved the financial stability of water utilities. WaterNSW believes IPART now has an opportunity to further improve the regulatory framework by enhancing incentives within the current regulatory framework for utilities to achieve efficiencies and deliver benefits to customers. WaterNSW therefore proposes to introduce two incentive mechanisms for the next regulatory determination:

- Efficiency Benefit Sharing Scheme (EBSS); and
- Raw Water Quality Incentive Payment (RWQIP).

9.2. Efficiency Benefit Sharing Scheme

Rationale for introduction

A central tenet of economic regulation is the concept of cost efficiency. To the extent where a regulated business is able to achieve efficiencies on costs that it can control, customers will benefit from lower prices. Under the current regulatory framework, cost efficiency is achieved by IPART through efficiency reviews at the time of price reset and then setting prices independently of actual cost for the duration of the determination period. This framework allows WaterNSW to retain any differences between forecast and actual incurred cost. Whilst simple to implement, this form of efficiency mechanism is known for its declining incentive to the regulated utility to implement efficiency measures in the later part of the regulatory period.

An EBSS is a mechanism which delivers equal incentives for the regulated business to implement efficiency savings in each year of the regulatory period. It corrects the incentive for a regulated business to 'front-load' efficiency measures in the early years of the determination period and provide an equal incentive to strive for cost efficiency in each year of the regulatory period. This is achieved by allowing the by allowing the regulated business to carry over efficiency gains for a defined period, regardless of the year the cost efficiency is achieved. The symmetrical nature of the scheme means that reversion in efficiency would result in the penalty being carried over for the same period as the gains.

This mechanism has a long history of use by by both the water and energy sector in the United Kingdom and by the Australian Energy Regulator in Australia. EBSS is sometimes referred to as the Efficiency Carry-over Mechanism.

WaterNSW proposal

WaterNSW proposes to implement an operating expenditure only EBSS with the following characteristics:

- Symmetrical. Rewards are gained for improvement in efficiency and penalties for regression.
- Exclude non-controllable costs. Costs outside of WaterNSW's control should not be included. WaterNSW proposes to exclude actuarial gains and losses and costs associated with routine and drought-induced pumping
- Cap and Collar. WaterNSW proposes to limit gains and losses to 5% of Greater Sydney area's regulated operating expenditure for the next determination period. This ensures for the introductory period, gains and losses under this scheme are limited.
- Four-year carry over period. A four year period means that in each year, WaterNSW realises approximately 25% of the benefits of any efficiency gains, while customers receive 75% of the benefits. If the holding period of the benefit was less than the duration of the regulatory period then it would not be possible to deliver an equal incentive rate in each year.

9.3. Raw Water Quality Incentive Payment

WaterNSW proposal

The Raw Water Quality Incentive Payment (RWQIP) is a service performance incentive contained in the current Raw Water Supply Agreement (RWSA) between WaterNSW and Sydney Water. The RWQIP sets the condition in which Sydney Water would provide an incentive payment to WaterNSW for improvement in raw water quality delivered to the Prospect Water Filtration Plant.

Under the RWQIP, WaterNSW is eligible to receive up to $1 million annually if water quality in a given year is better than the average quality of the preceding five years based on the following parameters: alkalinity, colour, turbidity and exceptional operating circumstances.

The RWSA was agreed by both parties after the 2012 Determination was set and therefore could not be included in the implementation of the determination. In its final report on the RWSA, IPART stated:

> *"We support the rationale behind the inclusion of the mechanism. Depending on submissions made by SCA, Sydney Water and any other stakeholders to our next determination of SCA's prices, we will consider its inclusion in SCA's prices to Sydney Water."*

WaterNSW therefore proposes to include the incentive payment clause that is within the current Raw Water Supply Agreement (RWSA) between WaterNSW and Sydney Water in the next determination period.

Modelling by WaterNSW suggests that the net benefit to WaterNSW would be in the vicinity of $30,000 to $300,000 per annum where an incentive was paid.

10. Other regulatory issues

10.1. Scarcity pricing

WaterNSW understands that IPART is interested in exploring the concept of applying scarcity pricing in the urban water sector. For the 2012 Determination, the former SCA commissioned Frontier Economics to provide advice on scarcity pricing and its interaction with SCA's prices. At the time of the submission, the then SCA recommended against the introduction of scarcity pricing.

In considering the development and implementation of a wholesale scarcity pricing regime, WaterNSW again urges IPART to carefully consider how a wholesale scarcity price will operate in conjunction with the operating rules under the current Metropolitan Water Plan. For example, if a scarcity price is triggered on low dam storage levels, then there is a risk of double counting the cost of consuming dam water as the current operating rules already include measures that are based on total dam storage levels.

For scarcity pricing to have the desired effect, WaterNSW believes the price signal needs to be felt by the end use customers. WaterNSW therefore does not recommend the introduction of scarcity pricing at the wholesale level as it does not guarantee the price signal at the wholesale level is transmitted to end customers. A retailer could choose not to pass on the higher raw water costs in an attempt to keep water charges low. Another impediment to the introduction of scarcity pricing is the quarterly billing cycle. As the majority of Sydney Water's customers are billed on a quarterly basis, there would be delays in the price signal being sent to the end customer, assuming Sydney Water chooses to pass the signal on.

A potential scarcity pricing model that could be explored for the future is where a price signal on the scarcity of water is sent to customers without exposing the water supplier to excessive demand risks. Such a model would have the following characteristics:

- Aligning the WaterNSW's volumetric price with its short run operating cost, with a fixed charge to address any revenue shortfall (this approach has been adopted by WaterNSW in its preferred price structure for this determination).
- Setting a separate volumetric price that reflects the estimated marginal value of water in storage. This charge would be in addition to the base infrastructure and would apply when predetermined triggers are reached. This arrangement could generate additional revenue that is not part of WaterNSW's assumed revenue. Further discussions are required on the impact of this approach.

A copy of the Frontier report submitted as part of the 2012 price review is submitted with this document for IPART's reference.

Chief Executive Officer Certification

Chief Executive Officer's Declaration

In accordance with the *Guidelines for Water Agency Pricing Submissions*, November 2014 (the Guide), of the Independent Pricing and Regulatory Tribunal of New South Wales, I declare that:

a) the information provided in our pricing proposal submitted on Tuesday 30th June, 2015 is the best available information of the financial and operational affairs of WaterNSW – Greater Sydney area and has been checked in accordance with section 2.17 of the Guide; and

b) there are no circumstances of which I am aware that would render any particulars included in the information provided to be misleading or inaccurate.

Certified by the Chief Executive:

DAVID HARRIS

30 JUNE 2015

Dated