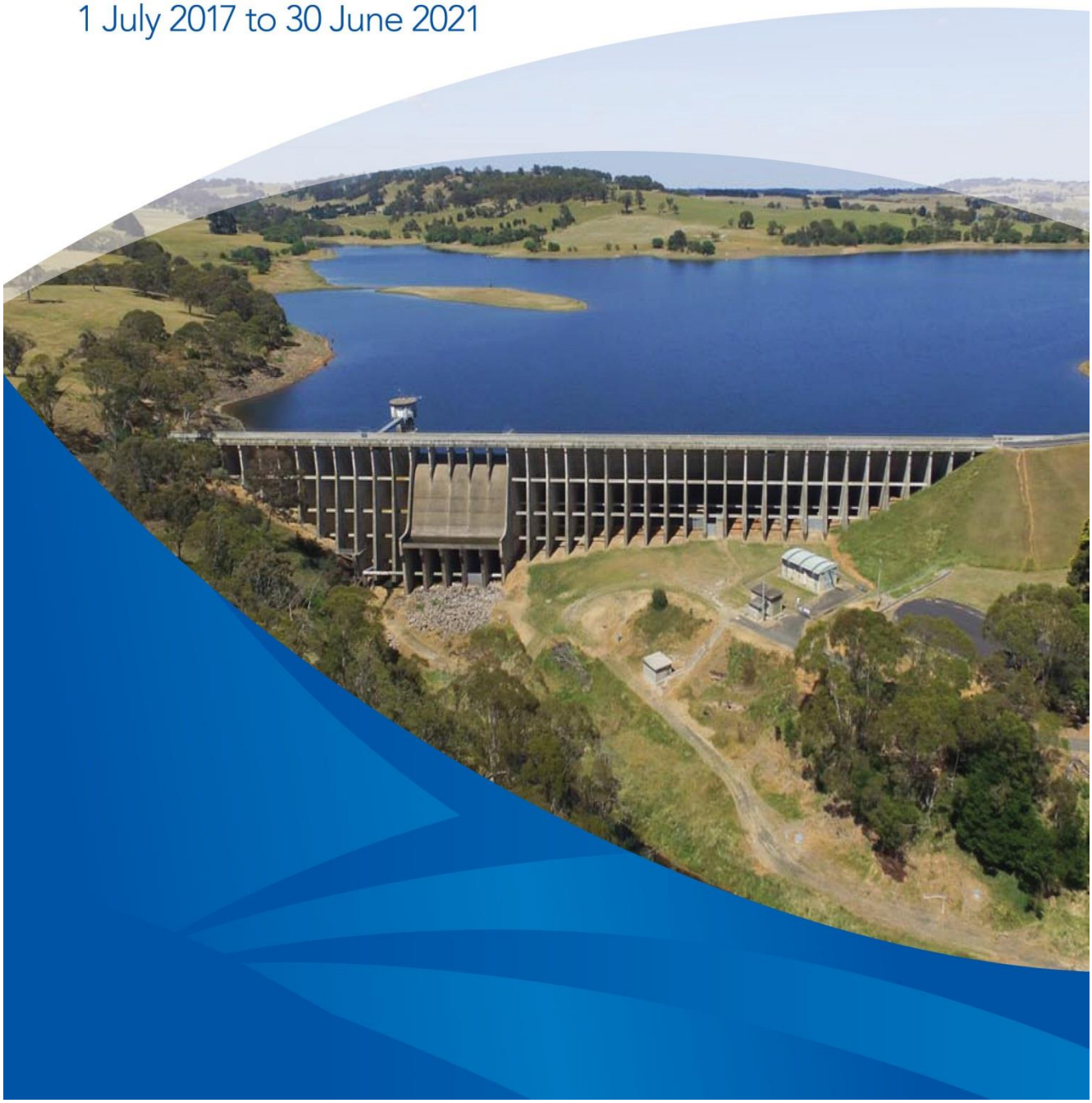
Pricing Proposal to the Independent Pricing and Regulatory Tribunal

Regulated prices for NSW Rural Bulk Water Services from

1 July 2017 to 30 June 2021



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Chief Executive Officer Foreword

I am very pleased to submit WaterNSW's proposal to the Independent Pricing and Regulatory Tribunal for regulated prices for NSW rural bulk water services from 1 July 2017 to 30 June 2021. This is WaterNSW's first regulatory pricing proposal for NSW rural bulk water services since its formation on 1 January 2015.

As part of our commitment to be a modern, efficient and customer centric organisation, we engaged in an extensive customer consultation program in the lead up to our submitting this pricing proposal. This consultation helped to inform and shape our proposal.

This pricing proposal sees a decrease in our overall revenue requirement to $350.4 million over four years - **a decrease in the revenue requirement paid for by customers of 11 per cent**. This result is driven by the efficiencies we have introduced into our business, reflected in a 20 per cent decrease in our forecast operating expenditure requirements which will be $154.9 million over the four year period. We are proud to have been able to deliver these savings to our customers.

The efficiencies we have introduced into our business have not been at the cost of service quality or safety. We are proposing a capital investment program of $193.7 million. This program is focussed on ensuring that our assets are properly maintained to meet our asset health standards.

WaterNSW is committed to ensuring that our NSW bulk water services meet the needs of customers. We aim to continue to engage with our customers throughout the IPART consultation on our pricing proposal. In addition, we are committed to driving further reform of our services and pricing to better meet customer needs. Therefore, we will be continuing to engage and work with our customers to address their issues throughout the forthcoming determination period.

David Harris

Chief Executive Officer

WaterNSW

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Executive summary

WaterNSW is pleased to submit this pricing proposal to the Independent Pricing and Regulatory Tribunal (IPART) to enable IPART to determine maximum prices to customers for bulk water services in rural NSW for four years from 1 July 2017 to 1 July 2021.

WaterNSW was formed on 1 January 2015 under the *Water NSW Act 2014 (NSW),* effecting a merger of the former Sydney Catchment Authority and the former State Water Corporation. 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.

In rural NSW, Water NSW maintains, manages and operates major infrastructure to deliver bulk water to licensed water users on the State's regulated rivers. There are about 6,300 customers in 14 regulated river systems. WaterNSW owns and operates 20 dams and more than 280 weirs and regulators to deliver water for town water supplies, industry, irrigation, stock and domestic use, riparian and environmental flows.

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 plans, investigates and develops water infrastructure solutions to water security and reliability issues and then plans, develops, operates and maintains that infrastructure.

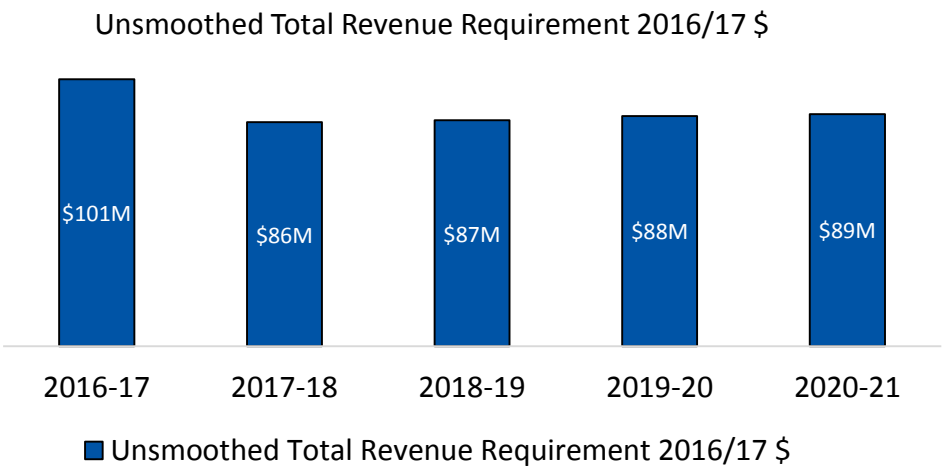
We are committed to being a modern, efficient and highly customer centric organisation. Our focus on continuous improvement will lead to ongoing increases in efficiency, enabling delivery of our objectives at the lowest possible cost to customers.

To achieve this goal, WaterNSW has embarked on a program of business transformation to deliver merger synergies and implement a new fit-for-purpose organisation with the best structure, systems, people, processes and culture.

Our revenue requirement

We are proposing a total revenue requirement of $350.4 million over the four year determination period, or an average of $87.6 million per annum. Figure 1 below compares the revenue requirement for the final year of the current determination (2016-17) to each year of our proposed requirement for the upcoming determination period, from 2017-18 to 2020-21.

Figure 1 Unsmoothed Total Revenue Requirement 2016-17 to 2020-21 (2016-17 real $s)



In real terms, the annual revenue requirement for customers in this proposal is on average 11 per cent lower than compared to the amount allowed by the regulator for the last year of the current determination. 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.

WaterNSW is committed to supplying bulk 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 customer levels of service are being provided at least cost.

Over the upcoming determination, WaterNSW is proposing operating expenditure of $154.9 million ($2016-17) or around $38.7 million per annum. This proposal represents WaterNSW's commitment to contain and reduce operating expenditure throughout the next determination period. By 2020-21, WaterNSW's proposed operating expenditure will be 20 per cent lower than compared to the amount allowed by the regulator for the last year of the current determination.

WaterNSW has proposed a capital expenditure program in line with best asset management practise. For the upcoming determination period, WaterNSW proposes to deliver around $193.7 million of capital works. Our capital expenditure program is primarily aimed at the renewal and replacement of assets that are used to collect, store and deliver raw water to customers. This will ensure asset reliability and capability are properly maintained.

Our extensive customer consultation

In forming this proposal, we consulted extensively with our customers. We commenced this process in November 2015 and continued this process until June 2016. We intend to continue this engagement throughout IPART's deliberation of our proposal and into the next determination period.

Our customer engagement included roadshows and presentations on the main features of our pricing proposal and the issues that these raise for ourselves and our customers, including specific issues for individual customer groups or valleys. We received significant feedback from our customers throughout the engagement process and this feedback has helped us shape the structure of our pricing proposal.

Our proposed prices

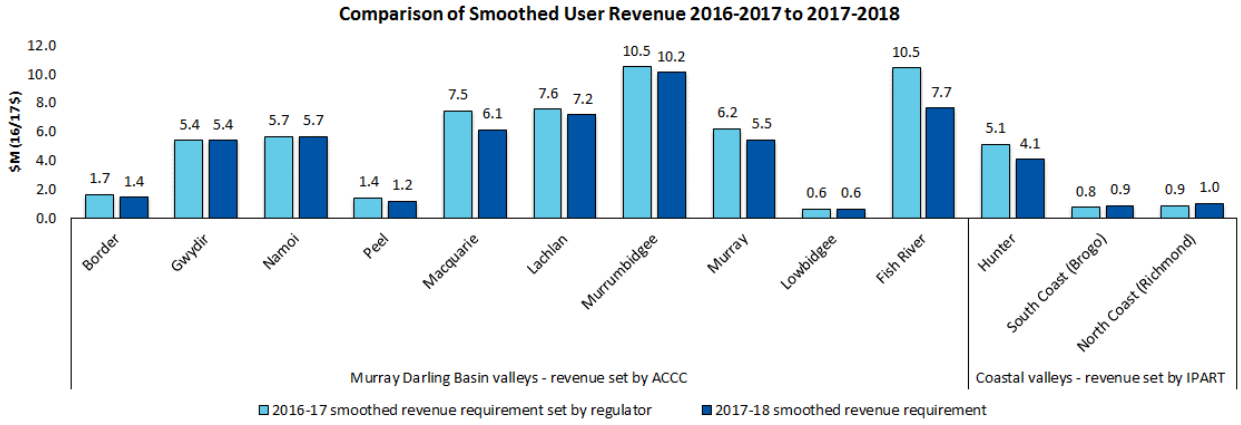
As a result of our customer consultations, our pricing proposal largely follows the tariff structure set in the last determination of our prices for the 2014-17 period. The main features of our pricing proposal are as follows:

- customer /government revenue split as per prior determinations based on impactor pays methodology approved by IPART
- customer split between fixed and variable charges as per the prior determination (other than for one customer group). For most customers, this means 40% fixed charges and 60% variable charges
- continuation of the unders and overs mechanism (UOM) introduced in the prior determination
- as a fixed to variable ratio of less than 80 per cent fixed provides WaterNSW with revenue volatility, WaterNSW has sourced a market based risk transfer product for the volatility, the cost of which has been included in customer pricing.

With proposed customer (user) revenues 11 per cent lower than the amount allowed by the regulator for the last year of the current determination, most valleys will benefit from a reduction in prices. This is shown in Figure 2 below[1].

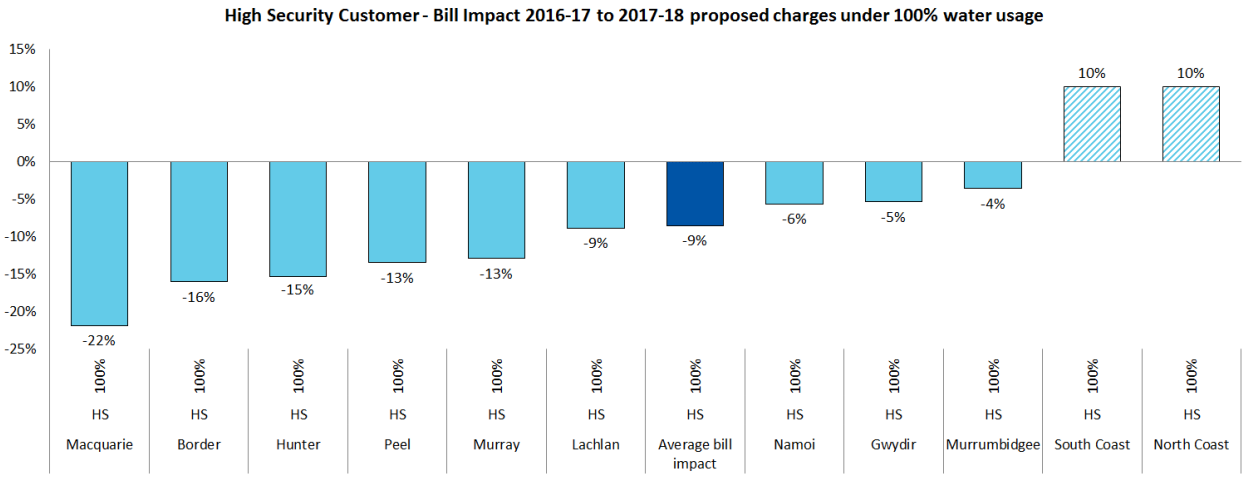
[1] We have adopted straight-line real smoothing to ensure that customer receive the benefit of stable prices in the upcoming determination period. That is, we divide the sum of total user revenue (16/17 $) in each year of the upcoming determination period by the number of years. This smoothed revenue is then escalated by CPI.

Figure 2 Comparison of smoothed user revenue 2016-17 against smoothed revenue allowance set by the regulator 2017-18



The customer bill impact of our pricing proposal[2] is set out in Figure 3 and Figure 4 below[3]. **High security entitlement customers will see, on average, a decrease in bills of 9 per cent, while general security entitlement customers will see, on average, a decrease in bills of 3 per cent.**

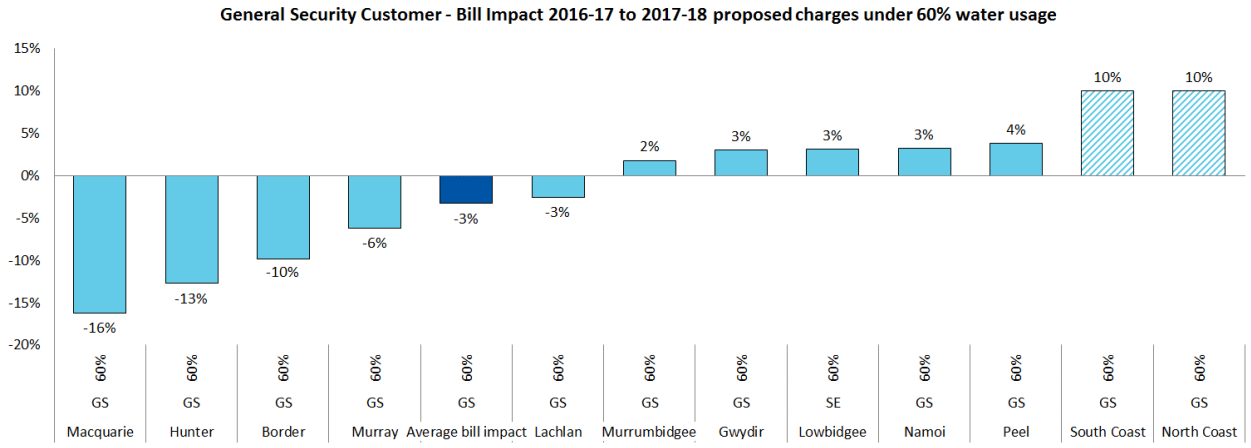
Figure 3 Bill impact high security entitlement customers



[2] Excluding the impact of Government pass through charges

[3] Average bill impact is calculated using the percentage bill impact weighted by the number of entitlements in the valleys. This excludes the impact of the meter service charge. The charges in the North Coast and South Coast valleys are below cost recovery. For these valleys, we have proposed 10 per cent yearly price increases as a glide path to full cost recovery while we pursue long term strategies and solutions with our customers to alleviate the pricing pressures in these valleys

Figure 4 Bill impact general security entitlement customers



* SE is Supplementary Entitlement. Applies to the Lowbidgee Flood Control and Irrigation District.

Reforms in the water sector

On 31 May 2016 the *Water NSW Amendment (Staff Transfers) Bill 2016* passed the NSW Parliament, facilitating the transfer of employees of the Department of Primary Industries Water (DPI Water) to Water NSW. This is part of enabling WaterNSW to carry out functions of the Water Administration Ministerial Corporation (WAMC) in relation to delivering water, all customer transactional dealings, all in-field services and resource management for groundwater and surface water. These functions are subject to IPART price determination, with new prices to commence on 1 July 2016. From 1 July 2016, WaterNSW will bill customers for all WAMC functions (including those still to be supplied by DPI Water) at the IPART determined prices. However, to provide greater transparency to our customers we will request IPART to endorse separate DPI Water and WaterNSW prices for WAMC functions to reflect the functions undertaken by WaterNSW as distinct from those remaining with DPI Water.

Our Future direction

Our extensive customer consultation together with our own preparations for this pricing proposal has identified a number of issues on which we will consult with our customers and other relevant stakeholders and which we will consider for inclusion in our pricing proposal for the 2021 determination period. These issues range from government:user shares, our proposed levels of service customer framework and mechanism to allow greater pricing flexibility and transparency. Our aim is to become an efficient, modern and customer focussed organisation and these further investigations and potential reforms will assist us to move towards our goal.

1. Our business

1.1 Introduction

WaterNSW was formed on 1 January 2015 under the *Water NSW Act 2014 (NSW)* effecting a merger of the former Sydney Catchment Authority and the former State Water Corporation, responsible for raw water supply and the development and delivery of raw water infrastructure solutions for rural NSW and the Greater Sydney area.

We are committed to being a modern, efficient and highly customer centric organisation. Our focus on continuous improvement will lead to ongoing increases in efficiency, enabling delivery of our objectives at the lowest possible cost to customers.

To achieve this goal, WaterNSW has embarked on a program of business transformation to deliver merger synergies and implement a new, fit-for-purpose organisation with the best structure, systems, people, processes and culture.

1.2 Strategic direction

The WaterNSW Board and Management Team have developed a Strategic Action Plan to deliver the organisation's nine Strategic Priorities:

1. **Safety excellence:** to improve our safety performance for employees, contractors and the public
2. **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
3. **Customer value creation and responsiveness:** to improve customer value
4. **Growing the capabilities of our people:** to enable performance through our people
5. **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 water supply
6. **Asset health and capability management:** to improve the efficiency of our asset management processes and activities and our asset development projects performance
7. **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
8. **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
9. **Knowledge management:** to systematically capture all of the company's mission critical and mission important knowhow, methods and outcomes (knowledge) and have that knowledge readily accessible to all employees and in a form that is useable across multiple functional areas.

WaterNSW is committed to maintaining a customer focus by engaging closely with our customers to ensure the services we provide are adding value to their operations. We intend to evolve away from a single offering towards a more modern/contemporary approach to develop product offerings that take into account attributes such as level of service, optionality, volume, complexity of delivery and order compliance, and result in higher value creation for customers. This is strongly supported by our customers.

1.3 Our assets and infrastructure

WaterNSW owns and operates 42 water supply dams across NSW. In the rural area of operations covered by this pricing proposal, WaterNSW owns and operates 20 dams and more than 280 weirs and regulators to deliver water for town and water supplies, industry, irrigation, stock and domestic use, riparian and environmental flows. Figure 5 below shows our area of operation.

The modern engineering equivalent replacement asset value (MEERA) of the rural asset base is $4.4 billion dollars (2008 assessment adjusted to 2016-17 dollars).

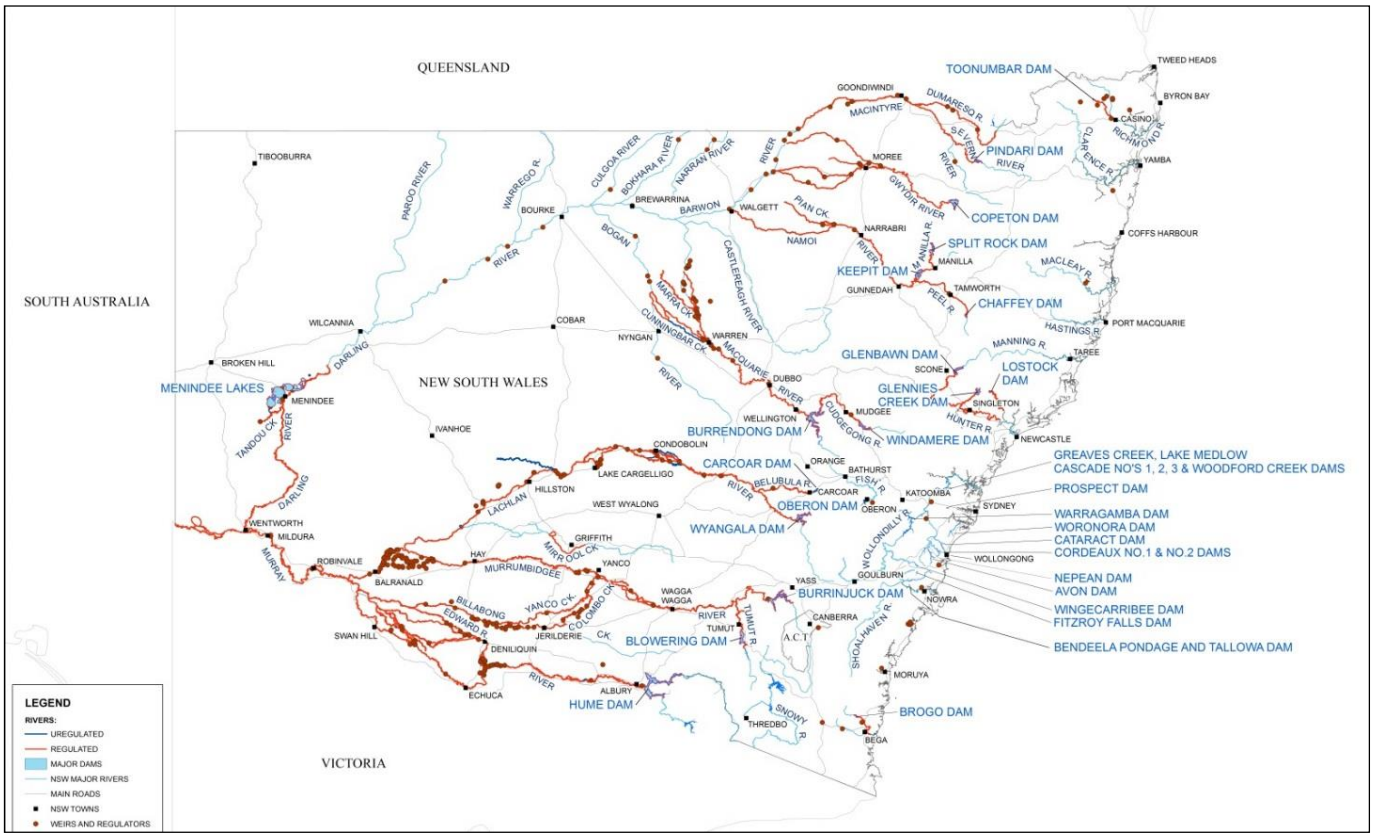
WaterNSW assets are dispersed along the 7,000 km of the regulated river systems, presenting unique challenges for effective asset operations, maintenance and ongoing management.

WaterNSW is also responsible for the Fish River Water Supply Scheme (Fish River Scheme) which previously was a Government Trading Enterprise that operated as a bulk water supplier on the Fish River until 2005. The Fish River Scheme[4] is a pipe and pump scheme (distribution network) which sources water from Oberon Dam and Rydal Dam and supplies raw and filtered water directly to three major customers – EnergyAustralia, Lithgow City Council and Oberon Council. It also provides water to approximately 280 smaller customers who include farmers (not irrigation) and some industrial customers (e.g. collieries) who use the water for domestic purposes.

Fish River Scheme water may also be transferred to the Upper Cascade dams which form part of the water supplied by Sydney Water to the middle and upper Blue Mountains. These Greater Sydney bulk water transfers are a system balancing measure to ensure the long-term availability of bulk water to the Greater Sydney water supply system.

WaterNSW rural infrastructure assets have a wide range of construction dates. Some major dams and regulating structures are in excess of 100 years in age. The peak period in dam construction was in the 1960s and 1970s. As such a 'typical' major storage in the WaterNSW portfolio is in the range of 50-60 years of age.

Figure 5 Map of WaterNSW area of operations



[4] The Fish River Scheme is not subject to a water sharing plan and its customers do not have an entitlement as other WaterNSW's river valleys customers. However, in previous reviews Fish River has been treated as a separate regulated river for pricing purposes.

1.4 Our customer base

WaterNSW currently provides rural bulk water services to around 6,300 customers. These include:

- Private irrigators and Irrigation companies: irrigators use water for agricultural production while irrigation companies distribute water supplied by WaterNSW to their retail customers
- Environmental water holders: we release water for environmental purposes. Environmental water holders are increasingly becoming a major customer segment for WaterNSW
- Local Councils: council customers include Dubbo City Council, Albury City Council and Tamworth Regional Council.

We meet community needs by providing water for stock and domestic users. We are also responsible for delivering environmental flows on regulated rivers.

1.5 Our operations

WaterNSW's area of operations is divided into 13 valleys defined by geographic area in NSW, water management area or a water source. These include the Fish River Scheme and the following valleys:

Murray-Darling Basin (MDB) valleys:

1. Border
2. Gwydir
3. Lachlan
4. Lowbidgee
5. Macquarie
6. Murray
7. Murrumbidgee
8. Namoi
9. Peel.

Coastal valleys:

1. Hunter
2. North Coast
3. South Coast.

2. Our pricing proposal

2.1 Application of our pricing proposal

This pricing proposal for maximum prices from 1 July 2017 to 30 June 2021 covers bulk water services to our customers in:

- the nine valleys in the MDB
- the three coastal valleys (Hunter, North Coast and South Coast), and
- the Fish River Scheme.

The pricing of bulk water services to the MDB valleys as well as customers in the Fish River Scheme (other than Oberon and Lithgow councils) are regulated under:

- the *Water Act 2007* (Cth)
- the *Water Charge (Infrastructure) Rules 2010* (WCIR) made under the section 92 of the *Water Act 2007*
- the Australian Competition and Consumer Commission's (ACCC's) *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010* of July 2011(ACCC Pricing Principles).

The pricing of bulk water services to the three coastal valleys and Oberon and Lithgow councils are regulated under section 11 of the *Independent Pricing and Regulatory Tribunal Act 1992* (NSW) (IPART Act).

As permitted under the WCIR, in 2015, IPART became an accredited agency taking over the pricing role from the ACCC. IPART is required to adhere to the requirements in the WCIR for the nine valleys in the MDB as well as customers in the Fish River Scheme (other than Oberon and Lithgow councils).[5]

In July 2014, IPART agreed to a request from WaterNSW (then State Water Corporation) to defer for two years any new prices for the three coastal valleys and Lithgow and Oberon councils.[6] State Water Corporation made this request due to the bulk water reforms underway at the time which were expected to result in significant changes to the functions and associated costs of the agencies.[7] IPART reasoned that deferring the timing of the review would allow it to be better informed of the impact of bulk water reforms when setting prices. As a result, the prices charged to those customers have not changed since 2013-14.

In December 2015 IPART issued a submission information package to WaterNSW including Guidelines for Water Agency Pricing Submissions (IPART Guidelines).This pricing proposal has been prepared in accordance with the IPART Guidelines, the WCIR and ACCC Pricing Principles as appropriate. [8]

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[5] The requirement for IPART to adhere to the WCIR is currently subject to a review conducted by the ACCC at the request of the Commonwealth Minister. As part of this review, the ACCC has proposed the hand back of regulatory pricing responsibilities to state-based regulators. We understand that the ACCC provided its final advice, and proposed draft rules, to the Government at the end of May 2016. If the ACCC's proposal is accepted by Government, IPART would no longer be required to follow the WCIR and the ACCC Pricing Principles. In the meantime, IPART must conduct this price review in a manner which will comply with the requirements of the current WCIR and ACCC Pricing Principles for the nine MDB valleys and customers in the Fish River Scheme (other than Lithgow and Oberon councils). IPART has indicated that it will consult with WaterNSW and the ACCC regarding the implications of any changes to the regulatory regime should they occur.

[6] IPART 2014, Media Release Water Management and Bulk Water Prices to Remain at Current Levels, 14 July 2014

[7] Bulk water reforms include the consolidation of the former State Water Corporation and the former Sydney Catchment Authority into WaterNSW.

[8] Note: Figures used within the tables of this report may not reconcile due to rounding. Any differences due to rounding will not be material. Unless otherwise stated, the forecast inflation rate refers to a 2.5% uplift from the previous year in line with the RBA 10 year forecast of inflation (as cited by IPART in their 'Calculating the inflation adjustment for the WACC' review 2015). In places where we have referred to values sourced from ACCC financial models and documents, we have applied the inflation rate used by the ACCC in those models and documents (e.g. forecast

2.2 What our pricing proposal does not apply to

This proposal does not cover pricing for the provision of services to Greater Sydney and for WAMC functions to be transferred from DPI Water to WaterNSW.

2.2.1 Greater Sydney

Pricing for these services is subject to determination by IPART as part of its Review of prices for WaterNSW for the 4 year period from 1 July 2016 to 30 June 2020. IPART's Final Report, *Review of prices for WaterNSW*, was released on 14 June 2016.

2.2.2 WAMC functions

On 31 May 2016 the *Water NSW Amendment (Staff Transfers) Bill 2016* passed the NSW Parliament, facilitating the transfer of employees of DPI Water to Water NSW. Their transfer is part of enabling WaterNSW to carry out functions of WAMC in relation to delivering water, all customer transactional dealings, all in-field services and resource management for groundwater and surface water.

IPART, as part of its "*Review of prices for the Water Administration Ministerial Corporation*" [9], has determined prices that WAMC can charge for water management services which are currently delivered on its behalf by DPI Water. New prices for a four year period will commence on 1 July 2016.

We will bill our customers for all WAMC functions (including those still to be supplied by DPI Water) at the IPART determined prices. However, to provide greater transparency to our customers, we will request IPART to endorse separate DPI Water and WaterNSW prices for WAMC functions. We note that there will be no double dipping of charges from customers.

2.3 Regulatory determination period

The IPART Guidelines require WaterNSW to propose the length of the determination period that it is seeking and the reasons for this length. The IPART Guidelines suggest that in proposing a determination period, issues to consider include the following:

- the merits of aligning the determination period with those of related or comparable entities
- the level of certainty around expenditure and/or consumption forecasts (and, related to this, the extent, timing and pace of change likely in an industry)
- the incentives created for the regulated agency to increase efficiency
- the need for regulatory certainty
- the cost of the determination process, and
- other costs and benefits associated with shorter or longer determination periods.

Under the ACCC Pricing Principles for infrastructure operators that are regulated under the rules when the rules commence, the first regulatory period is three years and all subsequent regulatory periods are four years.[10] Accordingly, we are required to propose a four year regulatory period for the nine valleys in the MDB, and customers in the Fish River Scheme (other than Oberon and Lithgow councils). We are also proposing a four year regulatory period for the three coastal valleys and Oberon and Lithgow councils. Aligning the regulatory period for all the rural valleys

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inflation of 2.55%, or March to March actual inflation in the relevant year depending on the context). In some cases, we have deviated from IPART's pricing submission checklist, for example:

- this submission outlines 4 years of future operating/capital expenditure instead of 5 years;
- proposed tariffs for each monopoly service are set out in nominal terms instead of real terms.

However, in such cases, we have provided the required information to IPART in our response to their 'Special Information Request' template. Further, we note that, in some tables the totals column for actual data is set out in nominal values. In these cases, we have described our assumptions with respect to inflation as part of the table.

[9] IPART, Review of prices for the Water Administration Ministerial Corporation from 1 July 2016, Final Report, June 2016.

[10] ACCC 2011, WCIR pricing principles— July 2011, p. 12.

will allow for synergies and economies in producing operating and capital forecasts, consumption forecasts and other information required by IPART.

As WaterNSW is still consolidating its business after its creation on 1 January 2015 from the former State Water and the former Sydney Catchment Authority, four years offers a reasonable period to provide certainty around expenditure and/or consumption forecasts. It also provides a reasonable period for passing on efficiency gains that are expected from the restructuring program now underway (which will include staff transferring from DPI Water from 1 July 2016).

We believe that a four year regulatory determination period for the rural water services will achieve a reasonable balance between providing incentives to pursue efficiency gains and passing on forecast efficiency gains. A four year period will minimise regulatory cost and provide a reasonable level of regulatory certainty. It is consistent with the ACCC Pricing Principles.

2.4 Annual price review process

WaterNSW supports continuing the current approach of annual price reviews.

The WCIR (Division 3) provide for the annual review of regulated charges for second or subsequent years of a regulatory period following an application by the infrastructure operator.

The application by the operator must include forecasts of demand for infrastructure services the year to which the application relates; an estimate of demand for the current year; the method for calculating estimates and forecasts; and proposed regulated charges in respect of the year to which the application relates.

The WCIR allows the regulator to determine regulated charges that vary from the original determination to the extent one or both of the following tests are satisfied:

- it is reasonably necessary to vary the charges, having regard to changes in the demand or consumption forecasts submitted in the application (the 'change in forecasts' variation test)
- it is reasonably necessary to vary the charges, having regard to price stability (the 'price stability' test).

In the 2014 determination, the ACCC determined charges for 2014-15 and included a formula to calculate charges for 2015-16 and 2016-17. Following applications by WaterNSW, the ACCC made determinations for WaterNSW annual prices in June 2015 and May 2016.

The current approach provides a reasonable balance between managing changes in the 20 year rolling average of usage (see section 5.4.1 below) and price stability for customers. It also allows for interstate trade (allocation assignments) to be taken into account in calculating prices (see section 17.2 below).

2.5 Services subject to this pricing proposal

The services subject to this pricing proposal under the Water Act 2007 (Cth) are for the storage and delivery of bulk water and the making available of water (amongst other things) as provided under the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004* and section 4 of the IPART Act.

Therefore, the regulated charges that are subject to this pricing proposal are the infrastructure charges for bulk water services to MDB valleys, coastal valleys and Fish River Scheme. These charges are outlined in section 7 of this pricing submission.

The regulated charges also include separate charges to access WaterNSW's water service infrastructure such as metering service charges (discussed in section 16) and the following miscellaneous charges (discussed in section 17):

- Trade processing charge
- Environmental gauging station charge
- Refundable meter accuracy deposit for verification and testing in situ
- Refundable meter accuracy deposit for laboratory verification and testing
- Fish River connection and disconnection charges.

We have proposed separate prices for these services in this pricing proposal.

Water service charges in relation to the pass through of uncontrollable costs are discussed in section 20 of this pricing proposal.

2.6 Form of price control

The current form of price control applying to MDB valleys infrastructure charges is a hybrid price cap and revenue cap introduced by the ACCC in the *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17, June 2014* (the ACCC 2014 Decision). The ACCC determined that for most of the valleys, WaterNSW would recover 40 percent of its revenue from fixed charges and 60 percent from variable charges, together with the introduction of an unders-and-overs mechanism (UOM). The ACCC stated "*[t]he hybrid from of control will allow for a partial rather than full adjustment to prices each year to account for the difference between actual and target revenue*." [11]

The ACCC determined the regulated prices for 2014-15 and included a formula to calculate prices for 2015-16 and 2016-17 through annual price reviews which updated prices for inflation, changes in forecast usage and the operation of the UOM. As agreed with our customers, we propose the continuation of the hybrid form of price control with the UOM and annual price reviews. However, we are also proposing an additional mechanism to manage revenue volatility. We discuss this further in section 6.

2.7 Building block approach

We support the continued use of the building block approach to develop our target revenue allowance. We have prepared our proposed revenue allowance using the building block approach including:

- forecast operating expenditure allowance
- forecast capital cost requirements based on:
    - forecast capital expenditure allowance to be rolled into the regulatory asset base (RAB)
    - applying an appropriate WACC to the RAB
    - regulatory depreciation.
- tax allowance, and
- working capital allowance.

In addition to these costs, we propose to add to the building blocks:

- the carry-over of the UOM allowance
- the cost of a mechanism to address revenue volatility, and
- irrigation corporations and districts (ICD) rebates for volume purchases.

Our proposed allowances for the building block components are presented in section 11.

2.8 Efficiency carryover mechanism

The current form of regulation applying to WaterNSW allows it to keep any benefits resulting from cost savings during the regulatory period. IPART has acknowledged that a shortcoming of the current regulatory approach is that, to the extent there are opportunities to make permanent efficiency savings, the financial reward to the business for achieving these savings deteriorates over the regulatory period[12]. Businesses can have an incentive to delay savings from the latter years of one regulatory period to the early years of the next regulatory period[13].

[11] The ACCC 2014 Decision, page 22.
[12] IPART 'Review of prices for WaterNSW From 1 July 2016 to 30 June 2020' Final Report, June 2016, p.63
[13] Ibid.

In its recent decision for the prices of WaterNSW's Greater Sydney services, IPART proposed the establishment of an efficiency carryover mechanism (ECM) to apply to WaterNSW's operating expenditure. The ECM would apply for WaterNSW's 2020 price review, applying to three years of historical expenditure: 2016-17, 2017-18 and 2018-19.[14] The main features of IPART's proposed ECM is that it is asymmetric with:

- permanent cost increases are held by the business until the next price review and if determined to be efficient, passed on to customers;
- temporary increases in costs are retained by the business;
- temporary reductions in costs are retained by the business;
- permanent decreases in costs are retained for 4 years – then passed on to customers.

We consider however that there is scope for improvement in the strength of incentives under IPART's proposed approach and suggest that IPART consider ways to enhance the ECM before it is finally implemented[15].

As the form of the ECM and any reporting requirements have not been finally settled with IPART for Greater Sydney, we propose to continue to work with IPART during the forthcoming determination period for Greater Sydney to achieve this greater clarity. As this evolves, we will consult with our rural customers on the suitability of an ECM for our rural bulk water services.

2.9 Murray-Darling Basin Authority and Border Rivers Commission

The Murray-Darling Basin Authority (MDBA) and the Dumaresq-Barwon Border River Commission (BRC) undertake certain water and infrastructure management functions within the Border, Murray and Murrumbidgee valleys. The MDBA and BRC are cross-jurisdictional bodies that co-ordinate and manage water resource management activities from a 'whole of system' perspective where more than one State is involved.

For example, for the MDBA, these include activities such as monitoring water quality, managing ground water, monitoring bores and developing/implementing salinity mitigation strategies and implementing the Basin Plan - a strategic plan for the integrated and sustainable management of water resources in the MDB.

The costs of managing and maintaining assets under the MDBA's and BRC's arrangements are jointly paid for by the signatory States. The costs are then allocated to each State in a proportion defined under the terms of the agreement. The NSW Government pays the NSW share of these costs to the MDBA and the BRC.

The NSW Government has in the past directed WaterNSW to collect a certain proportion of the MDBA and BRC charges from our customers. We have been advised by DPI Water of the maximum charges the NSW Government requires us to collect during the 2017-2021 determination period.

Accordingly, WaterNSW has included these charges in the cost information it has submitted so that these charges can be recovered as a pass through from customers. WaterNSW currently receives no revenue for collecting these revenues on behalf of Government. We anticipate receiving a direction from the NSW Government after we have submitted this proposal. We will forward the direction to IPART for its information once we receive it.[16]

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[14] Ibid, page 62. At page 67, IPART notes that its expression of intent to adopt an ECM as outlined in its report does not bind a future IPART Tribunal to adopt such a mechanism, which could remove, amend, or replace the ECM.

[15] See WaterNSW letter to IPART dated 18 April 2016 in response to IPART's '*Review of prices for WaterNSW From 1 July 2016 to 30 June 2020*' Draft Report, March 2016, at http://www.ipart.nsw.gov.au/files/sharedassets/website/shared_files/pricing_reviews_-_water_services_-_metro_water_-_submissions_-_sydney_catchment_authority_-_pricing_investigation_commencing_from_1_july_2016_-_draft_report/online_submission_-_waternsw_-_d._harris_-_18_apr_2016_150125184.pdf

[16] If the amount to be recovered from customers in the direction is less than the amount in our proposal, our proposal will be adjusted accordingly.

3. Engaging customers in developing our proposal

3.1 Customer consultation

WaterNSW is committed to meaningful engagement with its customers and stakeholders.

In line with our refreshed approach to our customers overall, in developing our pricing proposal we engaged in extensive consultation with key stakeholders including WaterNSW Customer Service Committees (CSCs) [17], nominated leads from each of our CSCs (the CSC Reference Group), the Fish River Customer Council, the NSW Irrigators Council, the NSW Office of Environment & Heritage, Commonwealth Environmental Water Office and other large customers. Our consultation involved face-to-face meetings with customers where we presented information and sought direct feedback from our customers.

Through the consultation we provided our customers with our proposals, latest analysis, to discuss impacts and seek increased customer involvement and input into developing key parts of our pricing proposal. We did this by initially asking customers to identify issues to consult on, presenting the impacts of the previous determination on both WaterNSW and our customers and our preliminary thinking on our potential pricing structures and other matters and ways to manage revenue volatility. Customers provided feedback on our issues and their own issues that they wanted us to consider for this pricing proposal and over the longer term.

We presented information about the regulatory framework to help our customers, better understand the process to enable them to engage more effectively with it and with a view to ensuring a more informed and effective regulatory process. We also provided an outline of the Government's key drivers for water market reform and the intended benefits to customers, that is, a desire to move away from a monopolistic asset driven market to one that places an increased focus on customers, customer responsiveness and commercial thinking.

WaterNSW established an "Issues and Insights Register" to record the matters raised in each of the consultation meetings and a dedicated email address for customer feedback and questions. Minutes of each meeting were distributed to the stakeholders after each meeting. Throughout the program we responded to information requests from customers.

Customer response to our refreshed consultation program and approach has been strongly positive. Customers have committed their time and energies engaging actively and constructively in meetings. Additionally, customers have expressed their appreciation for our significantly changed approach including in numerous meetings requesting that recognition and appreciation be minuted. The CSC Reference Group moved a vote of thanks to WaterNSW for their excellent customer consultation during the Rural Pricing Determination 2017-2020.[18]

There were several topics that customers sought further and iterative information from us including proposed pricing structures and suggested ways to manage revenue volatility faced by WaterNSW. The feedback from customers was directly considered in forming our proposed prices.

In the following sections we have summarised:

- the five key phases of the consultation program
- information presented to customers
- feedback from customers
- influence of customer feedback on our proposal.

Our customer consultation process reflects a new approach to developing our pricing proposal that has resulted in a better informed customer and a pricing proposal that is substantially agreed with our customer base and better reflects their preferences.

[17] The CSCs were established in 1999 and provide a forum for us to engage in customer consultation on a range of matters (as discussed in section 19.3.3).
[18] CSC Reference Group 29 April 2016: Motion M1604.01: Moved: Peter Gray: Seconded: All Committee.

While our customer engagement process has been widely acknowledged as a very positive step, there remain a small number of matters on which we may not agree. We identify these in this proposal. We will continue to consult with customers after we submit our proposal to see if better outcomes can be agreed.

3.2 How our customers have influenced our pricing proposal

The consultation process has had a significant impact on our proposed pricing strategy and pricing structures. This has resulted in our support of customers continuing with their current fixed variable pricing structures, predominantly 40:60, other than for the Fish River. We also received feedback that customers were interested in having greater choice in selecting their fixed:variable pricing structure at an individual customer level. Whilst we cannot deliver that choice now, we aim to deliver it for our 2021 determination proposal.

However, enabling choice at the valley level is a critical first step which we offered to our customers. The ability for WaterNSW to be able to recover costs associated with greater choice at the valley level will enable choice at the individual customer level for future determination periods.

The UOM is supported by customers and we propose to continue the UOM. However, it does not allow us to adequately manage nor compensate us for revenue volatility and creates additional costs for us and therefore our customers. We propose a mechanism to manage revenue volatility which is discussed in more detail in section 6.

A summary of customer consultations is presented in Table 1 below.

Table 1 Influence of customer consultation on our proposed prices

Our customers told us	Our response
They made informed decisions and nominated their preferred fixed variable pricing structures at the Valley level	We propose to offer the customer preferred pricing structures to all valleys except Fish River
They want the UOM to continue	We propose to continue implementing the UOM but with a mechanism to manage the revenue volatility associated with higher variable tariffs
They (and we) want to explore the pros and cons of clearing the UOM balance sooner	We examined this option and could not come up with a workable solution but we have committed to keep working on this issue with our customers
They do not support the costs of a mechanism to manage revenue volatility	We maintain that a mechanism to manage revenue volatility is necessary (as is recovery of those costs) and critical both to enable the current low level of fixed component and if we are to move to individual customer choice of tariffs

3.3 Phases of consultation program

The consultation program involves five phases commencing outlined in Table 2 below.

Table 2 Phases of customer consulation program

Phase	Activity	Status
Phase 1 - Initiation **November to December 2015**	Establish CSC pricing reference group Agree key matters and principles	Supported
Phase 2 - Current arrangements and impacts **January to March 2016**	Key customer representatives provided with necessary background knowledge to enable them to assess	Customers ready for informed review, analysis and feedback on pricing options presented in following phase.

	pricing information and analysis for feedback in following phase Information presented on regulatory framework, current pricing structures, UOM, transfer of DPI water functions Presented impacts of pricing structures on revenue volatility. Proposed introduction of volatility mechanism	
Phase 3 - Presenting pricing information and analysis **April to June 2016**	On 18th April released information pack with draft prices for each valley. Presented benefits of water reforms On April 29, presented summary of Insights and Issues Register based on customer feedback throughout engagement process. Discussed revenue recovery and Capital Investment Plan. Customers provided feedback on preferred tariff structure by valley and UOM preferences	Feedback sought from customers on tariff structure and UOM preferences
Phase 4 - Ongoing consultation **July 2016 to June 2017**	Continue customer consultation Engage in IPART public consultation process on our proposal, public submissions and draft determination	Continue to seek feedback
Phase 5 - Post determination consultation **June 2017 onwards**	Explaining the determination to customers Deliver on past submission commitments Recommence consultation process for subsequent determination period	

A brief description of consultation in each of the phases to date is presented below.

3.3.1 Phase 1 Initiation – November to December 2015

To assist us plan the consultation process we established the CSC Reference Group comprising nominated leads from each of our CSCs in November 2015.

We outlined the regulatory process including pricing submission timings, principles and consultation process. Customer response to this significantly changed approach and enthusiastic endorsement of it was received in the CSC Reference Group forums and individual CSCs.

The CSC Reference Group provided input for the 2017 pricing proposal consultation process including:

- key themes and matters of importance
- the package of information to present during consultation
- issues to consult on
- how to conduct the consultation process.
- pricing matters that would not change.

The CSC Reference Group requested that WaterNSW model and present on pricing matters such as fixed and variable tariff structures by valley, government and user cost share, the impact of merger benefits of the former State Water Corporation and the former Sydney Catchment Authority and assurance of no “double dipping” of future potential transfer of WAMC functions between DPI Water and WaterNSW.

The CSC Reference Group and WaterNSW discussed a number of matters for consideration during the next determination period and beyond. These are outlined in section 4.

3.3.2 Phase 2 Current arrangements and impacts of pricing structures – January to March 2016

In March 2016, WaterNSW held pricing consultation meetings for each of the CSCs, Fish River Customer Council, the NSW Irrigators Council, NSW Office Environment & Heritage, Commonwealth Environmental Water Office and other large customers.

The information presented included information on matters raised by the CSC Reference Group including an explanation of the building block methodology; the proportion of annual revenue requirements paid by water users and government; other issues agreed by the CSC Reference Group to date; and potential transfer of any delegated WAMC functions to WaterNSW.

Key matters for consultation at the meeting included:

- tariff structures and the analysis showing different fixed to variable splits
- impact of the UOM[19]
- proposing the introduction of a mechanism to address WaterNSW revenue volatility
- historical allocation rates by valley
- illustration of total costs to customers in two different valleys and all valleys over 20 years under various fixed to variable pricing structures (40:60 and 80:20 with and without the UOM).

WaterNSW presented detailed valley based analysis of long term impacts (20 years) on customer costs of applying different fixed to variable pricing structures with and without the UOM for each of the valleys. Our analysis demonstrated that for all valleys the current 40:60 price structure with the current UOM provides some customer cash flow benefit through temporal alignment of higher charges during times of high resource availability and vice versa, but is:

- causing over recovery of regulated revenue (ie customers paying more that regulated revenue)
- increasing volatility of WaterNSW revenues.

A key discussion point was, despite common perceptions, the UOM does not address WaterNSW's revenue volatility issues and therefore we proposed options to address the associated risk.

Our key message was that the current fixed to variable price structure provides some customer cash flow benefit but at a cost. We sought feedback on the level and structure of prices and customer preferences.

We informed customers that all modelling was based on draft budgets and proposals. We indicated that draft prices would be available in mid-April for review and comment by 29 April 2016.

3.3.3 Phase 3 Presenting pricing information and analysis – April to June 2016

3.3.3.1 Release of draft proposed prices

On 18 April customer stakeholders were presented with a package of information of draft proposed prices for each valley.[20] The draft prices we presented to customers are set out in Appendix A.

[19] MDB valleys have a UOM but coastal valleys (Hunter, North Coast and South Coast) do not.
[20] The prices were presented as draft subject to finalisation of WaterNSW budget process. Prices did not include MDBA or BRC pass through charges; costs for WAMC functions carried out by DPI Water; or costs for WAMC functions that may in the future be carried out by WaterNSW rather than DPI Water.

Benefits of reform

We indicated that the revenue requirement for bulk water service prices was lower in most valleys compared to 2016-17 – the last year of the current determination. The draft revenue requirements were used to calculate draft prices for each of the valleys.[21]

As a result we indicated that under the draft proposed prices, WaterNSW's rural customers would receive on average a bill reduction of 5 per cent for bulk water services charges.[22]

This reduction came from total operating expenditure for 2016-17 that was 22 per cent lower than 2013-14 actuals and 24 per cent lower than combined pre-merger forecasts. We indicated that total WaterNSW operating expenditure beyond 2016-17 is forecast to continue to decline in real terms.

We presented the draft revenue requirements which were used to calculate the prices. We outlined the Capital Investment Plan that was a key input into the revenue requirements. Our key strategy for the Capital Investment Plan is to maintain existing assets rather than build new assets. (We discuss this approach in section 13). Therefore, we indicated capital expenditure was deferred to later financial years compared to the 2015-16 Statement of Corporate Intent with renewals and replacement the largest category of capital expenditure over the next determination period. The cost savings were allocated using IPART's methodology: [23]

- 45 per cent to the rural areas
- 55 per cent to the Greater Sydney area.

Higher variable prices structures

At the request of the CSC Reference Group, WaterNSW prepared and presented analysis of tariff structures where the variable component exceeds the current maximum 60 per cent. We made clear that given the financial risks to WaterNSW that would result from variable tariffs higher than 60 per cent we would not be prepared to propose such structures unless we were able to pass on the resulting risk of volatility of revenues to a third party.

We informed customers that WaterNSW was testing the market for a price from third parties for this type of revenue volatility risk 'insurance' product.

We sought feedback from customers on these issues.

Customer feedback

Following the mid-April presentations, we held feedback sessions with nine valley CSCs, the Fish River Customer Council and nine key customers and customer representatives. The effort that went into these meetings was appreciated by our customers.

The feedback we received, though positive, was that customers wanted more information on the following issues:

- Costs:
    - of revenue volatility
    - the capital investment approach
    - confirm building block and UOM functionality
- Indications of preferred tariff structures:
    - contemplate trade impacts of differential fixed/variable splits between valleys
- How prices are derived from costs:

[21] These figures have since been finalised and our final proposed prices are slightly different from the draft proposed prices. Reference http://www.waternsw.com.au/__data/assets/pdf_file/0003/71985/WaterNSW-Rural-Pricing-Determination-2017-21-DRAFT-PRICES-RELEASE-18-04-16-BORDER-Valley-Pack.pdf. Also see Appendix A

[22] This is outlined in our presentation. See Appendix A. The analysis was based on 'typical customer' example of 500ML entitlement per user. The example of a typical customer was used by the ACCC in ACCC 2013, *ACCC Final Decision on State Water Pricing Application: 2014–15 —2016–17,* June 2014, p. 8.

[23] IPART 2016, Review of prices for WaterNSW from 1 July 2016 to 30 June 2020, Water — Draft Report, March 2016. P. 21. (Draft decision for Greater Sydney).

- Comparable current customer bill prices.

Capital Investment Plan

In response to this feedback, we presented information on our proposed Capital Investment Plan. We explained that the Plan is different from previous years because:

- approval is not being sought from the pricing regulator for individual renewal and replacement (R&R) projects over the determination period; rather
- a prudent, efficient and sustainable level of expenditure for R&R will be proposed for each valley based upon predicted asset condition, risks and operational concerns.

We explained that the intent of this change is to ensure that an adequate level of funding is available to offset asset consumption; whilst providing WaterNSW the flexibility to enact a risk based approach and reprioritise projects within a valley, based upon need and risk.

The underlying reason for this change is to manage issues which typically arise towards the end of the determination period, where emergent needs and changed operational priorities arise. See section 13.5.1 below for further information on our new approach to capital planning.

Ongoing dialogue

From May to June, WaterNSW continued discussions and follow up with our customers as required. We sought to continually clarify feedback from the April information pack. In particular we were interested in the responses to the proposals allowing for customer choice about the level and structure of prices and customer preferences. The ongoing dialogue with customers helped us to refine key aspects of our pricing proposal.

We conducted a meeting with the CSC Reference Group on 24 May which touched on the following topics:

- UOM acceleration
- our capex and impact on the user:government share
- the transfer of WAMC functions from DPI Water
- bill transparency and itemised billing, and
- meter charges, their potential restructure, and compliance activity.

We reiterated these messages through a series of individual CSC meetings throughout June.

In mid-June we presented customers with a summary of our final pricing proposal.

3.3.4 Phase 4 Ongoing consultation – July 2016 to June 2017

After lodging our proposal with IPART, we intend to continue to consult and discuss our proposal with the CSC Reference Group and other stakeholders as part of our ongoing approach to customer engagement. The intention is to assist our customers to understand what we have finally proposed for them to prepare their comments to IPART.

We understand that IPART intends to hold public forums during October 2016.

WaterNSW will be attending the forums to be available to address any issues that may arise.

3.3.5 Phase 5 Post-determination consultation

After IPART has made its pricing determination we will consult with customers about the decision. We will present the results of the pricing determination to our customers. This will commence prior to the determination taking effect on 1 July 2017. We will also work on issues identified for action during the determination period, including extensive consultation with our customers.

3.4 Major topics of consultation

There were several key issues that emerged from the consultation process.

3.4.1 Tariff structures and UOM

3.4.1.1 The issue

An important matter raised with customers was the impact of the current pricing structure and the UOM on WaterNSW revenue volatility.

We recapped that the current 40:60 fixed to variable pricing structure was introduced in 2005[24] to correlate customer water costs with their revenue/ability to pay. The UOM was implemented by the ACCC 2014 Decision to allow WaterNSW to:

- when usage is less than forecast and we under recovered revenue, recover a return (WACC) on the under recovered revenue, and
- when usage is greater than forecast and we over recover revenue, provide a return (WACC) to customers on the excess regulated revenue.

We expressed concerns that the:

- 40:60 structure leads to higher WaterNSW revenue risk as recovery is over the long-term
- 40:60 structure and the UOM does not keep pace with year-to-year usage fluctuations
- revenue risks under 40:60 are material with added risk of the UOM balances blowing out if recovery from usage fluctuates / under-recovers
- revenue risk mitigants under the 40:60 structure will lead to higher costs for customers.

Customers were presented with analysis about the pricing structures that showed:

- the current 40:60 tariff structure provides some customer cash flow (correlation) benefits however is causing over recovery of regulated revenue (ie. customers overpaying) and is increasing volatility of WaterNSW revenues, which increases WaterNSW cost of funding - which needs to be met by customers
- long term analysis on customer costs if different splits of fixed to variable charges are applied.

We presented that the UOM was introduced to address under and over recovery of allowed regulated revenues but does not address volatility and the associated risks for WaterNSW. Under an 80:20 pricing structure, the UOM balance and revenue risk largely disappear. Therefore we proposed two options to mitigate this revenue risk:

1. change the price structure to higher fixed component in order to reduce volatility; or
2. pass through the cost to mitigate the risk of volatility (e.g. insurance) (discussed below).

We specifically sought feedback from customers on:

- preferred tariff structure for each valley
- confirmation by each valley CSC that they want to retain the UOM.

3.4.1.2 Customer feedback

All of our valley based customers told us that they wanted to retain their current price structure (which in the majority of cases is 40:60 with the UOM) with the knowledge of the modelling provided to them. Customers preferred to have a higher proportion of variable relative to fixed component because they valued the correlation between income and outgoings (ie. water charges).

We note that during one of the individual CSC meetings held in June, one of the valleys (Lachlan) indicated a preference to move to an 80:20 fixed:variable pricing structure. The CSC indicated

[24] IPART restructured charges to recover 40:60 fixed:variable by 2009/10, except for the North Coast and Hunter valleys where usage charges were set to recover 40 per cent of revenue by 2009/10. Refer to IPART 2006, *Bulk Water Prices for State Water Corporation and Water Administration Ministerial Corporation Water – Report,* September 2006, p. 105.

that any such move would still require broader consultation across customers in the valley which may occur during IPART's formal determination process.

3.4.2 Managing revenue volatility

3.4.2.1 The issue

A key matter for consultation was managing revenue volatility as a result of pricing structures that do not reflect our cost structure, which is largely fixed.

We addressed the misconception that the UOM is a substitute for managing volatility. The UOM does dampen volatility by a small amount (e.g. 7 per cent) which means that the majority of revenue volatility remains unrecovered.

We explained that the WCIR (r.6.3) allows for volatility risk recovery. We noted that IPART had allowed a $2.2 million per annum volatility allowance during 2010-2014 determination period.

Further we noted that we were unable to identify any other utility offering tariff structures at less than 40 per cent fixed.[25]

We presented customers with the costs of managing volatility based on the IPART volatility allowance used in the 2010-2014 determination period although with an anticipated market based WACC of 15 per cent. These costs were indicative / illustrative in the absence of a firm price being received from a third party to provide WaterNSW with a revenue insurance product.

We acknowledge that customers nominated their existing fixed to variable splits (predominately 40:60), while expressing an interest in increased customer choice. Therefore our proposal is framed to reflect this customer choice and to maintain the existing splits (other than for the Fish River Scheme) subject to the implementation of a mechanism to manage volatility such as through an insurance product.

We propose to implement an 80:20 split for the Fish River Scheme, this is discussed in section 6.8 .

Our customers had provided feedback that they wanted to clear balances in the UOM that were positive to them sooner. As WaterNSW is a fixed cost business logically our preference is to recover as close to the regulated revenue allowance each financial year and hence we also want to clear the balance of the UOM sooner. We provided our customers with analysis of the impact of clearing UOM balances sooner by preparing analysis comparing the current UOM approach with a 20 year averaging period to:

- Return Option - depreciation of UOM balance at 10% per year
- Rolling Average Option - rolling average reduced to 10 years.

We found that compared to the current method, the options do not necessarily guarantee a smaller balance. There was a smaller positive balance pre-drought and a larger negative balance during the drought. The analysis showed that doing so did not provide either customers or WaterNSW with clear benefits.

3.4.2.2 Customer feedback

Customers did not support paying for a mechanism to manage revenue volatility at higher variable splits. Conversely, WaterNSW needs to manage higher volatility and this comes at a cost. Customers did acknowledge that their desire for greater customer choice may result in higher charges to facilitate that choice. In the end, we are proposing to include the costs of a mechanism to manage volatility as part of this proposal.

[25] In 2012, IPART commented that in Victoria, Southern Rural Water (SRW) estimated that its costs are approximately 90% fixed and 10% variable. In two of three SRW pricing districts, all costs are recovered through a fixed charge (ie. 100% fixed). In the third district, costs are recovered by a two-part tariff. The two-part tariff recovers approximately 80% of costs through the fixed charge and 20% variable charge. Refer to IPART 2012*, Review of Rural Water Charging Systems Water — Discussion Paper* June 2012, pp. 40-41.

4. Our Future Direction

4.1 Longer-term strategy

WaterNSW intends to become a more modern and efficient organisation with a focus on the needs of our customers. Our preparation for this pricing proposal enabled us to gain an appreciation of customer concerns and interests and to identify opportunities for further reform. Practicably, not all of the identified issues were able to be captured in our initial pricing proposal.

4.2 Future issues initially agreed with our customers

Early on we identified four issues that would not be capable for inclusion in this pricing proposal. At the commencement of our customer consultation process and repeated at each round of the consultation, WaterNSW proposed that a number of matters be considered ahead of the next determination period (post 2021). These included:

- Legacy asset issues
- Government / water user share: see section 10.6 for more detail
- Levels of Service Customer Framework proposed for post 2021 regulatory period: see section 13.6 below for more details
- Capital underspend 'holding costs'.

4.3 Additional issues

In addition to the four issues above, there were a number of additional issues which arose throughout our consultation and preparation which we will explore in greater detail during the 2017-2021 determination period, in preparation for our proposal to be submitted in 2020.

4.3.1 Pricing flexibility

In particular, we are looking to introduce an approach that provides us greater flexibility to charge for services rather than infrastructure with a move towards a revenue cap form of regulation. Therefore, in addition to our customer levels of service framework, we will also seek to explore the following:

- whether we can enable individual customer choice to enable customer to select their fixed to variable tariff ratio (our customers have expressed an interest in this)
- greater customer segmentation, for example, whether for smaller customers we can move to minimum service charge similar to that charged to small customers by DPI Water
- greater transparency and segmentation of individual charge elements such as metering and gauging stations.

4.3.2 Structural issues

We will be engaging with our customers and the NSW Government, as appropriate, to work on resolving the structural issues which sees customers in the following valleys paying higher infrastructure charges than in other valleys: North and South Coast, Peel Valley and the Fish River Scheme (in this case including the appropriate service provider for different infrastructure components).

4.3.3 Efficiency Carryover Mechanism

As noted in section 2.8 above, we will continue to work with IPART and consult with customers on the implementation of an ECM.

4.3.4 Forecasting

We will examine whether there are better alternatives to the 20 year rolling average of water usage.

5. Customer pricing structure

5.1 Introduction

WaterNSW regulated revenues are recovered from charges to users and a cost sharing component from the NSW Government based on a methodology introduced by IPART in 2001 as set out in section 10.6.

The most significant charges to customers are bulk water services charges which are levied on an entitlement and usage basis. These are discussed in detail below. WaterNSW also levies water take service charges and other miscellaneous charges as set out in sections 16 and 17. In addition WaterNSW passes through to customers the MDBA and BRC costs which is set out in sections 2.9 and 20.1 and IPART determined prices for WAMC functions as set out above in section 2.2.2.

Our view is that the price setting mechanism should provide the best incentives for WaterNSW to operate efficiently, while permitting a fair revenue recovery, and limiting over recovery during the regulatory period. Some price setting mechanisms may be more or less suited to regulating a bulk water infrastructure provider like WaterNSW.

Factors we have considered in this pricing proposal include:

- customer feedback
- the impact on the stability of customer bills
- the allocation of water sales volume risk – this is particularly important due to exposure to climatic conditions and fluctuating water sales deliveries
- the ability to introduce new products or prices to customers individually or by category in response to customer demands or changing business needs, the aim of which is to improve on our products and offer new services that customers find attractive
- the incentives to reduce costs and encourage efficient behavior.

In line with the feedback we have received from customers, we are continuing with the approach adopted in previous pricing determinations, on this basis, we propose the current fixed variable splits with the UOM for most valleys and no UOM for the Hunter valley. The specific variations to this approach are discussed in section 6 below.

It is now possible for the UOM to be introduced for the Peel valley due to the Peel valley reaching full cost recovery (that is, the Peel does not receive a Government subsidy) for the determination period covered by this proposal. We recommend further consultation with customers in the Peel valley on this issue.

5.2 Continuation of general approach from previous determinations

5.2.1 Bulk water services charges

Historically, IPART and the ACCC have determined bulk water services charges at a ‘valley’ level to recover valley-based costs from customers. The border for each valley is defined by reference to a water management area, or a specified water source under a Water Sharing Plan (WSP) with some of these combined for pricing purposes.

Bulk water services charges are based on a separate fixed charge for general security (GS) and high security (HS) customers, together with a volumetric charge for all entitlement holders in each valley. An overview of HS and GS entitlements is set out in Box 1 below:

Box 1 High security and general security entitlements

A water access entitlement, such as a water licence, refers to an ongoing entitlement to exclusively access a share of water.

A water allocation refers to the specific volume of water that is allocated to water access entitlements in a given season.

Available Water Determinations (AWDs) are the means by which water is shared between access licences.

A customer's entitlement to water depends on the type of entitlement held by the customer. There are two types of entitlements subject to this pricing proposal:

- **High security entitlement**: this provides the holder with their full allocation of water (except in drought conditions) as determined each year according to market rules. High security water access entitlements are allocated water before general security entitlement holders. High security water entitlements are traditionally held by irrigators with permanent horticultural plantings. For pricing purposes Domestic and Stock entitlements are treated as high security. They provide the holder with the right to take water from a river which fronts their land or from an aquifer which is underlying their land and are held for normal household and garden purposes and/or for drinking water for stock. Domestic and stock entitlements are allocated before high security entitlement holders and, for pricing purposes, as high security entitlements

- **General security entitlement**: this provides the holder with an allocation of water that is subject to storage and demand circumstances. Allocations to high security entitlements have priority over general security entitlements. There is no guaranteed supply of water allocation for general security entitlements

Figure 6 below shows the cost allocation and tariff structure methodology which converts the user share of prudent and efficient costs into bulk water charges for most valleys, for a customer with a fixed to variable split of 40:60. In this example, 40 per cent of the revenue required is recovered through fixed charges which are levied for each share of water entitlement held by the customer.

There are two categories of fixed charges based on the reliability of the access licence, the GS fixed charge and the HS fixed charge. The price difference between the GS and HS fixed charge is based on the application of the HS reliability premium calculated using:

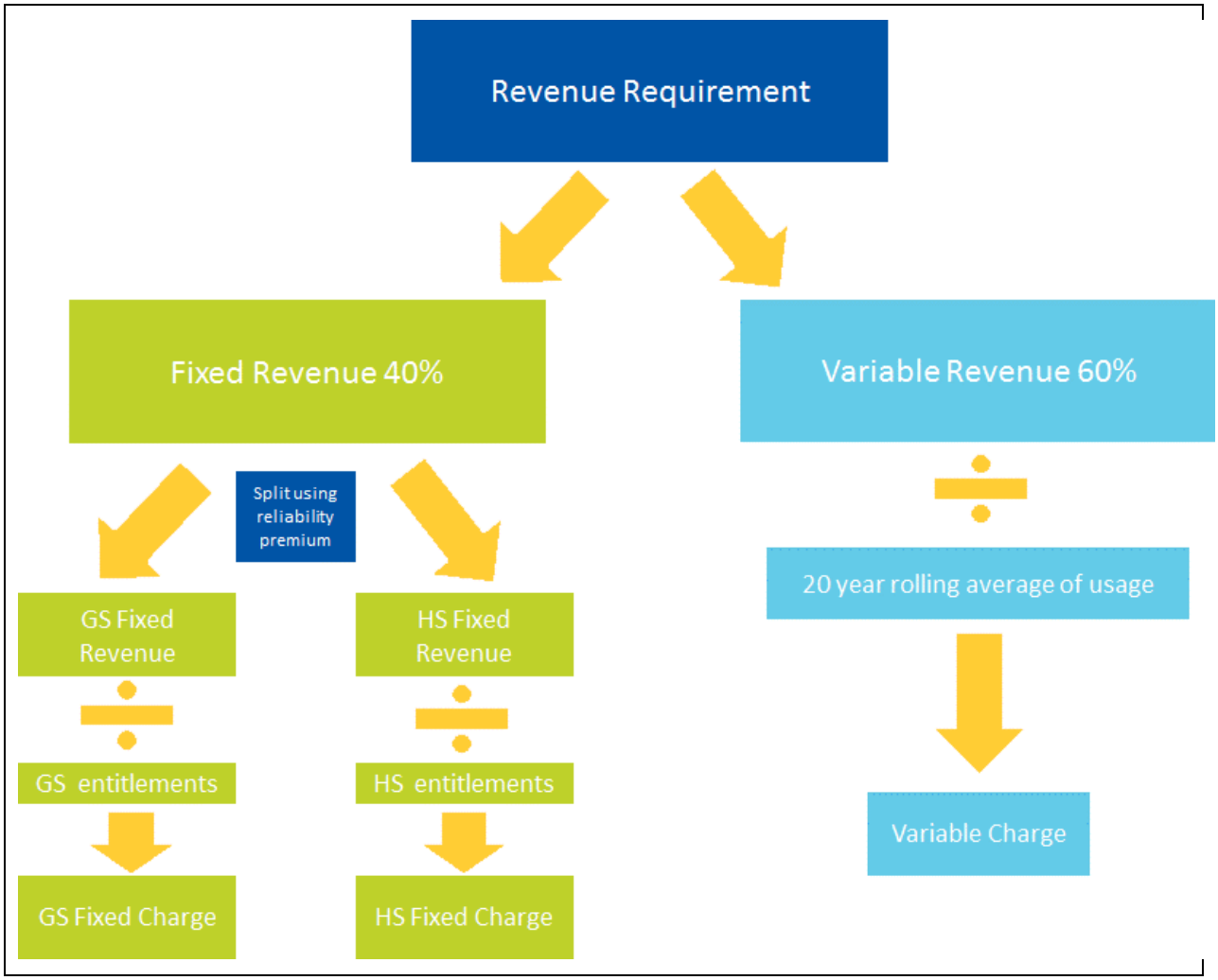
- the conversation factor of HS to GS entitlements in the relevant WSP; multiplied by
- a reliability ratio, which is the ratio of average GS to HS water allocations, over 20 years.

The fixed charges are calculated as follows:

1. Revenue is allocated to HS and GS customers using a HS premium. The HS premium is based on the reliability of (and conversion of) a HS entitlement to a GS entitlement. For example, if the HS premium is 3, then for each $1 of revenue allocated to a GS entitlement, $3 will be allocated to a HS entitlement
2. GS fixed revenue is divided by forecast GS entitlements held in the valley to calculate the GS fixed charge
3. HS fixed revenue is divided by forecast HS entitlements held in the valley to calculate the HS fixed charge.

See section 5.4 below for the actual inputs.

Figure 6 Overview of the cost allocation



The remaining 60 per cent of costs are allocated to volumetric revenue, which is divided by forecast water sales (the 20 year rolling average of water sales) to set the volumetric charge. The volumetric charge is levied for every ML of water used by the customer.

Under this approach, the recovery of 60 per cent of the user share of costs can vary in any given year. This is because actual water sales vary significantly year on year against the 20 year rolling average.

5.3 Exceptions

There are some exceptions to the broad structure described above which we adopt in this pricing proposal for the Fish River Scheme, the North and South Coast Valleys and Lowbidgee as set out below.

5.3.1 Fish River Scheme

In the ACCC 2014 Decision, the ACCC set bulk water services charges for one 'major' user — EnergyAustralia — and approximately 280 'minor' users. Users in the Fish River Scheme do not hold statutory water access entitlements with access to water regulated through a 'minimum annual quantity' (MAQ) for each major customer and (collectively) for minor customers. Access (fixed) charges are set with reference to major customers' actual MAQ and for each minor customer with reference to a deemed MAQ of 200KL. The ACCC 2014 Decision included different charges for raw and filtered water. For raw water, the ACCC 2014 Decision requires WaterNSW to recover 55 per cent of its revenue through fixed charges (access charges) and 45 per cent through variable charges (on the volume delivered). For filtered water, the ACCC's 2014

Determination requires WaterNSW to recover 60 per cent of its revenue through fixed charges (access charges) and 40 per cent through usage charges (on the volume delivered). We propose to change the fixed:variable share for both raw and filtered water to 80 per cent fixed, see section 6.8 below.

5.3.2 Coastal valley subsidies

In its 2010-14 Price Determination, IPART decided to limit price increases in the North Coast and South Coast valleys by 10 per cent per annum in real terms to mitigate the price impact that would result from an immediate shift to full cost recovery. IPART stated that the NSW Government will need to fund the revenue shortfall arising from the difference between the revenue recovered by WaterNSW through IPART determined charges and WaterNSW's prudent and efficient user share of costs. This was continued in the ACCC 2014 Decision. As advised to customers during our consultation, are proposing to continue with the 10 per cent per annum glide path increase and have written to DPI Water seeking to confirm continuation of the Government or Community Service Obligation (CSO) subsidies.

WaterNSW has calculated that it will require, on average an additional $0.4 million per annum in CSO subsidy payments from current levels ($1.1 million per annum) to recover on its forecast user share of revenue. This is despite the 10 per cent per annum glide path increase in recovered costs, due to declining customer numbers and average water sales in these valleys. The calculation of the new CSO payments and associated inputs are shown in the tables below.

Table 3 New CSO payments and associated inputs for North Coast Valley

North Coast (nominal $ $000s)	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
User share of revenue	855	1,040	1,054	1,105	1,132	4,330
Amount recovered from charges including 10% glide path	116	109	120	132	145	507
Subsidy	739	930	934	972	986	3,823
Step increase in subsidy from FY 17	n.a	191	195	233	248	n.a

Table 4 New CSO payments and associated inputs for South Coast Valley

South Coast (nominal $ $000s)	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
User share of revenue	753	890	893	935	971	3,688
Amount recovered from charges including 10% glide path	398	350	385	424	466	1,624
Subsidy	355	540	508	512	505	2,064
Step increase in subsidy from FY 17	n.a	185	153	157	150	n.a

* The tables above assume forecast inflation of 2.5 per cent per annum for 2017-18 to 2020-21. 2016-17 figures have been sourced from Table 12.18 of the IPART Review of bulk water charges for State Water Corporation 2010-2014 and escalated by actual CPI to 2013-14 in line with the IPART 2010-14 determination document and the CPI rates advised to WaterNSW by IPART each year.

We understand that customers in the Coastal Valleys are seeking structural changes to water pricing issues in their valleys. [26] We are committed to working with them going forward, for

[26] Peel valley customers face similar pricing pressures. For instance, charges in Peel valley for HS entitlements and usage are much higher than in other NSW valleys due to recovery of costs from relatively low volumes of entitlement and usage. Costs charged to users in the Peel valley are primarily for the operation of the Chaffey dam which is relatively small but many of the costs of operating a dam are relatively fixed regardless of size. In 2014, the ACCC implemented a 10 percent cap on real charge increases each year. The charges set out in the ACCC 2014 Decision resulted in a small under-recovery and Government subsidy in 2014-15 and 2015-16, but will move to full cost recovery

example, we are engaging in a trial of our levels of service concept with them as set out in section 13.6.

5.3.3 Lowbidgee

Customers in the Lowbidgee hold only supplementary licences which entitles them to water use when there is excess water in the Murrumbidgee valley. As a result, in the ACCC 2014 Decision, the ACCC levied a 100% fixed charge on customers in Lowbidgee. We propose the continuation of that charging structure.

5.4 Forecast sales volumes and number of entitlements

This section sets out the methodology and inputs to determine:

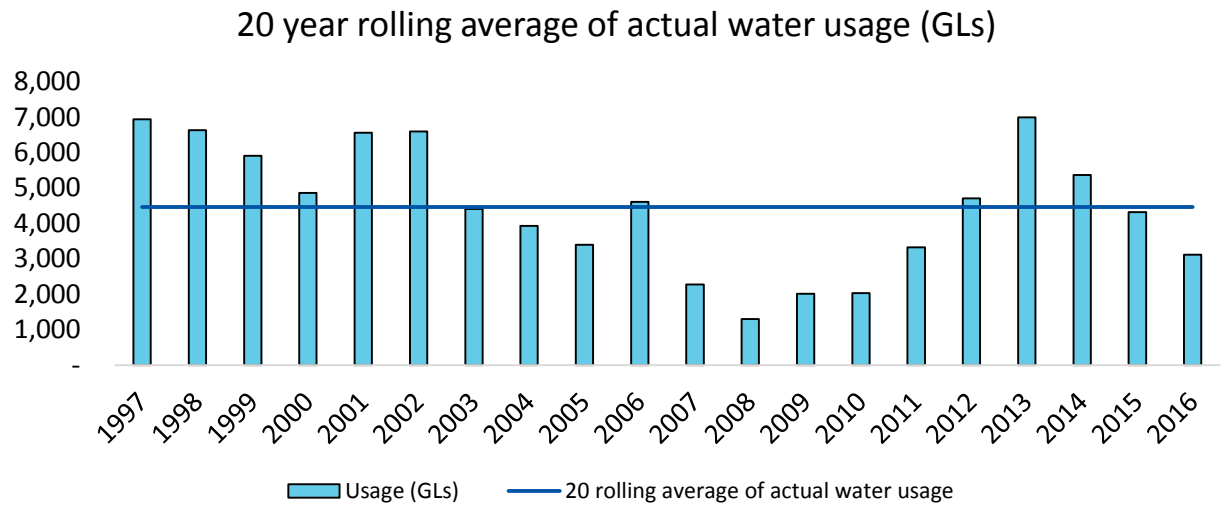
- the water sales forecast used to set the variable usage charge
- the HS premium used to determine the revenue split between GS and HS fixed entitlement charges, and
- the water entitlements used to set the fixed entitlement charges.

5.4.1 Water usage (sales) forecast used to set the variable usage charge

WaterNSW is proposing to retain the current forecasting methodology for water usage by using the 20 year rolling average of actual water sales. This method has been in place since the 2010-14 IPART price determination and was continued by the ACCC in its 2014-17 price determination.

The 20 year rolling average of actual water sales and underlying data is shown below in Figure 7.

Figure 7 20 year rolling average of actual water usage (GLs)



The rolling average was determined using water sales data for the 20 year period from 1996 to 2016, and includes a year-to-date forecast for the 2015-16 financial year. WaterNSW will update the 20 year rolling average with actual data for 2015-16 in time for the IPART final decision in June 2017. Actual data for 2016- 17 will not be available in time for IPART's decision.

We propose that the variable charges for the second and subsequent years of the 2017-21 determination period be adjusted in accordance with Part 6 Division 3 of the WCIR and using an updated rolling average with a lag as shown in the table below.

for 2016-17, with no subsidy required for this proposal. WaterNSW will continue to engage with our customers in the Peel Valley to find long-term solutions to pricing pressures.

Table 5 20 year rolling average lag

Year	20 year period from which to derive forecast water sales
2017-18	1996-97 to 2015-16
2018-19	1997-98 to 2016-17
2019-20	1998-99 to 2017-18
2020-21	1999-2000 to 2018-19

As demonstrated in Figure 7 above, the effect of retaining the 20 year rolling average is that the recovery of the variable proportion of WaterNSW's prudent and efficient user share of costs is not assured in any given year. This is because actual water sales vary significantly year-on-year against the 20 year rolling average of actual water usage.

The current averaging approach seems to strike an appropriate balance between ensuring sustainable revenue streams to WaterNSW over the long term while maintaining price stability for customers. Most importantly, during our consultation customers have expressed a preference to retain the current averaging approach.

WaterNSW is open to considering whether there is potential to improve the water sales methodology used to set the variable usage charge, on which we will consult, in the lead up to our 2021 pricing proposal.

5.4.2 Forecast sales by valley

Table 6 below sets out the forecast water sales by valley calculated using the 20 year rolling average of actual water sales, which is then used to set the variable usage charge for each rural valley.

The data includes water trade volumes resulting from temporary interstate trade allocation. This is because WaterNSW is proposing to continue the current practice of levying the variable usage charge at the point of trade for temporary interstate trade transactions. For more information see section 17.2 below.

Table 6 20 year rolling average of actual water usage (GLs) by valley

Valley	20 year rolling average of actual water usage (MLs)
Border	147,829
Gwydir	264,774
Namoi	168,133
Peel	11,291
Lachlan	205,079
Macquarie	258,621
Murray	1,537,145
Murrumbidgee	1,743,637
South Coast*	3,781
North Coast*	619
Hunter	123,211

Total	4,464,119

* for the North and South Coast valleys, we have used the rolling average of actual water usage from the previous 8 years due to data quality issues.

5.5 The high security premium

The HS premium is used to determine the revenue split between the HS and GS fixed entitlement charge and the extent of the premium paid by HS customers on their fixed entitlement charge. Table 7 below shows the inputs which determine the HS premium by valley.

Table 7 Calculation of high security premium

HS premium					
Valley	**WSP Ratio**		**Reliability Ratio**		**HS Premium**
Border	1.28	x	2.32	=	2.97
Gwydir	1.81	x	2.25	=	4.07
Namoi	1.25	x	1.72	=	2.15
Peel	6.73	x	1.47	=	9.88
Lachlan	2.45	x	1.65	=	4.03
Macquarie	1.88	x	1.96	=	3.69
Murray	1.25	x	1.41	=	1.76
Murrumbidgee	1.63	x	1.41	=	2.30
South Coast (Brogo) *	1.70	x	1.47	=	2.49
North Coast (Richmond) *	1.25	x	1.15	=	1.44
Hunter	3.00	x	1.03	=	3.09

Table excludes Lowbidgee, which consists of supplementary licence holders
* The HS and GS fixed entitlement charge has not been determined using the HS premium. WaterNSW has proposed to increase these charges by 10% per annum from the charges approved in the 2010-14 IPART review of bulk water charges for State Water Corporation.

5.6 Entitlement numbers

Forecast entitlements are used to set the HS and GS fixed entitlement charges. The entitlement figures have been sourced from WaterNSW's Water Accounting System which retains entitlement information as advised by DPI Water. The data is current as of January 2016.

As forecast entitlement numbers remain steady year on year, WaterNSW is proposing to carry forward its estimate of water entitlement numbers as of January 2016 for each year of the 2017-21 regulatory period.

The entitlement figures are shown in Table 8 below. Table 9 and Table 10 below outline, for the Fish River Scheme, the MAQs per customer and the number of minor customers respectively.

Table 8 Water entitlement numbers

Water entitlement numbers (ML)		
Valley	**General Security**	**High Security**
Border	263,238	3,122
Gwydir	511,609	26,840
Namoi	256,212	8,874
Peel	30,428	17,367
Lachlan	633,256	57,514
Macquarie	632,466	42,707
Murray	2,081,716	261,883
Murrumbidgee	2,267,963	438,331
Lowbidgee*	747,000	N/A
South Coast	13,946	1,175
North Coast	9,681	137
Hunter	138,109	70,408

Excludes supplementary licence holders, which do not attract the fixed entitlement charge, with the exception of Lowbidgee. * refers to supplementary licence holders

Table 9 Fish River Water Scheme – Minimum Annual Quantity (MAQ, per ML)

Fish River Water Scheme – Minimum Annual Quantity (MAQ, ML)	
Customer	**MAQ**
Bulk Raw Water	
EnergyAustralia	8,184
Sydney Catchment Authority	3,650
Oberon Council	1,064
Individual Minor Customers	200
Bulk Filtered Water	
Lithgow Council	1,778
Individual Minor Customers	200

Table 10 Fish River Water Scheme – Number of Minor Customers

Fish River Water Scheme – Number of Minor Customers	
Type of Minor Customer	**Number of Customers**
Bulk Raw Water	83
Bulk Filtered Water	216

6. Managing volatility and other differences from the current approach

6.1 Introduction

This section outlines the differences we propose to the current approach to customer tariff structures. This includes issues with the current approach to pricing which includes the UOM, why the UOM is not sufficient to manage revenue volatility and WaterNSW's proposal to address this issue. It also sets out our proposal for the Fish River Scheme.

6.2 Revenue volatility and the 'under and overs mechanism' (UOM)

Based on our preliminary analysis, a cost reflective tariff would be close to 100 per cent fixed. According to the ACCC Pricing Principles, regulated prices must be based on prudent and efficient costs (section 3.4) and the tariff structure:

> *must promote the economically efficient use of water infrastructure assets. In practice, this can be best achieved where the* ***fixed and variable components of a charge recover the fixed and variable costs of providing services****. (section 3.11).*

That is, our prices must reflect the underlying cost of the service we provide to our customers. Our fixed cost should be recovered through a fixed charge and our variable cost should be recovered under a variable usage charge.

As revenues change with usage but our fixed costs do not, WaterNSW is financially exposed to changes in usage. To compensate WaterNSW (then State Water) for revenue volatility, in the 2010-2014 regulatory period IPART included in State Water's revenue allowance a 'volatility allowance' calculated for each valley.

For the 2014 determination WaterNSW (then State Water) proposed an 80:20 fixed:variable structure to the ACCC to address the problem of revenue volatility. An 80:20 structure was proposed as it was more cost-reflective, more consistent with the tariff structures in other jurisdictions and gave State Water sufficient revenue stability to negate the need for a 'volatility allowance'.

In the ACCC 2014 Decision, the ACCC chose to continue with a 40:60 fixed:variable structure on the basis that this was consistent with customer preferences.The ACCC also chose not to re-introduce the volatility allowance. Rather, the ACCC introduced the UOM. The UOM is applied at a valley level in all MDB valleys with the exception of Lowbidgee where charges are fixed and Peel which has been subject to Government subsidies as it approached full cost recovery. It works as follows:

- For each valley, an overs-and-unders balance is calculated as the cumulative revenue shortfall or revenue surplus in the price path
- An allowance is calculated using the overs-and-unders balance multiplied by WaterNSW's WACC. If the balance contains revenue surplus, charges in the next year will be reduced by the allowance (the revenue surplus multiplied by the WACC). If the balance contains a revenue shortfall, charges in the next year will increase in proportion to the allowance (the revenue shortfall multiplied by the WACC).

6.3 Impact of the UOM

The lack of a cost-reflective tariff structure has resulted in WaterNSW substantially under-recovering the revenue requirement in most valleys since the beginning of the current regulatory period. Lower water availability has resulted in lower than average water usage in most MDB valleys. In the Fish River, water usage revenue has also fallen considerably due to the closure of an EnergyAustralia power station.

The under-recovery has led to a rise in the UOM balance in the valleys where the UOM applies. The accumulated under-recovery captured in the UOM balance is provided in Table 11 below.

Table 11: UOM balance by valley as at 1 July 2016 ($000s)

Valley	Current balance	UOM allowance	Per cent impact of UOM allowance on prices*
Border	-1,033	60	+4 %
Gwydir	-2,432	142	+3 %
Namoi	-3,039	177	+3 %
Lachlan	-1,705	99	+1 %
Macquarie	-5,376	313	+4 %
Murray	-672	39	+1 %
Murrumbidgee	-676	39	0 %
Fish River	-4,579	267	+3 %
Total	**-19,511**	**1,136**	

* Based on the UOM allowance as a proportion of the total smoothed revenue requirement in the 2016-17 financial year.
Note: The UOM does not operate in the valleys not listed (Peel, Lowbidgee, South Coast, North Coast and Hunter). The figures above have been sourced from WaterNSW's application to the ACCC 2016-17 Annual Review of Regulated Charges.[27]

Changes in the UOM balance lead to changes in the UOM allowance and changes in prices. An implication is that it is difficult to predict how prices will change in future periods. This is a concern for both customers and WaterNSW.

A more significant concern for WaterNSW is that over time the size of the UOM balance will continue to grow pushing up prices to potentially unsustainable levels. As shown in Table 11 above, 2016/17 prices are expected to be up to 4 per cent higher as a result of the UOM. In particular, WaterNSW is concerned a fall in the UOM balance over the longer term will lead to pressure to cap prices (in effect, requiring some of the UOM balance to be written off).

As noted recently by the ACCC, estimated water usage in 2015-16 was on average 33 per cent below that forecast, increasing WaterNSW's under-recovery, the effect on charges was restrained, partly due to the operation of the UOM. This is because the mechanism adds only a fraction of the accumulated under-recovery onto the revenue requirement for the following year.[28] This effect adds to revenue volatility for WaterNSW.

Using the last 20 years as a guide, usage revenue can fall in an individual year to less than 30 per cent of the long-term (i.e. 20-year average).[29] Furthermore, due to droughts low usage can persist. Had the UOM been in place over the preceding 20 years, the negative UOM balance would have reached $40 million , almost as much as the annual revenue requirement. Scenario analysis suggests this could increase to $105 million depending on the timing of when the UOM is introduced.

A compounding issue is that WaterNSW's cash flow requirement for ongoing capital expenditure is significant compared to its revenue — ongoing cash-flow required for capital expenditure will

[27] https://www.accc.gov.au/system/files/WaterNSW%20application%20to%20ACCC%20Annual%20Review%20of%20Regulated%20Charges%202016-17_0.pdf
[28] ACCC (2016) "WaterNSW Annual review of regulated charges: 2016-17 Final decision", May 2016, p. 4.
[29] In 2015-16, estimated water usage was on average 33 per cent below forecast as set out in WaterNSW's application to the ACCC for the 2016-17 annual review of its regulated charges.

be around 50 per cent of annual revenue.[30] An implication is that the volatility of revenues has potential to impact on WaterNSW's cost of financing of ongoing capital expenditure. Volatile cash-flows can impact on the timing of capital expenditure.

The UOM does not materially reduce revenue volatility or the accumulated under or over recovery of revenue. Figure 8 and Figure 9 below provide an indicative example over a 20 year period. The scenario applies the usage pattern of the last 20 years and 2016-17 bulk water services prices. Amounts are presented in real terms.

Figure 8 Impact of the UOM on revenue volatility

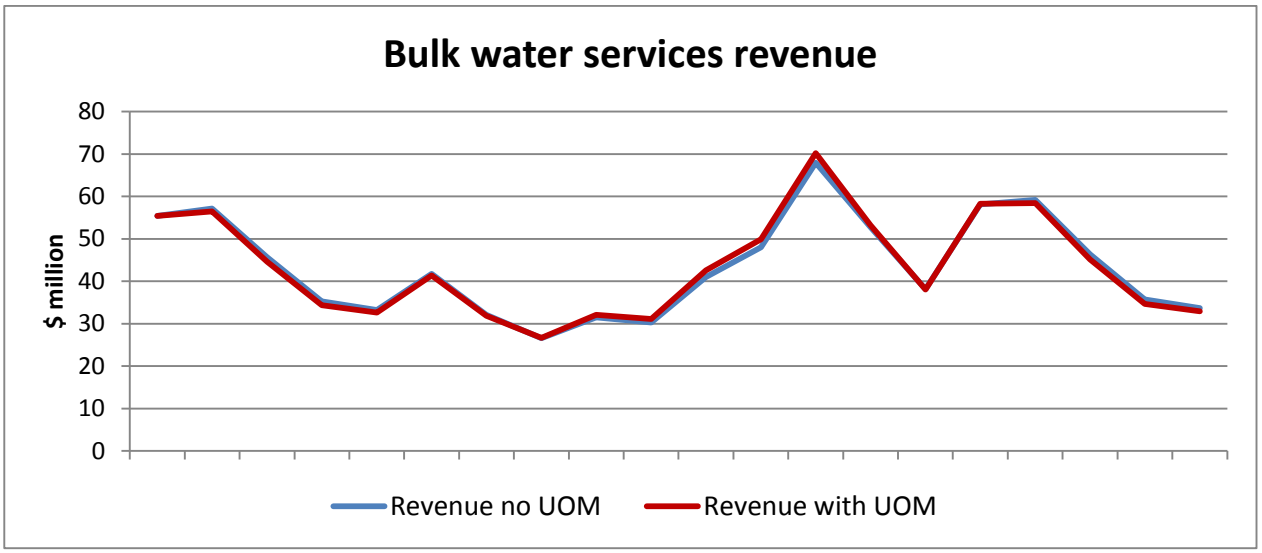
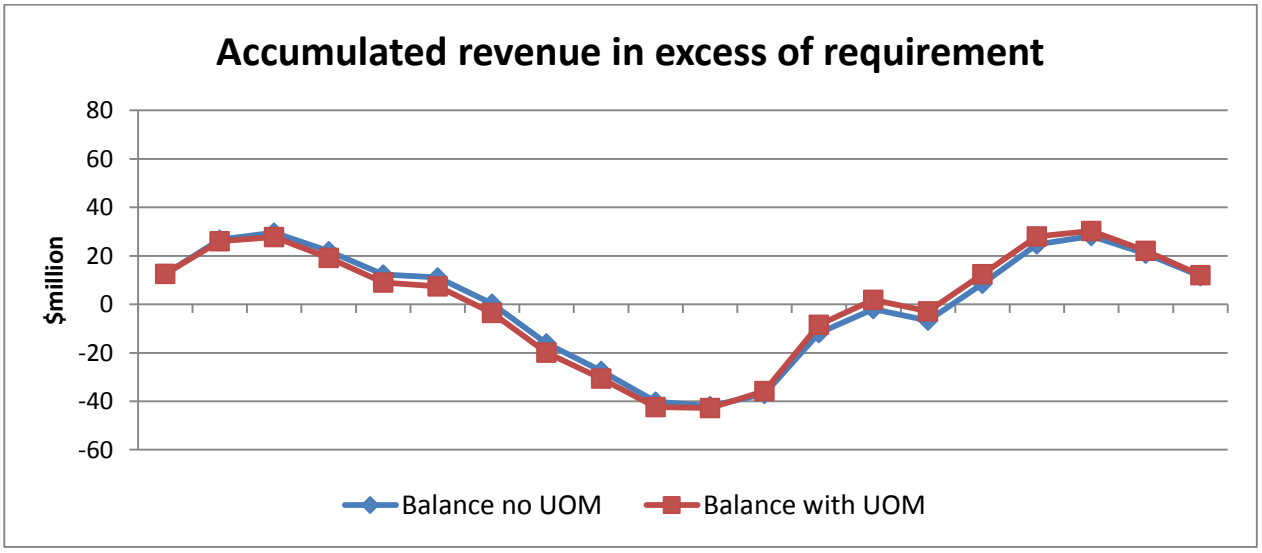


Figure 9 Impact of the UOM on accumulated revenue volatility



As shown in Figure 8 and Figure 9 above, the UOM has negligible impact on the volatility of revenue and the over-recovery balance (i.e. the accumulated revenue less the revenue requirement).

The UOM allowance may appear to finance any under recovery (and conversely charge for any over-recovery) to make WaterNSW indifferent as to the revenue required. However, this is not the case. The rate applied (the WACC) is not appropriate for what are, in effect, random changes in revenue. As a result, there is a residual cost to WaterNSW associated with the UOM both when the balance is positive and when it is negative:

[30] This is the sum of the return on capital and depreciation building block component as a proportion of total revenue requirement (excluding MDBA/BRC costs)

- Following a positive UOM balance WaterNSW's revenue requirement falls by an amount equal to the balance multiplied by the WACC. However, the expected investment return on the UOM balance will be much lower than WACC due to the indeterminate period. Due to the indeterminate period, a reasonable expected return on the UOM balance will be at the short-term risk free investment rate.
- Similarly following a negative UOM balance, WaterNSW cannot be expected to raise additional funds cheaply due to the indeterminate period of any source of finance. The cost of financing a negative UOM balance may vary substantially with a material risk that WaterNSW faces significant refinancing risk.

6.4 The other mechanism from the current determination

The tariff structure from the current determination also includes the usage forecast mechanism, described as follows.

Usage prices are calculated yearly as $= \frac{required\ usage\ revenue}{20\ year\ rolling\ average\ use\ (with\ 2\ year\ lag)}$

The use of the 20 year rolling average provides an automatic hedge against changes in usage. A drop in usage will (after a 2 year lag) reduce the 20 year rolling average and thereby increase usage prices in the future. This may help to offset the fall in revenues due to lower usage. Similarly an increase in usage will lead to lower prices.

The impact on addressing revenue volatility, is however, small. The adjustment occurs with a two year lag. Furthermore, as the pricing adjustment is only to usage prices, the mechanism does little to offset the effects of a drought where there is a continual reduction in usage.

6.5 Comparison with other jurisdictions

The usage revenue WaterNSW receives is significantly variable compared to like organisations.

In a review of rural water charges PWC noted that "*With the exception of State Water, all water businesses apply a higher fixed charge ratio or one which is 50 per cent fixed*."[31]

More recently, the ACCC reported bills comprise of entirely fixed charges in Victoria and South Australia and 85 and 99 per cent in SunWater systems (with some exceptions).[32]

Victorian bulk water suppliers (Goulburn Murray Water and Lower Murray Water) recover costs through 100 per cent fixed charge. In its 2013 determination, the Essential Services Commission of Victoria (ESCV) approved the form of price control proposed that involved a revenue cap form of price control with a rebalancing constraint to limit the extent of price changes in any one year to +/- 10 per cent.[33]

Our analysis suggests that NSW irrigation corporations also have a preference to towards levying predominately fixed charges. For example:

- Murray Irrigation appears to apply a 75:25 fixed to variable tariff structure[34]
- Murrumbidgee Irrigation appears to apply a 80:20 fixed to variable tariff structure[35]
- Coleambally Irrigation apply a predominately fixed charge structure[36], and

[31] PWC 2010, "Pricing Principles and Tariff Structures for SunWater's Water Supply Schemes Issues: Paper". Prepared for the Queensland Competition Authority (p. 10).
[32] ACCC 2013-14 Water Monitoring Report (pp.48-49)
[33] Refer to http://www.esc.vic.gov.au/Water/Water-Price-Review-2013-18/2013-18-Water-price-review-determinations
[34] Derived from the 2016-17 revenue forecasts published by Murray Irrigation in its 2012-17 Network Service Plan.
[35] Derived from the 2016-17 revenue forecasts published by Murrumbidgee Irrigation in its 2012-17 Network Service Plan.
[36] According to the Coleambally 2014-15 schedule of charges and the Coleambally 2012-17 Network Service Plan.

- Western Murray Irrigation does not levy a usage charge as long as water usage is below or equal to the access fee allowance[37].

6.6 Other residual issues

Currently there is no mechanism in place to manage WaterNSW's risk of a declining trend in usage revenue resulting from long-term reductions in use. Reductions in use may occur as a result of:

- reductions in the availability of water (e.g. due to climate change)
- reductions in water use behaviour by customers
- reductions in the number of customers.

When there is a trend, the UOM and rolling forecast 20 year average mechanism fail to catch-up.

This risk is a material issue for WaterNSW and one that would not occur under a cost-reflective tariff structure.

6.7 Managing our revenue volatility

6.7.1 Tariff structure for bulk water services charges

WaterNSW presented to customers a range of fixed:variable tariff structures and a preliminary cost of revenue volatility associated with each tariff-structure. Given the options, customers (at a valley level) expressed a preference for their status-quo fixed: variable split which for the majority of customers is 40:60.

We have listened to our customers and are proposing to maintain the current fixed to variable splits in all rural valleys (other than for the Fish River Scheme). However, we have sought third party insurance to mitigate the revenue risk resulting from valley tariff structures which are less than 80:20 fixed: variable.

6.7.2 The regulatory context

The regulatory framework allows WaterNSW to charge efficient costs for its regulated services.

The ACCC Pricing Principles provide regulators with flexibility on a range of different mechanisms that can be used to address potential revenue volatility.[38] These include estimating the:

- costs of bearing the risk of revenue volatility over the period
- the likely cost of purchasing insurance to manage revenue volatility.

[37] According to the ACCC 2014-15 Water Monitoring Report – monitoring approach and assumptions, May 2016, page 54.

[38] The ACCC noted these in its submission to IPART's 2012 rural water charging review. The submission can be found at http://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/online_submission_-_australian_competition_and_consumer_commission_-_s_grosser_-_9_jul_2012.pdf

Box 2 WCIR mechanisms for managing revenue volatility

From Section 6.3 of ACCC Pricing Principles

> The WCIR and pricing principles provides regulators with flexibility on a range of different mechanisms that can be used to address potential revenue volatility.
>
> Measures available to a regulator include:
>
> - choosing the form of price control (see section 3.10)
> - setting tariff structures (see section 3.11)
> - changing charges during a regulatory period to reflect changes in forecast demand or consumption (see section 2.2).
>
> However, in some circumstances a regulator may wish to introduce other mechanisms to manage likely revenue volatility over the regulatory period. For instance, a regulator could estimate the opportunity costs associated with bearing the risk of revenue volatility over the period, or could estimate the likely cost of purchasing insurance to manage revenue volatility
>
> Any other mechanisms can also be applied by a regulator on a case by case basis, subject to meeting the requirements in the rules.

6.7.3 Options for managing the revenue volatility

Consistent with the ACCC Pricing Principles, WaterNSW has considered a number of mechanisms for addressing volatility. These can be categorised based on who bears the risk.

- Customers: by paying a greater proportion of fixed-charges so as to reduce the volatility of WaterNSW's revenue
- WaterNSW: by continuing to bear the significant volatility
- A third-party: by using a risk-transfer product (similar to insurance) to transfer some of the revenue stream to a third party to reduce the volatility borne by WaterNSW.

As discussed, customers have expressed a strong preference against a cost-reflective tariff structure that would minimise WaterNSW's volatility.

WaterNSW's preferred approach to managing the revenue volatility is to transfer the risk to a third party via a risk-share or insurance type of arrangement. Such a financial transfer has several benefits:

- it would be efficient as a third-party with more diversified investment assets could have a lower cost of bearing the risk
- it provides a foundation in the long-term for more flexible arrangements with customers. For example, it may be able to facilitate individual customers being able to choose their tariff structure.

WaterNSW has obtained an initial quote of a risk transfer product (RTP) that would replicate an 80:20 fixed to variable tariff structure. The RTP is a simple swap arrangement whereby two-thirds of WaterNSW's usage revenue (in valleys with a 40:60 or 60:40 fixed variable structure) is swapped for a fixed revenue stream. [39] We are continuing to engage with the market to obtain the best available price for the RTP.

6.7.4 Recovering the cost of the volatility

The cost of undertaking the risk transfer needs to be recovered through customer charges and therefore an allocation is required, first by valley and then by customer within the valley. Only

[39] By swapping two-thirds of the variable revenue a 60 per cent variable revenue stream is converted to 20 per cent variable revenue stream. The swap arrangement is for 4 years and includes limits of $20 million (annually) and $50 million (over the 4 year period) in both directions.

those valleys with a fixed: variable tariff structure less than 80 per cent fixed attract the additional cost. As noted in section 3.4.1.2 above, there is currently one valley considering moving to an 80:20 tariff structure (others may choose to follow). If a valley were to choose this structure prior to IPART's determination, there is scope to adjust valley pricing to remove the cost of the RTP from the valley. [40]

We propose to allocate the cost by valley based on the relative revenue volatility of each valley; specifically at the beginning of each regulatory period we would:

- use the prior 20 year period to calculate the mean absolute deviation (MAD) of usage revenue from each valley
- determine the RTP for each valley as follows:

$$\text{RTP for a valley} = \frac{\text{MAD for the valley}}{Sum\ of\ MAD\ for\ all\ valleys} \text{ x total RTP}$$

This approach replicates the approach used by IPART in allocating its volatility allowance in the 2010 to 2014 determination.[41]

We propose allocating the RTP to customers in proportion to the holding of GS entitlements. We have proposed this approach because:

- it is consistent with the approach applied in the 2010-2014 period
- it is equitable and practical. GS entitlements are the key source of revenue volatility. The revenue per-HS entitlement is very stable.[42] Adding the charge to usage prices would increase the volatility.

6.8 Fish River

In November 2014, EnergyAustralia announced that it would be closing Wallerawang power station which is a major customer of the Fish River Scheme (along with its Mt Piper power station). In 2014-15, the Wallerawang power station was closed and decommissioned.

Our analysis suggests that the shutdown of the Wallerawang power station will result in a revenue shortfall to WaterNSW of $1.8 million per annum in the current determination period for the Fish River Scheme.

Under the WCIR:

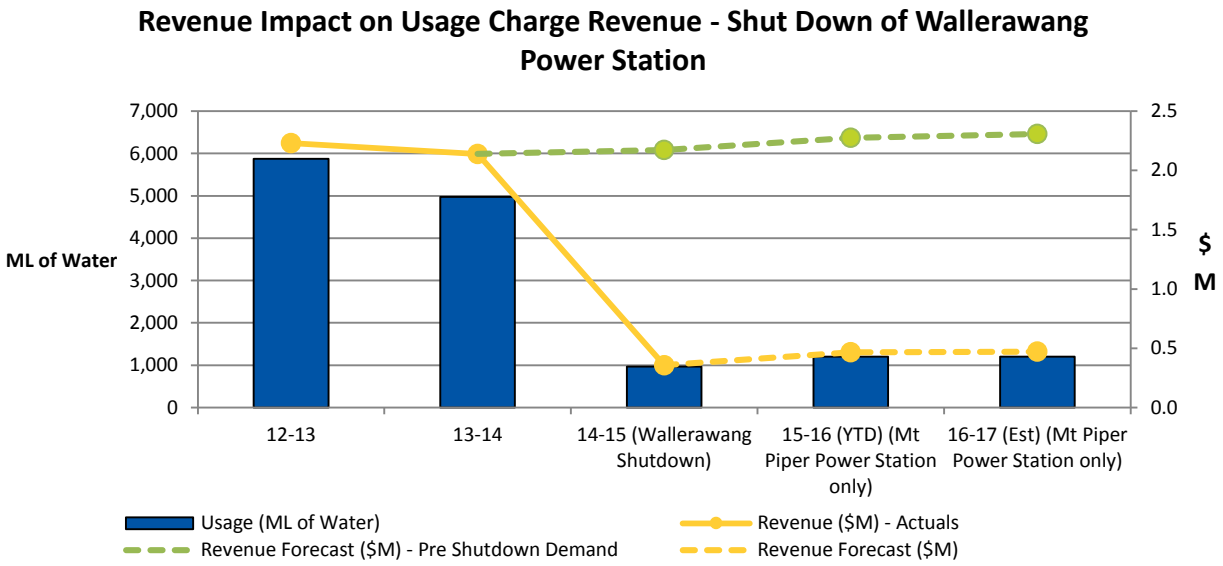
- IPART must not approve the regulated charges set out in our pricing submission unless it is satisfied that (among other things) the applicant's total forecast revenue for the regulatory period is reasonably likely to meet the prudent and efficient cost of proving infrastructure services in that regulatory period; and
- IPART must have regard to whether the regulated charges in our pricing submission would contribute to the achieving the Basin Water Charging Principles and Objectives (BWCPO). One of the BWCPOs is to ensure sufficient revenue streams to allow efficient delivery of the required services.

The current tariff structure and UOM mechanism for the Fish River Scheme is not consistent with the WCIR requirements as WaterNSW is not reasonably likely to recovery on its prudent and efficient costs for the Fish River Scheme. As highlighted in Table 11 above, the Fish River Scheme UOM balance is approximately -$4.6 million primarily due to the closure of Wallerawang power station. This is because there is currently no pricing mechanism in place to manage WaterNSW's risk of a sudden decline in usage. Figure 10 below shows the reduction in usage charge revenue from EnergyAustralia in 2012-13 to 2016-17 (estimate). It can be seen that the

[40] The overall insured risk of the RTP would reduce with a valley removed and therefore we would expect the cost of the RTP to reduce accordingly.
[41] See IPART, Review of Bulk Water Prices to be charged by State Water Corporation from 1 July 2010, Final Report, pp.57-58.
[42] Usage per HS per entitlement tended to increase during the millennium drought.

$1.8 million revenue shortfall is driven by an 80 per cent drop in water usage by EnergyAustralia (5,000 MLs in 2013-14 to 1,200 MLs in 2014-15).

Figure 10 Impact on usage charge revenue due to the shutdown of Wallerawang Power Station (nominal $)



We note that:

- EnergyAustralia contributed 58 per cent of total revenue in the Fish River Scheme when Wallerawang Power Station was in operation (~2012-13); however
- at current demand levels, EnergyAustralia's contribution to total revenue has reduced to 40 per cent. Usage from EnergyAustralia is expected to remain at 1,200 MLs in future years due to relatively flat demand from the Mt Piper power station.

The permanent closure of Wallerawang power station would suggest that the current 20 year rolling average of actual water sales is not reflective of forecast demand and may not be an appropriate method of setting the usage charge for the Fish River Scheme.

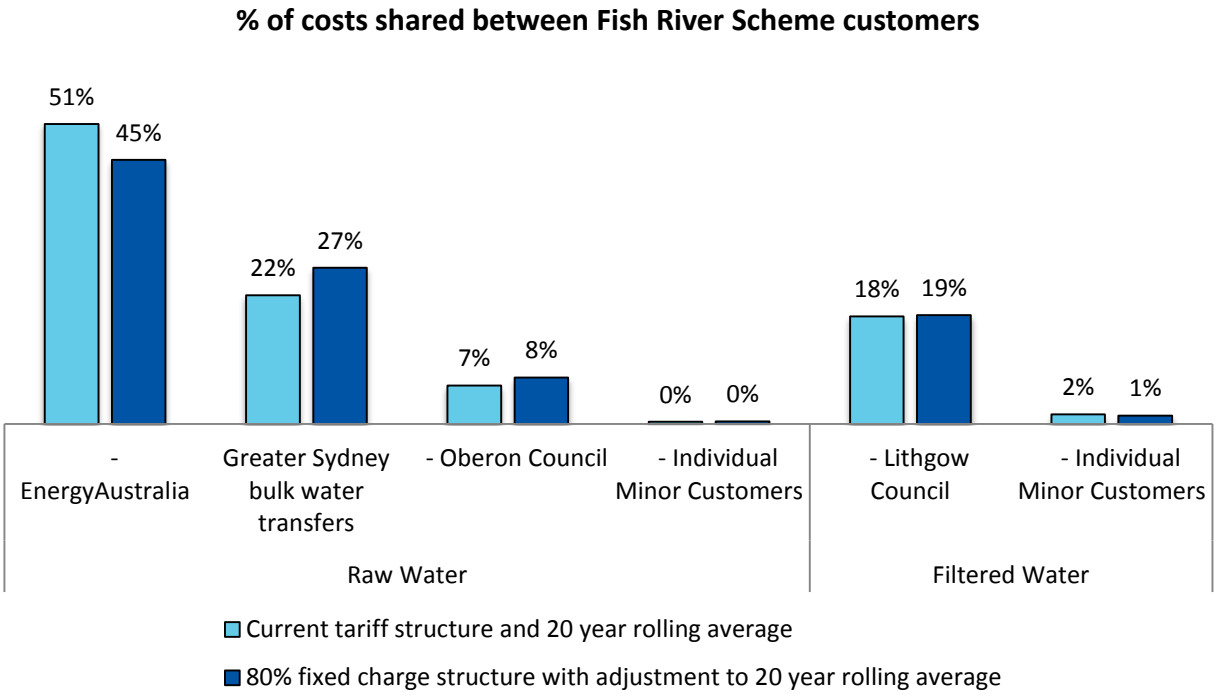
To address the revenue risk, we propose:

- adjusting the 20 year rolling average of actual rolling sales on usage charges in the Fish River Scheme with expected forward looking usage from EnergyAustralia (from 5,636MLs to 1,200MLs expected demand from the Mt Piper power station)[43], and
- increasing the fixed cost component of bulk water services charges to 80 per cent.

As shown in Figure 11 below, our proposal ensures that EnergyAustralia continues to contribute their share of the costs of Fish River Scheme (45% vs 58% of MAQs held by EnergyAustralia), without a significant transfer in cost burden to other Fish River Scheme customers.

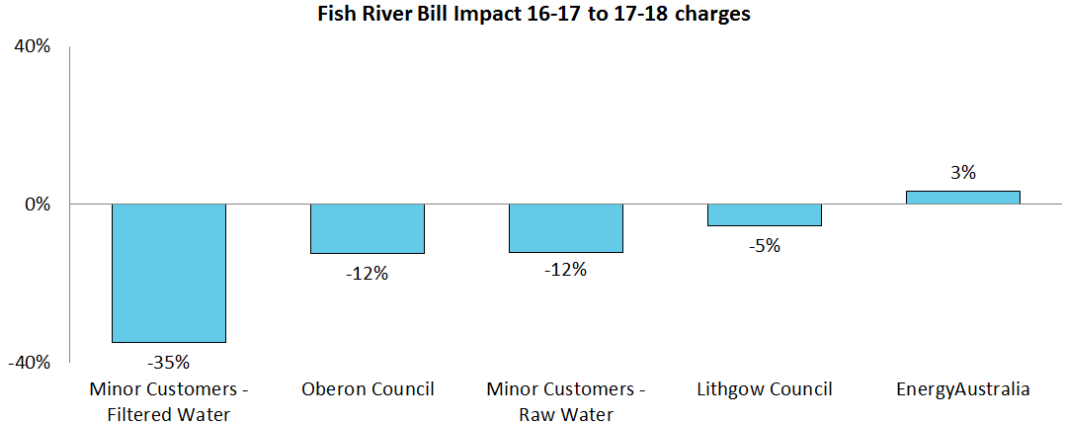
[43] WaterNSW notes that the adjustment of the 20 year rolling average has only been considered for this circumstance as it is a rare occurrence and a circumstance exogenous to the normal operation of the way that the 20 year rolling average operates. As such we note that weather events such as severe drought would not merit a change in the 20 year rolling average as it is specifically designed to manage for weather variances.

Figure 11 Impact of cost share split between Fish River customers



To avoid excess bill shocks on customers, we have reduced controllable costs in the Fish River Scheme as a way to mitigate the financial risk to customers and WaterNSW. As shown in Figure 12 below, the majority of Fish River Scheme customers will not experience a bill increase by moving to an 80 percent fixed charge structure.

Figure 12 Impact of 80% charge structure on Fish River bills



From a broader policy and reform perspective, we query whether, over the long-term, it is appropriate for WaterNSW to own and operate a water distribution system. As water distribution systems are not a core activity for WaterNSW there may be a more appropriate and efficient structure for these assets, recognising this is an issue beyond the scope of this pricing proposal and determination process.

7. Proposed bulk water services charges

7.1 Proposed charges by valley

Our proposed bulk water services charges per valley are shown in the tables below. Each table indicates the percentage of fixed charges applying to each valley, the HS and GS Fixed charge and the variable usage charge for the valley. The tables contain the prices for the final year of the current determination (16-17) as a comparator and the percentage change from that year to the first year of our proposal (17-18). The tables below exclude uncontrollable pass through charges which are discussed in section 20 of this pricing proposal.

Table 12 Proposed bulk water services charges Border Valley 2016-17 to 2020-21 $nominal

Border 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$6.90	$5.67	$5.81	$5.96	$6.11	-17.8%
GS Fixed Charge	$2.43	$2.36	$2.42	$2.48	$2.54	-3.0%
Variable Usage Charge	$6.60	$5.67	$5.81	$5.96	$6.10	-14.0%

Table 13 Proposed bulk water services charges Gwydir Valley 2016-17 to 2020-21 $nominal

Gwydir 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$14.13	$13.40	$13.74	$14.08	$14.44	-5.1%
GS Fixed Charge	$3.47	$4.21	$4.32	$4.42	$4.53	21.2%
Variable Usage Charge	$12.13	$11.45	$11.74	$12.03	$12.33	-5.6%

Table 14 Proposed bulk water services charges Peel Valley 2016-17 to 2020-21 $nominal

Peel 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$35.27	$21.96	$22.51	$23.07	$23.65	-37.7%
GS Fixed Charge	$3.88	$4.90	$5.02	$5.14	$5.27	26.3%
Variable Usage Charge	$58.26	$59.01	$60.48	$61.99	$63.54	1.3%

Table 15 Proposed bulk water services charges Namoi Valley 2016-17 to 2020-21 $nominal

Namoi 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$17.29	$16.53	$16.94	$17.37	$17.80	-4.4%
GS Fixed Charge	$8.25	$9.72	$9.96	$10.21	$10.46	17.8%
Variable Usage Charge	$20.26	$18.91	$19.38	$19.87	$20.37	-6.7%

Table 16 Proposed bulk water services charges Lachlan Valley 2016-17 to 2020-21 $nominal

Lachlan 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$16.48	$15.18	$15.55	$15.94	$16.34	-7.9%
GS Fixed Charge	$3.28	$4.09	$4.20	$4.30	$4.41	24.8%
Variable Usage Charge	$21.12	$19.09	$19.57	$20.06	$20.56	-9.6%

Table 17 Proposed bulk water services charges Macquarie Valley 2016-17 to 2020-21 $nominal

Macquarie 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$16.17	$12.81	$13.13	$13.46	$13.80	-20.8%
GS Fixed Charge	$3.62	$3.71	$3.80	$3.89	$3.99	2.3%
Variable Usage Charge	$16.97	$13.10	$13.43	$13.76	$14.11	-22.8%

Table 18 Proposed bulk water services charges Murray Valley 2016-17 to 2020-21 $nominal

Murray 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$1.79	$1.56	$1.59	$1.63	$1.67	-13.0%
GS Fixed Charge	$0.97	$1.00	$1.03	$1.05	$1.08	3.3%
Variable Usage Charge	$2.31	$2.02	$2.07	$2.12	$2.17	-12.8%

Table 19 Proposed bulk water services charges Murrumbidgee Valley 2016-17 to 2020-21 $nominal

Murrumbidgee 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$3.08	$2.98	$3.05	$3.13	$3.20	-3.3%
GS Fixed Charge	$1.26	$1.40	$1.44	$1.47	$1.51	11.1%
Variable Usage Charge	$3.53	$3.40	$3.48	$3.57	$3.66	-3.8%

Table 20 Proposed bulk water services charges Hunter Valley 2016-17 to 2020-21 $nominal

Hunter 60% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$26.03	$21.28	$21.81	$22.36	$22.92	-18.3%
GS Fixed Charge	$8.86	$7.51	$7.70	$7.89	$8.09	-15.2%
Variable Usage Charge	$14.77	$13.26	$13.59	$13.93	$14.27	-10.3%

Table 21 Proposed bulk water services charges North Coast Valley 2016-17 to 2020-21 $nominal

North Coast 60% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$9.54	$10.49	$11.54	$12.70	$13.97	10.0%
GS Fixed Charge	$7.25	$7.98	$8.77	$9.65	$10.61	10.0%
Variable Usage Charge	$45.04	$49.54	$54.50	$59.95	$65.94	10.0%

Table 22 Proposed bulk water services charges South Coast Valley 2016-17 to 2020-21 $nominal

South Coast 40% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$21.12	$23.23	$25.56	$28.11	$30.92	10.0%
GS Fixed Charge	$10.09	$11.10	$12.21	$13.43	$14.77	10.0%
Variable Usage Charge	$40.38	$44.42	$48.86	$53.75	$59.12	10.0%

Table 23 Proposed bulk water services charges Lowbidgee Valley 2016-17 to 2020-21 $nominal

Lowbidgee 100% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
Supplementary Licence Fixed Charge	$0.84	$0.86	$0.88	$0.91	$0.93	3.1%

Table 24 Proposed bulk water services charges Fish River Scheme Raw Water 2016-17 to 2020-21 $nominal

Fish River Raw Water 80% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
Access Charge - Major Customers	$0.36	$0.39	$0.40	$0.41	$0.42	9.2%
Access Charge - Minor Customers	$71.27	$77.83	$79.78	$81.77	$83.81	9.2%
Usage Charge	$0.42	$0.29	$0.30	$0.31	$0.31	-30.3%
Excessive Usage Charge	$0.78	$0.68	$0.70	$0.72	$0.73	-12.1%

Table 25 Proposed bulk water services charges Fish River Scheme Filtered Water Valley 2016-17 to 2020-21 $nominal

Fish River Filtered Water 80% Fixed Tariff Structure						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
Access Charge - Major Customers	$0.57	$0.69	$0.40	$0.41	$0.42	21.0%
Access Charge - Minor Customers	$137.95	$137.98	$141.43	$144.96	$148.59	0.0%
Usage Charge	$0.78	$0.27	$0.27	$0.28	$0.29	-65.7%
Excessive Usage Charge	$1.18	$0.96	$0.98	$1.01	$1.03	-18.9%

8. Impact on customers of proposed bulk water services charges

8.1 Overview

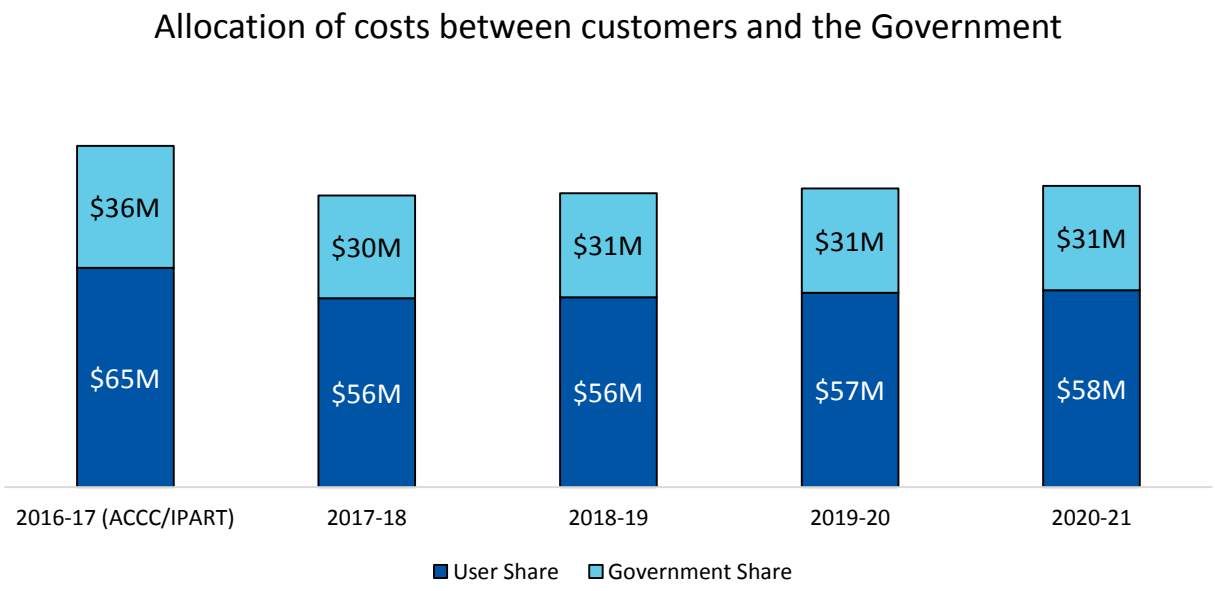
Since its formation from the former State Water Corporation and the former Sydney Catchment Authority, WaterNSW has cut costs and reduced duplication in an effort to transform itself into a customer driven and highly responsive bulk water provider. The reduction in controllable costs translates into more affordable bills for the average WaterNSW customer.

Proposed operating expenditure for the 2017-21 regulatory period is presented in section 14. The proposed expenditure shows a reduction in controllable costs of around 20 per cent compared to the allowance in the ACCC's current determination as at 30 June 2017.

In section 11.3.2, we note that the RAB is adjusted by actual capital expenditure incurred in the 2014-17 regulatory period. This adjustment ensures that customers only pay for capital investment that provides direct benefits to them in their valleys. This, together with a proposed reduction in the WACC (see section 12), will see a reduction in the return on capital revenue component by approximately 20 per cent compared to the allowance in ACCC's current determination as at 30 June 2017.

This revenue is then allocated between customers and the Government in line with the cost share methodology explained in section 10.6 to arrive at the total user revenue requirement to set customer charges. Figure 13 below shows that the majority of savings will be passed onto customers.

Figure 13 Allocation of costs between customers and the Government (2016/17 real $)



Figures above show unsmoothed total revenue from 2016-17 to 2020-21

Overall, the total user revenue requirement will reduce by about 10 per cent compared to allowance in ACCC's current determination as at 30 June 2017. A reduction in user revenue requirement results in reductions in prices and overall bills. HS customers will see a bill reduction of around 9% from their 2016-17 bill, while the majority of GS customers will see a bill reduction of 3% from their 2016-17 bill.

8.2 Assumptions for bill impact analysis

In this section, we present annual price change and a bill impact tables for each valley for bulk water services charges.

The annual price change table shows the percentage change in the fixed and variable charge in each year of the upcoming determination period. The final column shows the price change from the end of the current determination period (2016-2017) to end of the upcoming determination period. (2020-2021)

The bill impact tables highlight the typical bill for a small, medium and large customer by HS and GS entitlements in each year of the upcoming determination period. The final two columns show:

- the immediate bill impact from the end of the current determination period (2016-17) to the start of the upcoming determination period (2017-18)
- the percentage change for customer bills from the end of the current determination period (2016-17) to end of the upcoming determination period (2020-21).

The bill impact tables for each rural valley are based on:

- the proposed (smoothed) user revenue requirement (see section 9.1), converted into a fixed and variable usage charge, using the relevant fixed to variable split, and adjusted by forecast CPI in each year of the 2017-21 regulatory period
- a scenario of 60 per cent water usage for general security customers and 100 per cent water usage for high security customers, broken down into:
    - small customers (100 MLs of entitlements)
    - medium customer (500 MLs of entitlements)
    - large customers (1000 MLs of entitlements).

For the Murray and Murrumbidgee valleys, we have produced additional bill impact tables for those customers who extract water through a Commonwealth funded WaterNSW owned meter, reflecting the changes to their meter service charge set out in section 16.1.1. This is broken down into:

- small customers (100MLs of entitlements) with a 100mm Commonwealth funded meter
- medium customers (500MLs of entitlements) with a 250mm Commonwealth funded meter
- large customers (1000MLs of entitlements) with a 450mm Commonwealth funded meter.

For the Fish River Scheme, the bill impact analysis is based on:

- the proposed (smoothed) user revenue requirement (see section 9.2), converted into a fixed and variable usage charge, using the relevant fixed to variable split, and adjusted by forecast CPI in each year of the 2017-21 regulatory period
- minimum annual quantities (MAQ) in the water sharing plan for major customers, and a deemed 200 MAQ for minor customers, and
- average water usage over 20 years for each customer type, and 1,200ML water usage for EnergyAustralia.[44]

The bill impact analysis is indicative only and for later years does not take into account updates to the 20 year rolling average of actual water sales and the unders-and-overs balance. The annual updates to incorporate these factors are explained in greater detail in section 2.4.

For example, in the Border River valleys:

- Table 26 shows that the HS Fixed Charge drops by 17.8 per cent in 2017-18 compared to 2016-17 and then increases by forecast CPI (2.5 per cent) in each year of the upcoming determination period. By 2020-21, the HS Fixed Charge will be 11.5 per cent less than the charging levels in 2016-2017
- Table 27 shows GS bills for small customers will drop by 9.8% in 2017-18 compared to 2016-17. By 2020-21, GS bills for small customers will be 2.9 per cent lower compared to 2016-17 bills.

[44] This assumes 1200ML demand from the Mt Piper Power Station.

Table 26 Bill impact analysis Border Valley – by percentage yearly price change $nominal

Border 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-17.8%	2.5%	2.5%	2.5%	-11.5%
GS Fixed Charge	-3.0%	2.5%	2.5%	2.5%	4.5%
Variable Usage Charge	-14.0%	2.5%	2.5%	2.5%	-7.4%

Table 27 Bill impact analysis Border Valley - indicative bills $nominal

Border 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$639	$576	$590	$605	$620	-9.8%	-2.9%
Medium Customer	$3,193	$2,879	$2,951	$3,024	$3,100	-9.8%	-2.9%
Large Customer	$6,385	$5,757	$5,901	$6,049	$6,200	-9.8%	-2.9%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,350	$1,134	$1,162	$1,191	$1,221	-16.0%	-9.5%
Medium Customer	$6,748	$5,669	$5,811	$5,956	$6,105	-16.0%	-9.5%
Large Customer	$13,495	$11,339	$11,622	$11,913	$12,211	-16.0%	-9.5%

Table 28 Bill impact analysis Gwydir Valley - percentage yearly price change $nominal

Gwydir 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-5.1%	2.5%	2.5%	2.5%	2.2%
GS Fixed Charge	21.2%	2.5%	2.5%	2.5%	30.5%
Variable Usage Charge	-5.6%	2.5%	2.5%	2.5%	1.7%

Table 29 Bill impact analysis Gwydir Valley – indicative bills $nominal

Gwydir 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,075	$1,108	$1,136	$1,164	$1,193	3.1%	11.0%
Medium Customer	$5,376	$5,541	$5,679	$5,821	$5,967	3.1%	11.0%
Large Customer	$10,753	$11,082	$11,359	$11,643	$11,934	3.1%	11.0%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$2,626	$2,486	$2,548	$2,612	$2,677	-5.3%	1.9%
Medium Customer	$13,130	$12,429	$12,739	$13,058	$13,384	-5.3%	1.9%
Large Customer	$26,259	$24,857	$25,478	$26,115	$26,768	-5.3%	1.9%

Table 30 Bill impact analysis Peel Valley - percentage yearly price change $nominal

Peel 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-37.7%	2.5%	2.5%	2.5%	-32.9%
GS Fixed Charge	26.3%	2.5%	2.5%	2.5%	36.0%
Variable Usage Charge	1.3%	2.5%	2.5%	2.5%	9.1%

Table 31 Bill impact analysis Peel Valley - indicative bills $nominal

Peel 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,883	$4,030	$4,131	$4,234	$4,340	3.8%	11.8%
Medium Customer	$19,416	$20,151	$20,655	$21,171	$21,700	3.8%	11.8%
Large Customer	$38,832	$40,302	$41,309	$42,342	$43,400	3.8%	11.8%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$9,352	$8,097	$8,299	$8,507	$8,719	-13.4%	-6.8%
Medium Customer	$46,761	$40,484	$41,496	$42,533	$43,597	-13.4%	-6.8%
Large Customer	$93,523	$80,967	$82,992	$85,066	$87,193	-13.4%	-6.8%

Table 32 Bill impact analysis Namoi Valley - percentage yearly price change $nominal

Namoi 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-4.4%	2.5%	2.5%	2.5%	3.0%
GS Fixed Charge	17.8%	2.5%	2.5%	2.5%	26.9%
Variable Usage Charge	-6.7%	2.5%	2.5%	2.5%	0.5%

Table 33 Bill impact analysis Namoi Valley - indicative bills $nominal

Namoi 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$2,041	$2,106	$2,159	$2,213	$2,268	3.2%	11.2%
Medium Customer	$10,203	$10,531	$10,795	$11,065	$11,341	3.2%	11.2%
Large Customer	$20,405	$21,063	$21,589	$22,129	$22,682	3.2%	11.2%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,755	$3,544	$3,633	$3,724	$3,817	-5.6%	1.6%
Medium Customer	$18,776	$17,721	$18,164	$18,618	$19,083	-5.6%	1.6%
Large Customer	$37,551	$35,442	$36,328	$37,236	$38,167	-5.6%	1.6%

Table 34 Bill impact analysis Lachlan Valley - percentage yearly price change $nominal

Lachlan 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-7.9%	2.5%	2.5%	2.5%	-0.8%
GS Fixed Charge	24.8%	2.5%	2.5%	2.5%	34.4%
Variable Usage Charge	-9.6%	2.5%	2.5%	2.5%	-2.7%

Table 35 Bill impact analysis Lachlan Valley - indicative bills $nominal

Lachlan 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,595	$1,555	$1,594	$1,634	$1,675	-2.5%	5.0%
Medium Customer	$7,977	$7,775	$7,970	$8,169	$8,373	-2.5%	5.0%
Large Customer	$15,955	$15,550	$15,939	$16,338	$16,746	-2.5%	5.0%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,760	$3,427	$3,513	$3,600	$3,690	-8.9%	-1.8%
Medium Customer	$18,799	$17,134	$17,563	$18,002	$18,452	-8.9%	-1.8%
Large Customer	$37,599	$34,269	$35,126	$36,004	$36,904	-8.9%	-1.8%

Table 36 Bill impact analysis Macquarie Valley - percentage yearly price change $nominal

Macquarie 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-20.8%	2.5%	2.5%	2.5%	-14.7%
GS Fixed Charge	2.3%	2.5%	2.5%	2.5%	10.2%
Variable Usage Charge	-22.8%	2.5%	2.5%	2.5%	-16.9%

Table 37 Bill impact analysis Macquarie Valley - indicative bills $nominal

Macquarie 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,380	$1,157	$1,186	$1,215	$1,246	-16.2%	-9.8%
Medium Customer	$6,902	$5,783	$5,928	$6,076	$6,228	-16.2%	-9.8%
Large Customer	$13,804	$11,566	$11,856	$12,152	$12,456	-16.2%	-9.8%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,314	$2,591	$2,656	$2,722	$2,790	-21.8%	-15.8%
Medium Customer	$16,572	$12,955	$13,279	$13,611	$13,951	-21.8%	-15.8%
Large Customer	$33,144	$25,910	$26,558	$27,222	$27,903	-21.8%	-15.8%

Table 38 Bill impact analysis Murray Valley - percentage yearly price change $nominal

Murray 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-13.0%	2.5%	2.5%	2.5%	-6.3%
GS Fixed Charge	3.3%	2.5%	2.5%	2.5%	11.2%
Variable Usage Charge	-12.8%	2.5%	2.5%	2.5%	-6.1%

Table 39 Bill impact analysis Murray Valley (customers with Water NSW owned meter) - indicative bills $nominal

Murray 40% Fixed Tariff Structure - Customer with WaterNSW owned meter							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$635	$662	$700	$739	$828	4.2%	30.3%
Medium Customer	$1,627	$1,552	$1,614	$1,678	$1,815	-4.6%	11.5%
Large Customer	$2,982	$2,687	$2,787	$2,891	$3,112	-9.9%	4.4%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$810	$798	$839	$882	$974	-1.4%	20.3%
Medium Customer	$2,499	$2,233	$2,312	$2,394	$2,548	-10.7%	2.0%
Large Customer	$4,725	$4,049	$4,183	$4,321	$4,578	-14.3%	-3.1%

Table 40 Bill impact analysis Murray Valley (customers with customer owned meter) - indicative bills $nominal

Murray 40% Fixed Tariff Structure - Customer without customer owned meter							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$235.77	$221.17	$226.70	$232.37	$238.18	-6.2%	1.0%
Medium Customer	$1,178.83	$1,105.86	$1,133.50	$1,161.84	$1,190.89	-6.2%	1.0%
Large Customer	$2,357.66	$2,211.71	$2,267.01	$2,323.68	$2,381.77	-6.2%	1.0%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$410.13	$357.34	$366.27	$375.43	$384.82	-12.9%	-6.2%
Medium Customer	$2,050.65	$1,786.70	$1,831.37	$1,877.15	$1,924.08	-12.9%	-6.2%
Large Customer	$4,101.29	$3,573.40	$3,662.73	$3,754.30	$3,848.16	-12.9%	-6.2%

Table 41 Bill impact analysis Murrumbidgee Valley - percentage yearly price change $nominal

Murrumbidgee 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-3.3%	2.5%	2.5%	2.5%	4.2%
GS Fixed Charge	11.1%	2.5%	2.5%	2.5%	19.7%
Variable Usage Charge	-3.8%	2.5%	2.5%	2.5%	3.6%

Table 42 Bill impact analysis Murrumbidgee Valley (customers with WaterNSW owned meter) - indicative bills $nominal

Murrumbidgee 40% Fixed Tariff Structure - Customer with WaterNSW owned meter							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$738	$785	$826	$869	$960	6.4%	30.2%
Medium Customer	$2,139	$2,167	$2,244	$2,324	$2,477	1.3%	15.8%
Large Customer	$4,005	$3,916	$4,047	$4,183	$4,436	-2.2%	10.8%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,060	$1,078	$1,127	$1,177	$1,276	1.7%	20.3%
Medium Customer	$3,752	$3,633	$3,747	$3,865	$4,056	-3.2%	8.1%
Large Customer	$7,231	$6,849	$7,053	$7,264	$7,594	-5.3%	5.0%

Table 43 Bill impact analysis Murrumbidgee Valley (customers with customer owned meter) - indicative bills $nominal

Murrumbidgee 40% Fixed Tariff Structure - Customer without customer owned meter							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$338.08	$344.13	$352.73	$361.55	$370.59	1.8%	9.6%
Medium Customer	$1,690.39	$1,720.65	$1,763.66	$1,807.76	$1,852.95	1.8%	9.6%
Large Customer	$3,380.77	$3,441.30	$3,527.33	$3,615.51	$3,705.90	1.8%	9.6%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$660.73	$637.39	$653.33	$669.66	$686.40	-3.5%	3.9%
Medium Customer	$3,303.63	$3,186.95	$3,266.63	$3,348.29	$3,432.00	-3.5%	3.9%
Large Customer	$6,607.26	$6,373.91	$6,533.26	$6,696.59	$6,864.00	-3.5%	3.9%

Table 44 Bill impact analysis Hunter Valley - percentage yearly price change $nominal

Hunter 60% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	-18.3%	2.5%	2.5%	2.5%	-12.0%
GS Fixed Charge	-15.2%	2.5%	2.5%	2.5%	-8.7%
Variable Usage Charge	-10.3%	2.5%	2.5%	2.5%	-3.4%

Table 45 Bill impact analysis Hunter Valley - indicative bills $nominal

Hunter 60% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$1,772	$1,547	$1,585	$1,625	$1,665	-12.7%	-6.0%
Medium Customer	$8,861	$7,733	$7,926	$8,124	$8,327	-12.7%	-6.0%
Large Customer	$17,722	$15,466	$15,852	$16,249	$16,655	-12.7%	-6.0%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$4,080	$3,453	$3,540	$3,628	$3,719	-15.4%	-8.8%
Medium Customer	$20,400	$17,267	$17,699	$18,142	$18,595	-15.4%	-8.8%
Large Customer	$40,800	$34,535	$35,398	$36,283	$37,190	-15.4%	-8.8%

Table 46 Bill impact analysis North Coast Valley - percentage yearly price change $nominal

North Coast 60% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	10.0%	10.0%	10.0%	10.0%	46.4%
GS Fixed Charge	10.0%	10.0%	10.0%	10.0%	46.4%
Variable Usage Charge	10.0%	10.0%	10.0%	10.0%	46.4%

Table 47 Bill impact analysis North Coast Valley - indicative bills $nominal

North Coast 60% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,427	$3,770	$4,147	$4,562	$5,018	10.0%	46.4%
Medium Customer	$17,137	$18,851	$20,736	$22,809	$25,090	10.0%	46.4%
Large Customer	$34,274	$37,701	$41,472	$45,619	$50,181	10.0%	46.4%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$5,458	$6,004	$6,604	$7,265	$7,991	10.0%	46.4%
Medium Customer	$27,290	$30,019	$33,021	$36,323	$39,955	10.0%	46.4%
Large Customer	$54,580	$60,038	$66,042	$72,646	$79,911	10.0%	46.4%

Table 48 Bill impact analysis South Coast Valley - percentage yearly price change $nominal

South Coast 40% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	10.0%	10.0%	10.0%	10.0%	46.4%
GS Fixed Charge	10.0%	10.0%	10.0%	10.0%	46.4%
Variable Usage Charge	10.0%	10.0%	10.0%	10.0%	46.4%

Table 49 Bill impact analysis South Coast Valley - indicative bills $nominal

South Coast 40% Fixed Tariff Structure							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$3,432	$3,775	$4,152	$4,568	$5,024	10.0%	46.4%
Medium Customer	$17,159	$18,875	$20,762	$22,839	$25,122	10.0%	46.4%
Large Customer	$34,318	$37,750	$41,525	$45,677	$50,245	10.0%	46.4%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$6,150	$6,765	$7,442	$8,186	$9,004	10.0%	46.4%
Medium Customer	$30,750	$33,825	$37,208	$40,928	$45,021	10.0%	46.4%
Large Customer	$61,500	$67,650	$74,415	$81,857	$90,042	10.0%	46.4%

Table 50 Bill impact analysis Lowbidgee Valley - percentage yearly price change $nominal

Lowbidgee 100% Fixed Tariff Structure					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
Supplementary Licence Fixed Charge	3.1%	2.5%	2.5%	2.5%	11.0%

Table 51 Bill impact analysis Lowbidgee Valley - indicative bills $nominal

Lowbidgee 100% Fixed Tariff Structure							
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Supplementary Licence Customer	$625,574	$644,957	$661,080	$677,607	$694,548	3.1%	11.0%

Table 52 Bill impact analysis Fish River Valley (raw water customers) - percentage yearly price change $nominal

Fish River Scheme Raw Water Customers					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
Access Charge	9.2%	2.5%	2.5%	2.5%	17.6%
Usage Charge	-30.3%	2.5%	2.5%	2.5%	-25.0%
Excessive Usage Charge	-12.1%	2.5%	2.5%	2.5%	-5.4%

Table 53 Bill impact analysis Fish River Valley (raw water customers) - indicative bills $nominal

Indicative bills raw water customers Fish River Scheme							
	16-17	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Energy Australia	$3,418,816	$3,535,216	$3,623,597	$3,714,187	$3,807,041	3.4%	11.4%
Oberon Council	$709,534	$621,112	$636,640	$652,556	$668,870	-12.5%	-5.7%
Individual minor customers	$476	$418	$428	$439	$450	-12.1%	-5.4%

Table 54 Bill impact analysis Fish River Valley (filtered water customers) - percentage yearly price change $nominal

Fish River Scheme Filtered Water Customers					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
Access Charge	21.1%	2.5%	2.5%	2.5%	30.3%
Usage Charge	-65.7%	2.5%	2.5%	2.5%	-52.7%
Excessive Usage Charge	-34.9%	2.5%	2.5%	2.5%	-29.9%

Table 55 Bill impact analysis Fish River Valley (filtered water customers) - indicative bills $nominal

Indicative bills filtered water customers Fish River Scheme							
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %	16-17 to 20-21 %
Lithgow Council	$1,542,666	$1,458,911	$1,495,383	$1,532,768	$1,571,087	-5.4%	1.8%
Individual minor customers	$794	$517	$530	$543	$557	-34.9%	-29.9%

8.3 Bill impact on customers including MDBA pass-through charges

As discussed in section 2.9, WaterNSW is required to collect a certain proportion of the MDBA and BRC charges from customers. These charges are a pass-through. The impact on the MDBA/BRC charges for each of the affected valleys is shown in the tables below (these tables do not include the bulk water services charges). These charges are discussed in greater detail in section 20.1.

For example, the BRC pass through charge for the Border Valley is recovered through a fixed (100%) charge, instead of a 40:60 fixed to variable charge structure as set by the ACCC in the current determination period. Therefore, the variable charge drops by 100% in 2018-17 compared to 2016-17 while the GS Fixed charge increases by 95.3 per cent in the same period.

Table 56 Bill impact analysis including BRC charges Border Valley - percentage yearly price change $nominal

Border 100% Fixed Charge Structure - BRC pass through charge					
Yearly price change %	16-17 to 17-18	17-18 to 18-19	18-19 to 19-20	19-20 to 20-21	16-17 to 20-21
HS Fixed Charge	1.8%	5.7%	2.1%	2.5%	12.7%
GS Fixed Charge	95.3%	5.7%	2.1%	2.5%	116.1%
Variable Usage Charge	-100.00%	n.a	n.a	n.a	n.a

Table 57 Bill impact analysis including BRC charges Border Valley - indicative bills $nominal

Border 100% Fixed Charge Structure - BRC pass through charge							
Indicative bills - GS	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %	16-17 to 20-21 %
Small Customer	$391	$290	$307	$313	$321	-25.7%	-17.8%
Medium Customer	$1,953	$1,450	$1,534	$1,566	$1,605	-25.7%	-17.8%
Large Customer	$3,906	$2,901	$3,067	$3,132	$3,210	-25.7%	-17.8%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$826	$430	$455	$464	$476	-47.9%	-42.4%
Medium Customer	$4,128	$2,149	$2,273	$2,321	$2,379	-47.9%	-42.4%
Large Customer	$8,256	$4,299	$4,546	$4,642	$4,758	-47.9%	-42.4%

Table 58 Bill impact analysis including MDBA charges Murray Valley - percentage yearly price change $nominal

Murray 100% Fixed Tariff Structure - MDBA pass through charge					
Yearly price change %	**16-17 to 17-18 %**	**17-18 to 18-19 %**	**18-19 to 19-20 %**	**19-20 to 20-21 %**	**16-17 to 20-21 %**
HS Fixed Charge	183.91%	-20.97%	-1.43%	2.50%	126.71%
GS Fixed Charge	262.70%	-20.97%	-1.43%	2.50%	189.61%
Variable Usage Charge	-100.00%	n.a	n.a	n.a	n.a

Table 59 Bill impact analysis including MDBA charges Murray Valley - indicative bills $nominal

Murray 100% Fixed Tariff Structure - MDBA pass through charge							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$424	$633	$500	$493	$505	49.1%	19.1%
Medium Customer	$2,122	$3,164	$2,501	$2,465	$2,527	49.1%	19.1%
Large Customer	$4,244	$6,329	$5,002	$4,930	$5,053	49.1%	19.1%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$738	$914	$722	$712	$729	23.7%	-1.2%
Medium Customer	$3,692	$4,568	$3,610	$3,558	$3,647	23.7%	-1.2%
Large Customer	$7,384	$9,135	$7,220	$7,116	$7,294	23.7%	-1.2%

Table 60 Bill impact analysis including MDBA charges Murrumbidgee Valley - percentage yearly price change $nominal

Murrumbidgee 100% Fixed Tariff Structure - MDBA pass through charge					
Yearly price change %	**16-17 to 17-18**	**17-18 to 18-19**	**18-19 to 19-20**	**19-20 to 20-21**	**16-17 to 20-21**
HS Fixed Charge	131.4%	-21.1%	-1.4%	2.5%	84.4%
GS Fixed Charge	306.0%	-21.1%	-1.4%	2.5%	223.7%
Variable Usage Charge	-100.0%	n.a	n.a	n.a	n.a

Table 61 Bill impact analysis including MDBA charges Murrumbidgee Valley - indicative bills $nominal

Murrumbidgee 100% Fixed Tariff Structure - MDBA pass through charge							
Indicative bills - GS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$79	$119	$94	$93	$95	51.6%	20.8%
Medium Customer	$394	$597	$471	$465	$476	51.6%	20.8%
Large Customer	$788	$1,195	$943	$929	$953	51.6%	20.8%
Indicative bills - HS	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**16-17 to 17-18 %**	**16-17 to 20-21 %**
Small Customer	$154	$166	$131	$129	$132	7.7%	-14.1%
Medium Customer	$771	$830	$655	$645	$662	7.7%	-14.1%
Large Customer	$1,541	$1,660	$1,310	$1,291	$1,323	7.7%	-14.1%

9. Our revenue requirements for bulk water services

9.1 Overview

In this section we present our revenue requirements based on the traditional building block components and other charges that are required to be passed through including the impact of MDBA and BRC pass-through charges.

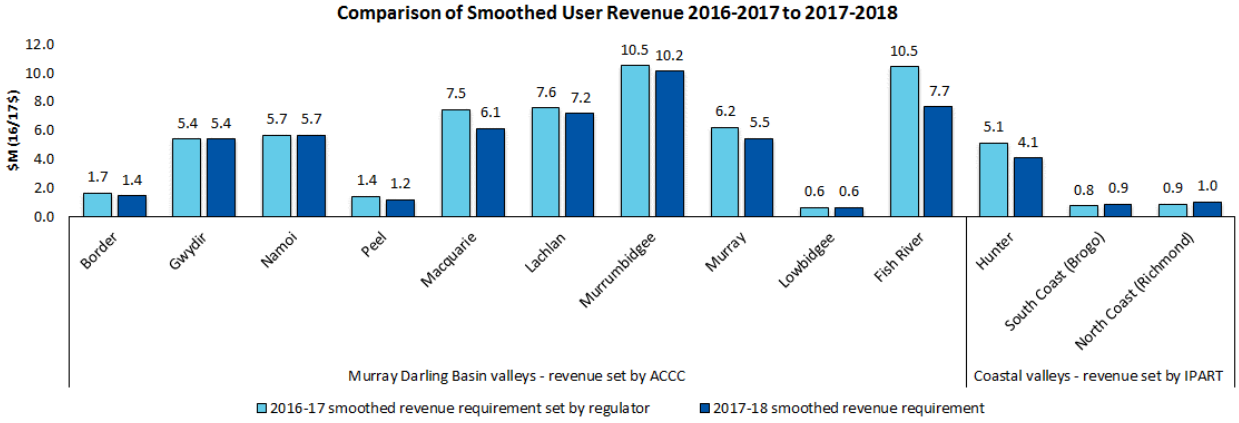
Firstly we calculate the total revenue requirement for WaterNSW on a gross basis which includes total revenue requirements for the rural valleys including the user and NSW Government share. We show the MDBA and BRC pass-through charges.

We apply a fully absorbed approach to allocate overhead costs between the rural business and our Greater Sydney business to calculate the total revenue requirement. From this total revenue requirement we net the user share from the NSW Government contributions using the cost share ratio developed by IPART. We explain the cost allocation and user share allocations in section 10 below.

Infrastructure charges to users are calculated from the net revenue requirement (excluding Government share). We then smoothed the revenue over the upcoming determination period to promote price stability for our customers. The smoothed revenue is paid by customers through bulk water infrastructure charges.

A comparison of our proposed smoothed user revenue requirement against the revenue allowance set by the regulator is shown in Figure 14 below.

Figure 14 Comparison of smoothed user revenue 2017-18 against smoothed revenue allowance set by the regulator 2016-17 (2016/17 real $)



The smoothed revenue requirement represents the costs to be paid for by customers through their bulk water services charges. Our proposal is to adopt straight-line real smoothing to ensure that customer receive the benefit of stable prices in the upcoming determination period. That is, we divide the sum of total user revenue (16/17 $) in each year of the upcoming determination period by the number of years. This smoothed revenue is then escalated by CPI. Our proposed bulk water services charges are set to increase by 2.5% per annum from the second year of the upcoming determination period.

In most valleys, our proposed smoothed revenue is less than the smoothed revenue set by the ACCC as at 30 June 2017. For example, as shown in the chart above, in the Border Valley, smoothed revenue will be $1.4 million compared to $1.7 million set by the ACCC as at 30 June 2017.

9.2 Total revenue requirement (gross amount) allowance

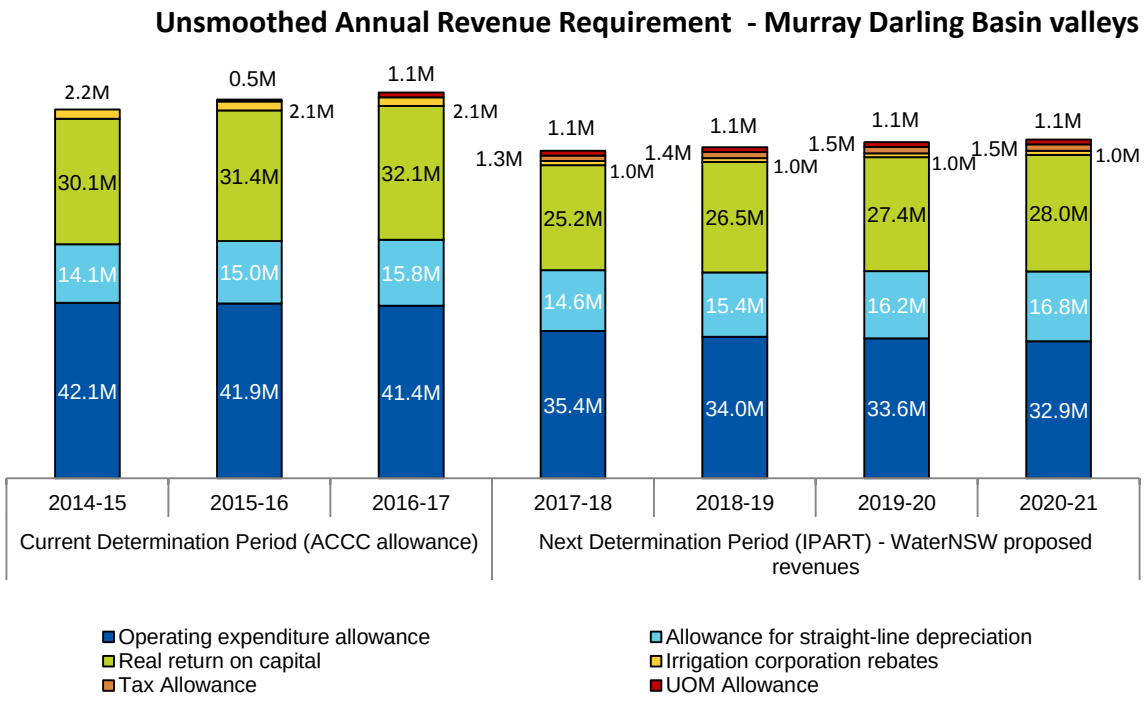
WaterNSW is proposing a total revenue requirement of $350.4M for the four year regulatory period from 2017-18 to 2020-21. The building block build-up of our revenue requirement are shown in Table 62 below.

Table 62 Proposed total revenue requirement for infrastructure services 2017-18 to 2020-21 ($2016-17 '000)

Total Revenue Requirement (2016-2017 $)				
Total costs	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Operating and maintenance	40,442	38,731	38,282	37,481
Return of capital (depreciation)	15,141	16,043	16,826	17,459
Return on capital	27,167	28,576	29,606	30,403
Tax allowance	1,325	1,406	1,476	1,535
UOM allowance	1,147	1,147	1,147	1,147
ICD rebates	1,013	977	977	963
Total costs	86,235	86,880	88,313	88,989

Our revenue proposal compares favourably to the Murray Darling Basin revenue allowance set by the ACCC in its 2014 Final Decision, as shown in Figure 15 below.

Figure 15 Comparison of ACCC revenue requirement and WaterNSW proposed revenue requirement Murray Darling Basin valleys (real 16/17$)



The decline in the revenue requirement as at the last year of our proposal (2020-21) compared to the last year of the ACCC allowance (2016-17) is driven by a 20 per cent reduction in operating expenditure ($41.4 million to $33.0 million) and a 13 per cent reduction in the return on capital component of the building blocks ($32.1 million to 28.0 million).

9.3 Revenue requirement by user share (net amount)

Table 63 sets out our proposed user share revenue requirement for 2017-18 to 2020-21 determination period. This is the revenue we propose to recover through regulated charges.

Table 63 Proposed revenue requirement – user share of infrastructure services 2017-18 to 2020-21 ($2016-17 $'000)

Note this table excludes MDBA and BRC pass-through charges.

User Revenue Requirement (2016-2017 $)				
Total costs	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Operating and maintenance	36,834	35,173	34,738	34,026
Return of capital (depreciation)	5,652	6,406	7,085	7,633
Return on capital	10,506	11,689	12,737	13,539
Tax allowance	638	711	777	832
UOM allowance	1,147	1,147	1,147	1,147
ICD rebates	1,013	977	977	963
Total costs (unsmoothed user revenue)	55,790	56,104	57,460	58,140
Smoothed user revenue	56,873	56,873	56,873	56,873

9.4 Revenue requirement by Government share

Table 64 sets out our proposed Government share revenue requirement for 2017-18 to 2020-21 determination period.

Table 64 Proposed revenue requirement – Government share of infrastructure services 2017-18 to 2020-21 ($2016-17 $'000)

Government Revenue Requirement (2016-2017 $)				
Total costs	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Operating and maintenance	3,609	3,558	3,544	3,455
Return of capital (depreciation)	9,489	9,636	9,741	9,827
Return on capital	16,660	16,887	16,869	16,864
Tax allowance	688	695	699	703
Total costs	30,445	30,776	30,854	30,848

Note this table excludes MDBA and BRC pass-through charges.

Return on capital represents the largest cost component of the Government revenue requirement. This is primarily driven by upgrades and enhancement to our assets to ensure that they comply with pre 1997 dam safety requirements.

9.4.1 Total revenue requirement by valley

Table 65 shows our total revenue requirement by valley. These figures do not include MDBA and BRC pass-through charges.

Table 65 Total revenue requirement by valley ($2016-17, '000)

Total Revenue Requirement by valley (2016-2017 $)					
	2017-18	2018-19	2019-20	2020-21	Total
Border	1,608	1,650	1,668	1,658	6,584
Gwydir	10,449	10,419	10,505	10,461	41,835
Namoi	13,855	14,399	14,811	15,098	58,162
Peel	3,392	3,392	3,414	3,407	13,605
Lachlan	11,104	10,926	11,083	11,110	44,223
Macquarie	9,011	9,004	9,118	9,133	36,265
Murray	6,332	6,362	6,370	6,321	25,386
Murrumbidgee	15,019	15,128	15,253	15,508	60,909
Lowbidgee	480	571	684	782	2,517
North Coast	1,289	1,277	1,299	1,292	5,158
Hunter	5,236	5,099	5,256	5,284	20,874
South Coast	1,067	1,048	1,063	1,077	4,254
Fish River	7,393	7,605	7,790	7,857	30,645
Total	86,235	86,880	88,313	88,989	350,417

Note this table excludes MDBA and BRC pass-through charges.

9.4.2 Revenue requirements by valley – user share

Table 66 shows our total unsmoothed user revenue requirement by valley.

Table 66 Unsmoothed Revenue requirement by valley – user share ($2016-17, '000)

Total User Share Revenue Requirement by valley (2016-2017 $)					
	2017-18	2018-19	2019-20	2020-21	Total
Border	1,401	1,442	1,461	1,456	5,760
Gwydir	5,323	5,342	5,479	5,499	21,643
Namoi	5,476	5,574	5,782	5,864	22,695
Peel	1,135	1,147	1,186	1,201	4,670
Lachlan	7,213	7,053	7,236	7,301	28,804
Macquarie	6,044	6,052	6,183	6,226	24,505
Murray	5,435	5,467	5,482	5,442	21,826
Murrumbidgee	9,934	10,038	10,183	10,470	40,625
Lowbidgee	480	571	684	782	2,517
North Coast	1,014	1,003	1,026	1,025	4,069
Hunter	4,073	3,960	4,098	4,138	16,269
South Coast	868	850	869	879	3,466
Fish River	7,393	7,605	7,790	7,857	30,645
Total	55,790	56,104	57,460	58,140	227,493

Note this table excludes MDBA and BRC pass-through charges.

10. Approach to cost allocation and user share

10.1 Introduction

WaterNSW's business comprises the bulk water services we supply to rural customers, which is the subject of this pricing proposal, and raw water services we supply to Sydney Water and customers in the greater Sydney region, which is subject to a separate IPART determination with new prices due to commence on 1 July 2016. Therefore, we need to allocate our costs between these businesses in determining our revenue requirement for each business.

10.2 Cost allocation principles

Our cost allocation method complies with the ACCC Pricing Principles. These cost allocation requirements are shown in Box 3 below:

Box 3 ACCC cost allocation requirements

Section 3.9 Cost allocation

Charges are to be approved or determined on the basis of a cost allocation methodology that:

- identifies which costs arise from providing infrastructure services (to which regulated charges apply) and which costs arise from other activities undertaken by the operator
- attributes direct costs to the service to which they relate and not more than once to any category of service
- uses an appropriate allocator when a causal allocator for shared costs can be identified
- only uses a non-causal allocator for shared costs where those costs are immaterial or no causal relationship could be established without undue cost and effort
- allocates shared costs such that the full amount of those costs, no more or no less, is allocated to the services to which it relates.

The same cost must not be allocated more than once in any instance.

10.3 Identifying costs for providing infrastructure services

The operating expenditures of WaterNSW comprise direct costs (for example cost of operating Copeton dam) and indirect (overhead or shared) costs (for example, corporate costs).

In determining the cost of operations and therefore determining our revenue requirements, overhead needs to be allocated in accordance with the ACCC Pricing Principles across our business activities.

The cost allocation implemented by WaterNSW is to prevent any cross subsidy between the bulk water charges in the rural business and other business segments such as Greater Sydney and other segments.

We apply a full absorption costing method of assigning indirect costs (overheads) to projects. This approach complies with the requirements of the ACCC Pricing Principles as discussed above.

For cost allocation purposes we allocate all WaterNSW operating costs into four segments. This is done as follows:

1. **Core** - this segment consists of the regulated business activities of Greater Sydney and rural valleys (the subject of this pricing proposal). The direct costs of these businesses are tagged and allocated to each of rural valleys and Greater Sydney as appropriate
2. **Core Plus** - this segment consists of supplementary activities that are not included in the regulated business. These activities are externally funded and include investments such as those funded by the MDBA
3. **Other** - this segment represents unregulated commercial business opportunities and direct costs are allocated accordingly to this segment

4. **Overhead** – this includes the overhead costs from business units and corporate overhead. The overhead costs are allocated between the business segments as described in section 10.4 below.

Rural bulk water services costs are further divided between those to be paid for by NSW Government and those to be paid for by our rural customers. Section 10.6 below discusses the government:user cost allocation process.

10.4 Allocation of overhead costs

The following method is followed to allocate overhead costs:

Step 1 Identify total overhead within the period.

Step 2 Deduct from total overhead that amount of overhead to be capitalised (as described below in section 10.5). The remaining balance is termed net overhead.

For example:

Total overhead = Capitalised overhead + Net overhead

$50 million = $6 million + $44 million

Step 3. Split net overhead to the regions (divided overhead). That is 55 percent Greater Sydney and 45 percent rural valleys.[45]

For example:

Net overhead = $44million

$24 million to Greater Sydney (55%) and $20 million to Rural Valleys (45%)

Step 4. Pro-rate the regional divided overhead on the direct salary incurred per project (after the capitalisation of overhead explained in section 10.5 below) relative to total cost of salary.

10.5 Capitalisation overhead (Step 2)

At Step 2 in the method of allocating overhead described above, a deduction is made for overhead that is capitalised. Australian Accounting Standards prohibit the capitalisation of corporate overhead.[46]

Accordingly, overhead specifically from the three asset delivery business units - Asset Development Projects, Information and Communication Technology and Strategic Engineering is assessed for capitalisation. The collective overhead for the asset delivery business units is termed ‘Operational Overhead’.

As a proxy for the level of capital development activity done in those business units, capital expenditure as a percentage of total expenditure of the asset delivery business units is calculated. This percentage is then applied to Operational Overhead and the resulting amount is capitalised.

For example:

Total Operational Overhead = $10 million

Total asset delivery expenditures = $150 million = opex $60m + capex $90m = 100% = 40% + 60%

[45] IPART 2016, Review of prices for WaterNSW from 1 July 2016 to 30 June 2020, Water — Draft Report, March 2016. p. 21. (Draft decision for Greater Sydney)
[46] Australian Accounting Standards Board AASB 116 (19).

Therefore of the $10 million of operational overhead $6million would be capitalised (i.e. $10 x 60%).

Capitalised overhead is pro-rated to capital projects based on direct project cost.

10.6 Cost allocation between NSW Government and rural customers

In establishing the costs attributable to our rural customers we deduct costs paid by the NSW Government under cost allocation arrangements.

A framework for the allocation of costs between users and Government has been in place since the IPART 2001 Bulk Water Price Determination. IPART introduced a cost allocation methodology to assign water infrastructure costs between Government and customers (excluding the Fish River Scheme and Lowbidgee[47]). IPART's methodology evolved over several price determinations and was applied by the ACCC in the ACCC 2014 Decision.

The cost share ratios are based on the application of the 'impactor' pays principle, which seeks to allocate costs to different individuals or groups in proportion to the contribution that each individual or group makes to creating the costs (or the need to incur the costs).

The current user shares of cost drivers for operating and capital expenditures are shown in Table 67 below[48]

Table 67 Cost allocation arrangements between NSW Government and customers [49]

Cost driver	Cost driver descriptions	Customer share
Operating expenditure		
Customer Support	Management and administration of the CSC's, customer education and support materials	100%
Customer Billing	Customer enquiries, transaction and complaints services (Helpdesk), invoicing, receipting, debtor management, system administration, postage to collect regulated revenue.	100%
Metering & Compliance	Customer water ordering, customer water accounting management, customer site surveillance, compliance reporting, meter reading, system management and usage apportionment, licensing issues resolution.	100%
Water delivery & Other Operations	Water release from dams to customers. Normal environment and system flows (includes supplementary flow management) Short-term and long-term demand forecasting and resource assessment. Works Approval and other compliance reporting. Use of SCADA and manual work required to release water from dams, weir and regulators.	100%

[47] The IPART regulatory model provided to WaterNSW in April 2016 states that Fish River Scheme and Lowbidgee costs are allocated 100% to the user.
[48] Table 1-5 and Table 1-6 Attachments to the ACCC Final Decision on State Water Pricing Application 2014-15 – 2016-17 June 2014.
[49] Also see table 1-5 and table 1-6 Attachments to ACCC Final Decision on State Water Pricing Application 2014-15 – 2016-17.
https://www.accc.gov.au/system/files/Attachments%20to%20final%20decision%20on%20State%20Water%20Pricing%20application%202014-15%20to%202016-17_0_0.pdf

Flood Operations	Flood operations/ Flood training/Onsite works required flood operations.	50%
Hydrometric Monitoring	This service is purchased from DPI Water	90%
Water Quality Monitoring	Storage water quality monitoring and reporting Fish River water quality management plan	50%
Corrective Maintenance	Breakdown maintenance of assets which provide services to customers and other water users.	100%
Routine Maintenance	Planned or condition based maintenance of assets which provide services to customers and other water users.	100%
Asset Management Planning	Asset planning and safety/Maintenance planning/Asset condition auditing/Operational risk and incident management. Procurement/Dam safety/compliance/Operations.	100%
Dam Safety Compliance Capital Projects pre 1997	Dam surveillance/Dam safety inspections, reviews, audits and associated risk assessment	0%
Dam Safety Compliance	Dam surveillance/Dam safety inspections, reviews, audits and associated risk assessment	50%
Environmental Planning & Protection	Environmental management – strategic and specific planning and assessment, Fish passage, Carbon neutrality Cold water pollution	50%
Insurance	Insurance such as public liability and building and other asset insurance	100%
Capital expenditure		
Asset Management Planning	Asset planning and safety/Maintenance planning/Asset condition auditing/Operational risk and incident management. Procurement, Dam safety, compliance Operations.	100%
Routine Maintenance	Planned or condition based maintenance of assets which provide services to customers and other water users.	100%
Dam Safety Compliance - Pre 1997 Construction	Dam surveillance, Dam safety inspections, reviews, audits and associated risk assessment	0%
Dam Safety Compliance	Dam surveillance, Dam safety inspections, reviews, audits and associated risk assessment	50%
Renewal & Replacement	Expected wear and tear and usage of water infrastructure	90%
Structural and Other Enhancement	Discretionary expenditure endorsed by Customer Service Committees	100%

Corporate Systems	Responsible for the delivery of information services',major projects and improvement initiatives. Some systems provide services to customers and stakeholders.	100%
Environment Planning and Protection	Environmental management – strategic and specific planning and assessment, Fish passage, Carbon neutrality, Cold water pollution.	50%
Flood operations	Flood operations Flood training Onsite works required flood operations.	50%
Office Accommodation Capital Projects	Office Accommodation, Dam Operational Facilities, Essential staff accommodation	100%
Information Management Projects	Responsible for the delivery of information services' major projects and improvement initiatives. Some projects provide services to customers and stakeholders.	100%
Water Delivery and other operations	Water release from dams to customers. Normal environment and system flows (includes supplementary flow management) Short-term and long-term demand forecasting and resource assessment. Works Approval and other compliance reporting. Use of SCADA and manual work required to release water from dams, weir and regulators.	100%

Under current arrangements the majority of costs are allocated to customers. The key exceptions as shown in the tables are the pre 1997 dam safety legacy costs which are 100 percent borne by Government, and some environmental costs (for instance, fish passages, carbon neutrality, cold water pollution), which are split in equal shares between customers and the Government.

We have submitted our operating expenditure program in this pricing submission as per the IPART methodology. However, for internal planning purposes, Water NSW has renamed capital expenditure categories according to four key cost drivers as follows:

- augmenting capability
- maintaining capability
- new capability
- regulatory compliance.

The IPART cost drivers for capital expenditure set out in the table above from activities within our renamed capital expenditure categories. We have mapped our new capital expenditure categories with the IPART categories above. This is set out in Table 77 in section 13.1.1. As is shown in Table 77, there is no variance in our approach from the IPART cost sharing methodology.

10.6.1 IPART review of cost allocation ratios

In 2012, the NSW Government asked IPART to conduct a review into bulk water charges to identify options for determining the NSW Government's cost share for bulk water charges in NSW. IPART recommended the continuation of the current approach to determining government costs shares, using the cost allocation ratios applied in the 2010 Determination until 1 July 2017. IPART recommended a review the cost share ratios every two years after 2017.[50]

We consider that a comprehensive review of the cost sharing arrangement should be initiated. We consider that the aim of the review should be to ensure appropriateness of the cost allocation

[50] IPART, Review of Rural Water Charging Systems, Final Report, August 2012, page 7.

ratios against the impactor pays principle and to take into account any new evidence or activities, or scope for broadening the customer base for the allocation of costs.

A review of cost allocation arrangements will be a substantial undertaking and due to the commitments associated with the 2017-2021 Rural Pricing determination. WaterNSW's view is that such a review is best conducted after the conclusion of this determination process. This would enable sufficient resources be allocated to the process and ensure proper consideration and consultation of the matter, as well as enabling any recommendations such as legislative or policy changes to be effectively implemented.

The reviewed cost share arrangements would then be in place for application in the 2021 pricing determination. We communicated our position to our customers at the outset of our consultation process on this pricing proposal. This was agreed to by the CSC Reference Group.

11. Regulatory asset base

This section describes WaterNSW's proposed approach to determine WaterNSW's RAB for the 2017-21 regulatory period.

11.1 Impact on total revenue requirement

Under the building blocks revenue model, the forecast RAB determines the "return of capital" and "return on capital" revenue building blocks (also known as the capital cost allowance) for the 2017-21 regulatory period. These building blocks ensure that prudent and efficient capital expenditure is paid for by the customer over the life of the asset (through the return of capital, or "regulatory depreciation" revenue allowance), together with a "return on capital" allowance, to cover efficient debt and equity financing costs. These costs comprise approximately 50% of WaterNSW total revenue requirement for the 2017-21 regulatory period.

The capital costs allowance for all of WaterNSW's capital investment to date and forecast capital investment in the 2017-21 regulatory period, is determined using a forecast RAB. The forecast RAB is the value of all of our regulated infrastructure assets for pricing purposes.

WaterNSW has calculated the forecast starting RAB as at 1 July 2017 using the RAB roll forward methodology prescribed in Schedule 2 of the WCIR, and rolled forward the starting RAB to the end of the 2017-21 regulatory period. The RAB values, as determined through this two-step process, is shown in Table 68 below.

Table 68 RAB values - RAB Roll Forward and Forecast RAB

Total	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2016-17$)			
$'000	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21
Opening RAB	649,018	700,819	716,719	748,183	802,321	849,920	882,695	912,448
+ Capex/Additions	40,562	19,289	28,620	51,420	63,747	49,690	47,641	32,630
- Depreciation	8,944	14,123	15,433	16,629	15,389	16,306	17,102	17,746
- Disposals	0	0	0	0	759	610	786	635
+ Indexation	20,183	10,734	18,276	19,347	0	0	0	0
Closing RAB	700,819	716,719	748,183	802,321	849,920	882,695	912,448	926,696

* Indexation on opening RAB and 50 per cent of the value of capital expenditure and disposals. Forecast CPI of 2.5% has been applied for 2015 to 2017 RAB values based on the 10 year long term estimate of CPI by the RBA.

The following section explains how WaterNSW calculated the RAB values set out above.

11.2 Step 1 - Application of the RAB roll forward methodology

Pursuant to rule 29(2)(a) of the WCIR, the regulator must not approve WaterNSW's proposed regulated charges unless it is satisfied that the determination of the regulated asset base used is in accordance with Schedule 2 of the WCIR.

Schedule 2 of the WCIR strictly defines the RAB roll forward methodology to set regulated charges in a subsequently regulatory period, as follows:

$$(A + B) – (C + D)$$

Where:

A is the regulatory asset base of the operator determined in respect of the proceeding regulatory period

B is the total of the actual (or, in the case of the last year of the proceeding regulatory period, forecast) capital expenditure on assets used by the operator to provide infrastructure services (net of actual customer and government capital expenditure contributions) in respect of each year of the proceeding regulatory period.

C is the regulatory depreciation in respect of assets used to provide infrastructure services in respect of each year of the proceeding regulatory period.

D is the actual (or, in the case of the last year of the preceding regulatory period, forecast) revenue received by the operator from the disposal of assets used to provide infrastructure services in respect of each year of the preceding regulatory period

WaterNSW is proposing that IPART apply the WCIR for the determination of the coastal valley RABs for consistency.

11.3 RAB roll forward - opening RAB

The method for rolling forward the RAB considers capital expenditure, asset disposals, depreciation and an adjustment for inflation.

In simple terms, capital expenditure and the inflation adjustment are added to the opening RAB, and asset disposals and depreciation are subtracted. This provides a closing RAB position. The opening RAB position for any year is equal to the closing RAB position of the previous year. This process has been followed each year for which the RAB has been rolled forward and is set out in Table 69 below.

Table 69 Step 1 - RAB Roll Forward (nominal)

Step 1 - RAB Roll Forward (nominal)				
$'000	**13-14**	**14-15**	**15-16**	**16-17**
Opening RAB	649,018	700,819	716,719	748,183
+ Capex/Additions	40,562	19,289	28,620	51,420
- Depreciation	8,944	14,123	15,433	16,629
- Disposals	0	0	0	0
+ Indexation	20,183*	10,734	18,276	19,347
Closing RAB	700,819	716,719	748,183	802,321

* indexation on opening RAB and 50 per cent of the value of capital expenditure and disposals. Forecast CPI of 2.5% has been applied for 2015 to 2017 RAB values based on the 10 year long term estimate of CPI by the RBA. The inflation rates were input by IPART in its pricing model provided to WaterNSW in April 2016.

11.3.1 Opening RAB for the RAB roll forward

As per Schedule 2 of the WCIR, the first step in the RAB roll forward is to apply the regulatory approved RAB values for the start of the preceding regulatory period. For the MDB valleys, WaterNSW has applied the opening RAB values for the 2014-15 financial year as determined by the ACCC in its 2014-17 MDB price review, updated with actual capital expenditure. For the coastal valleys, WaterNSW has applied the opening RAB values as at the 2010-11 financial year, as determined by IPART in its 2010-14 rural price review, updated with actual capital expenditure.

11.3.2 Adjustment for actual capital expenditure

The second step in the RAB roll forward is to adjust the previously determined RAB values by the total capital expenditure incurred by WaterNSW in each year of the 2014-17 regulatory period (or in the case of the coastal valleys, the total capital expenditure incurred in each year of the 2010-

17 period). This approach is consistent with the IPART financial model provided to WaterNSW by IPART in March 2016, which rolls forward capital expenditure into the RAB as it is incurred and calculates the depreciation and return on capital allowance on an as incurred basis). WaterNSW has included in the RAB all capital expenditure that was financed by WaterNSW (either internally or through debt finance). For more information on capital expenditure see section 13.

11.3.3 Adjustment for regulatory depreciation

The third step in the RAB roll forward is to deduct from the RAB the regulatory depreciation amount in respect of assets used to provide infrastructure services. For the MDB valleys, WaterNSW has applied forecast depreciation values determined by the ACCC in its 2014-17 price review. These values were used by the ACCC to calculate the regulatory depreciation allowance, which was paid by customers as part of the 2014-17 regulated charges.

For the coastal valleys WaterNSW has applied actual, instead of forecast, depreciation to determine the RAB values within the 2010 to 2017 period. The actual depreciation amounts have been determined using the straight line depreciation methodology on RAB values adjusted using actual capital expenditure incurred by WaterNSW in each year in the 2010 to 2017 period. The rationale for using actual, instead of forecast depreciation is as follows:

- in 2014, IPART approved the continuation of 2013-14 coastal valley charges up until 2016-17. Therefore, forecast RAB values (and forecast regulatory depreciation values) have not been set by the regulator for the 2014-17 period

- WaterNSW incurred capital expenditure in the coastal valleys which exceeded the capital expenditure regulatory allowance set by IPART in its 2010-14 price review. This means that the regulatory depreciation allowance incorporated in 2010-17 coastal valley charges does not compensate WaterNSW for the depreciation of its assets. The allowance does not factor in the additional capital expenditure incurred by WaterNSW in the 2010-17 period.

11.3.4 Adjustment for disposal of assets

The final step in the RAB roll forward is to deduct from the RAB actual revenue received by WaterNSW from the disposal of assets used to provide infrastructure services. For the MDB valleys, WaterNSW did not receive any revenue from the disposal of regulated assets in the 2014-17 pricing period. For the coastal valleys, WaterNSW also did not receive any revenue from the disposal of regulated assets in the 2010-17 period.

11.3.5 Indexation of RAB and closing RAB values

Further to the steps outlined above, WaterNSW has proposed to uplift the value of the opening RAB by June to June actual CPI in each year of the 2014-17 regulatory period (and the 2010-17 period for the coastal valleys). This is consistent with the approach adopted by IPART in its determination of Greater Sydney bulk water charges.[51]

11.3.6 Opening RAB for the 2017-18 to -2021 regulatory period.

Table 70 below outlines the inputs to the RAB roll forward methodology and the closing RAB values for each year of the preceding ACCC regulatory period.

[51] IPART (2016) Review of prices for WaterNSW From 1 July 2016 to 30 June 2020 Water — Final Report, June 2016, p.42.

Table 70 RAB roll forward methodology - inputs and closing RAB values for each year of the preceding ACCC regulatory period

Step 1 - RAB Roll Forward (nominal)				
$'000	**13-14**	**14-15**	**15-16**	**16-17**
Opening RAB	649,018	700,819	716,719	748,183
+ Capex/Additions	40,562	19,289	28,620	51,420
- Depreciation	8,944	14,123	15,433	16,629
- Disposals	0	0	0	0
+ Indexation	20,183*	10,734	18,276	19,347
Closing RAB	700,819	716,719	748,183	802,321

11.4 Forecast RAB

To calculate the forecast RAB, WaterNSW has calculated the starting RAB as at 1 July 2017 using the RAB roll forward methodology described above, and rolled forward the starting RAB to the end of the 2017-21 regulatory period using forecast capital expenditure, asset disposals, depreciation and inflation.

A summary of the forecast RAB values for the 2017-21 regulatory period is shown in Table 71 below.

Table 71 Forecast RAB values for the 2017-21 regulatory period

WaterNSW Forecast RAB – All valleys (2016-17$)				
$'000	**17-18**	**18-19**	**18-20**	**20-21**
Opening RAB	802,321	849,920	882,695	912,448
+ net capital expenditure	63,747	49,690	47,641	32,630
- depreciation	15,389	16,306	17,102	17,746
- disposals	759	610	786	635
+ indexation	0	0	0	0
Closing RAB	849,920	882,695	912,448	926,696

11.4.1 Forecast capital contributions

WaterNSW has included in the forecast RAB capital expenditure that is intended to be financed by WaterNSW. The forecast capital expenditure has been input into the IPART model on an as incurred basis, consistent with the calculations in the IPART model for the depreciation and return on capital allowance. The capital expenditure forecasts are consistent with those in section 13.1.1 below.

11.4.2 Forecast depreciation

The ACCC Pricing Principals state that fixed assets should be depreciated using the straight line methodology. However, the regulator may adopt a different approach to depreciation where WaterNSW can justify a departure from this method or where it is appropriate for the regulator to do so.

Consistent with past regulatory practice, WaterNSW has applied the straight line depreciation method as the basis for calculating the forecast depreciation. The straight line depreciation method ensures that the value of WaterNSW's asset are depreciated in equal instalments over their useful life.

In arriving to the depreciation amounts for the 2017-21 regulatory period, WaterNSW has calculated, at a valley level, estimates for the lives of existing and new assets. WaterNSW then calculated the allowance for regulatory depreciation by dividing the RAB by the weighted average asset lives of each valley.

11.4.2.1 Estimate life of existing assets

The valley based approach to determining asset lives was introduced by the ACCC in its 2014-17 price review. This approach is different to the methodology adopted by IPART in its 2010-14 price review, where the estimate of the average remaining life of existing assets was set at the corporate level.

WaterNSW has adopted the estimates of the average life of existing assets, as determined by the ACCC in the ACCC 2014 Decision, updated for actual capital expenditure during the 2014-17 period.

11.4.2.2 Estimate life of new assets

For new assets, WaterNSW has calculated the average life of existing assets using the sum of the weighted average life of new assets in each capital expenditure category.

The average life estimates for the 2017-21 regulatory period by valley are summarised below.

Table 72 Average life of asset estimates for the 2017-21 regulatory period

WaterNSW Proposed Average Life of Assets 2017-2018				
Valley	Remaining Assets		New Assets	
	User share	Government share	User share	Government share
Border	55	52	50	80
Gwydir	59	56	40	80
Namoi	58	57	31	100
Peel	64	72	41	92
Lachlan	48	55	60	83
Macquarie	55	56	58	80
Murray	44	42	56	80
Murrumbidgee	41	36	67	80
Lowbidgee	75	0	80	0
North Coast	74	77	62	80
Hunter	74	76	58	80
South Coast	74	81	68	80
Fish River	68	0	65	0

11.4.3 Forecast disposals

WaterNSW is forecasting revenue from the disposal of regulated assets in the 2017-21 pricing period of approximately $700,000 per annum from the disposal of vehicles and minor assets. The estimated gross revenue has been reduced from the RAB in the relevant year.

11.4.4 RAB tables by valley

The proposed RAB values for each valley from the period 2014-15 to 2020-21 is shown in Appendix B.

12. Rate of return on capital

Under section 3.3 of the ACCC Pricing Principles, the regulator is expected to set a rate of return on WaterNSW's regulated capital investment. The determined rate of return is intended to reflect the benchmark industry cost of capital, also known as the weighted average cost of capital (WACC).

If the WACC is set at a rate that is lower than the benchmark industry rate, this may diminish the incentives for continued investment in bulk water infrastructure. If the WACC is set at a rate that is higher than the benchmark industry rate, the appropriate incentives might not exist for industry participants to act in a prudent and efficient manner.

The WACC is multiplied by the RAB values (see section 11) to arrive at the return on capital building block component for customer charges. The return on capital component contributes approximately 31 per cent of WaterNSW's total revenue requirement for the rural valleys.

For the MDB valleys, WaterNSW is proposing a post-tax nominal WACC of 5.9 per cent, down from 6.92 per cent in the 2014-17 regulatory period, and consistent with the ACCC Pricing Principles.

For the coastal valleys, WaterNSW is proposing a post-tax nominal WACC of 7.5 per cent consistent with the IPART methodology set out in IPART's final report on the *Review of WACC Methodology* December 2013.

This section describes WaterNSW's proposed WACC and WACC parameters to apply in the MDB and coastal valleys for the 2017-21 regulatory period.

12.1 WACC requirements – MDB valleys

Upon IPART accreditation as a regulator under the WCIR, the ACCC imposed certain conditions for IPART to conduct the pricing reviews under the WCIR. These conditions include that IPART must apply the pricing principals as published by the ACCC from time to time[52]. The rationale for this condition is to ensure that multiple regulators across the MDB apply one set of pricing principals to all determinations under the WCIR.

The ACCC Pricing Principles are prescriptive on the method of setting the WACC. Therefore, WaterNSW's WACC proposal does not deviate from the specific requirements set out in ACCC Pricing Principles for the MDB valleys.

Section 3.3.1 of the ACCC Pricing Principles require the WACC to be calculated by summing the weighted average of debt and equity held by a company multiplied by the cost of debt and equity, as follows:

$$WACC = k_e \frac{E}{V} + k_d \frac{D}{V}$$

Where:

K_e = the cost of equity

K_d = the cost of debt

E/V = market value of equity as a proportion of the total market value of the firm

D/V = the market value of debt as a proportion of the total market value of the firm

Table 73 below sets out the WACC variables and parameters as per the WACC formula, and Table 74 sets out WaterNSW's proposals in respect of each variable and parameter.

[52] See section 2.4 of the ACCC Final Decision, IPART Application for accreditation under Part 9 of the Water Charge (Infrastructure) Rules 2010, 23 September 2015

Table 73 WACC parameters for MDB valleys

Weighted Average Cost of Capital – WACC parameters - MDB			
WACC variables	**Pricing principles[53]**	**Prescribed WACC parameters**	**WaterNSW proposal**
Cost of Equity	Cost of equity is derived by the risk free rate plus the market risk premium above the risk free rate, which is multiplied by an equity beta	The risk free rate is based on the yield of a 10 year Commonwealth Government Securities bond, using an average period of between 10-40 business day period commencing as close as practically possible to the start of the regulatory period. The equity beta is 0.7. The market risk premium is 6% (see page 28 of the ACCC Pricing Principles)	Risk free rate of 2.4 per cent which is a 40 day measure as of 30 May 2016, as reported by the RBA.[54] Market risk premium of 6%. Equity beta of 0.7.
Cost of Debt	Cost of debt is the sum of the risk free rate and a margin for debt	The risk free rate is as above. The margin for debt is based on the yields of BBB+ rated corporate bonds with 10 year maturity. A debt margin based on BBB+ rated corporate bonds with a 10 year maturity was considered by the ACCC to be the generally accepted regulatory practice at the time the ACCC pricing principles were compiled (2011), which was previously adopted by the Australian Energy Regulator (AER) according to the ACCC pricing principles. The BBB+ rating was considered by the ACCC and the AER to represent an appropriate credit rating for a commercially operated business.	Risk free rate of 2.4 per cent, as above. Debt margin of 2.9 per cent which is based on the RBA's 10 year credit spread of BBB rated corporate bond yields, as published by IPART in its February 2016 market update.[55] In the ACCC 2014 Decision, the ACCC determined the debt margin using a BBB credit rating, instead of BBB+ due to data accuracy issues. We noted that the RBA has published yields and credit spreads only for each of the broad credit bands such as BBB, instead of specific credit bands such as BBB+. Reliance on RBA data is considered best practice and has been adopted by regulators including IPART. On this basis, we are proposing to adopt the BBB rated corporate bond yields data as reported by the RBA as the basis of setting the debt margin parameter of the WACC.
Market value of Equity as a proportion of the total market value of the firm	This is 40% of the market value of the firm	This is 40% of the market value of the firm	40% of the market value of the firm
Market value of Debt as a proportion of the total market value of the firm	This is 60% of the market value of the firm	This is 60% of the market value of the firm	60% of the market value of the firm

[53] Section 3.3.1 Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010
[54] Interest Rates and Yields – Money Market – Daily – F1 from http://www.rba.gov.au/statistics/tables/index.html
[55] Table 1 IPART WACC Biannual Update February 2016 from http://www.ipart.nsw.gov.au/files/sharedassets/website/shared_files/information_management_-_policy_-_biannual_utility_price_increases_-_sea/fact_sheet_-_wacc_biannual_update_-_february_2016.pdf

Table 74 Weighted Average Cost of Capital calculation

Weighted Average Cost of Capital calculation								
Cost of Equity	=	2.4 per cent risk free rate	+	0.7 equity beta	X	6.0% market risk premium	=	6.6 % cost of equity (nominal post-tax)
Cost of Debt	=	2.4% risk free rate	+	2.9% debt margin			=	5.4 % cost of debt (nominal pre-tax)
WACC	=	6.6% cost of equity x 40 per cent of the market value of the firm	+	5.4 % cost of debt x 60 per cent of the market value of the firm.			=	5.9% nominal vanilla post tax nominal WACC, down from 6.92% in the 2014-17 regulatory period.

12.2 Coastal valley proposed WACC parameters

As the ACCC Pricing Principles do not apply to the Coastal Valleys, we are required to apply the IPART approach to setting the WACC. In its final report on the *Review of WACC Methodology* December 2013[56], IPART determined a 3-stage process in setting the WACC for the industries it regulates:

1. Establish a WACC range and midpoint by estimating a feasible range based on long-term averages and a feasible range based on current market data; using the midpoints of these 2 feasible ranges as the upper and lower bounds of the WACC range; and using the average of these midpoints as the midpoint of the WACC range.

2. Choose a WACC point estimate within the WACC range based on IPART's WACC decision rule. The decision rule is as follows:

    a. If the uncertainty index is within or at 1 standard deviation from the long term average of 0, IPART will select the midpoint WACC.
    b. If the uncertainty index is more than 1 standard deviation from the long –term average of 0, IPART will consider moving away from the midpoint WACC.

3. Specify the point estimates for the cost of debt and the cost of equity, and the evidence IPART considered in choosing the WACC point estimate.

In the 2016 Draft Report on the *Review of prices for WaterNSW* in Greater Sydney[57], IPART concluded that the current uncertainty index threshold has not been exceeded. On this basis, IPART decided to use the existing 50:50 weighting of the long-term and current WACC estimate.

Therefore, WaterNSW has proposed to adopt the post-tax nominal WACC of 7.5% (4.9% post tax real) in the IPART February 2016 market update[58] using the existing 50:50 weighting of long-term and current WACC estimates for water industry.

[56] http://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_report_-_review_of_wacc_methodology_-_december_2013.pdf
[57] Page 98 C.2 2016 Draft Report on the *Review of prices for WaterNSW* in Greater Sydney from http://www.ipart.nsw.gov.au/files/sharedassets/website/shared_files/pricing_reviews_-_water_services_-_metro_water_-_legislative_requirements_-_sydney_catchment_authority_-_pricing_investigation_commencing_from_1_july_2016/draft_report_-_review_of_prices_for_waternsw_-_from_1_july_2016_to_30_june_2020.pdf
[58] IPART (2016), *WACC Biannual Update*, February 2016.

13. Proposed capital expenditure

13.1 Overview of proposed capital expenditure requirements

WaterNSW is proposing total (gross) capital expenditure program for the rural valleys and the Fish River Scheme of $193.7M over the 2016/17 to 2020/21 period.[59] This level of capital expenditure has been developed to ensure that we meet our legislative obligations and needs of customers. Our capital expenditure program has been designed to align with effective and efficient management of risks and benefits to customers.

In this proposal we are seeking approval for the overall capital expenditure program and not for individual projects.

Our proposed capital expenditure requirements are based on the strategic directions in our long term capital investment plan.

13.1.1 Total proposed capital expenditure by high level category

Water infrastructure assets are generally long lived assets that provide economic benefits to future customers as well as existing customers. The RAB model (as discussed in section 11) ensures that current and future customers contribute to the costs of prudent and efficient capital investment by WaterNSW through an allowance for straight line depreciation and a rate of return on capital investment.

Capital investment that is not financed by WaterNSW (for example, grant funding by Government or a customer contribution) does not enter the RAB and is not paid for by customers over the life of the asset. However, externally funded capital expenditure may impact on customer charges. For example, the investment may impact on our operating expenditure requirements or the allocation of shared costs between regulated and non-regulated activities.

We are not anticipating externally funded capital investments on our regulated asset over the upcoming determination period. This section only presents our forecast capital investment on regulated assets that is intended to be financed by WaterNSW.

The total capital expenditure has been allocated between user and government shares applying the IPART cost share ratios (as discussed in section 10.6.1). A summary of the total capital expenditure is shown in the Table 75 below.

Table 75 Summary of total capital expenditure (real $ 2016-17, $000s)

Capital Expenditure Investment Categories					
$000s	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**
User share	41,058	43,724	33,314	30,586	148,682
Government share	22,689	5,967	14,327	2,044	45,026
Total capital expenditure	63,747	49,690	47,641	32,630	193,708

As shown in the table above, the user share of proposed capital expenditure is $149 million and government share is $45 million.

Our capital expenditure requirements over the 2016-17 to 2020-21 period comprises four high level categories which reflect “capability” drivers. These categories are closely aligned with previous WaterNSW categories but have been renamed to better reflect the drivers. The previous categories are:

- Dam safety compliance – pre 1997 construction
- Environmental planning and protection
- Renewals and replacements
- Water delivery and other operations

[59] This excludes any projects for MDBA/BRC which are treated as operating expenditure.

- Corporate systems.

The renamed investment categories are:

- Maintaining capability
- Augmenting capability
- New capability
- Regulatory compliance activities.

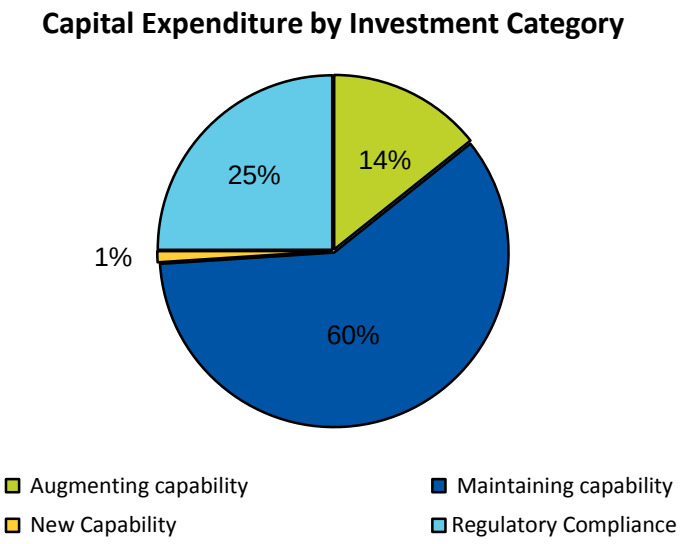
The gross capital expenditure requirement for each year of the next regulatory period is shown in Table 76 below. The proposed gross capital expenditure requirements include the total of user and Government shares by high level category.

Table 76 Proposed gross capital expenditure by new high level categories ($2016/17 '000)

Capital Expenditure Investment Categories					
$000s	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total-**
Augmenting capability	9,998	10,252	4,435	2,966	27,652
Maintaining capability	29,885	31,812	27,305	26,630	115,632
New Capability	261	857	705	155	1,978
Regulatory Compliance - Dam Safety	20,482	3,534	12,187	10	36,213
Regulatory Compliance - Environmental	260	0	0	0	260
Regulatory Compliance - Health and Safety	2,862	3,235	3,009	2,868	11,974
Total capital expenditure	63,747	49,690	47,641	32,630	193,708

As shown, in the Figure 16 below, 60 per cent of capital expenditure relates to maintaining capability; followed by regulatory compliance at 25 per cent; augmenting capability at 14 per cent and new capability at 1 per cent.

Figure 16 Proposed proportion of capital expenditure per high level category



These drivers are a shift away from the traditional activities presented in previous pricing proposals and reported to IPART and the ACCC. We have mapped the renamed categories back to the previous categories and the associated IPART cost share ratios. The map and user shares are set out in Table 77 below.

Table 77 Mapping of the renamed categories and user share to previous categories

Renamed capital expenditure category	User share	Previous category	User share
Augmenting Capability	50% to 100%	• Corporate systems • Water delivery and other operations • Flood operations • Asset Management and Planning • Structural and other enhancements. • Information Management Projects	100% 100% 50% 100% 100% 100%
Maintaining Capability	50% to 100%	• Corporate Systems • Renewal and Replacement • Flood operations • Asset management and planning • Structural and other enhancements • Information Management Projects • Routine Maintenance	100% 90% 50% 100% 100% 100% 100%
New Capability	100%	• Water delivery and other operations • Asset Management and Planning • Information Management Projects	100% 100% 100%
Regulatory compliance – Dam Safety	0% to 50%	• Dam safety compliance – Pre 1997 construction • Dam safety compliance – post 1997 construction • Asset Management and Planning	0% 50% 100%
Regulatory compliance – Environmental	50% to 100%	• Environmental Planning and Protection • Asset Management and Planning	50% 100%
Regulatory compliance –Health and Safety	90% to 100%	• Renewal and Replacement. • Asset management and planning • Routine Maintenance	90% 100% 100%

Therefore our proposed capital expenditure categories will retain the IPART methodology for cost share splits and will not result in an increase in cost burden to customers or the Government.

13.1.2 Forecast capital expenditure by valley

The proposed capital expenditure for each of the valleys is shown in the table below. These proposed amounts have been incorporated into our proposed bulk water services charges for each valley. The proposed gross capital expenditure by valley is shown in Table 78 below.

Table 78 Proposed gross capital expenditure by valley for 2017-18 to 2020-21 ($2017-18 '000)

Total Capital Expenditure by valley (2016-2017 $)					
$'000	2017-18	2018-19	2019-20	2020-21	Total
Border	273	277	372	215	1,137
Gwydir	3,785	3,813	2,501	1,971	12,070
Namoi	23,931	7,958	15,494	2,260	49,643
Peel	1,156	955	573	574	3,258
Lachlan	6,685	5,965	4,948	4,183	21,780
Macquarie	4,352	4,510	2,770	4,049	15,682

Murray	1,908	2,049	1,479	1,448	6,884
Murrumbidgee	11,724	11,655	9,857	9,637	42,872
Lowbidgee	2,405	2,706	2,516	2,398	10,024
North Coast	390	566	519	302	1,777
Hunter	1,903	2,838	2,358	1,728	8,826
South Coast	307	448	565	280	1,601
Fish River	4,930	5,950	3,688	3,586	18,154
Total	63,747	49,690	47,641	32,630	193,708

Table 79 sets out the proposed user share of capital expenditure by valley and Table 80 below sets out the proposed government share of capital expenditure by valley.

Table 79 Proposed user share of capital expenditure by valley for 2017-18 to 2020-21 ($2016/17 '000)

Total User Share Capital Expenditure by valley (2016-2017 $)					
$'000	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**
Border	253	257	360	197	1,066
Gwydir	3,617	3,666	2,337	1,869	11,489
Namoi	4,163	4,298	3,196	2,156	13,814
Peel	875	914	538	541	2,868
Lachlan	5,802	5,547	4,566	3,843	19,759
Macquarie	4,054	4,227	2,550	3,707	14,538
Murray	1,788	1,919	1,361	1,335	6,403
Murrumbidgee	10,751	10,697	9,005	8,826	39,279
Lowbidgee	2,405	2,706	2,516	2,398	10,024
North Coast	365	524	472	278	1,639
Hunter	1,769	2,608	2,213	1,594	8,184
South Coast	284	412	512	256	1,465
Fish River	4,930	5,950	3,688	3,586	18,154
Total	41,058	43,724	33,314	30,586	148,682

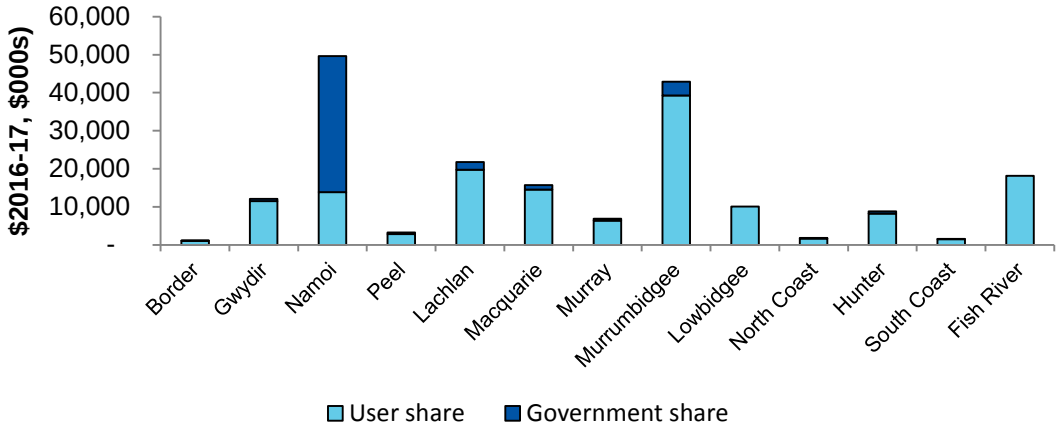
Table 80 Proposed Government share of capital expenditure by valley for 2017-18 to 2020-21 ($2016/17 '000)

Total Government Share Capital Expenditure by valley (2016-2017 $)					
$'000	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**
Border	20	20	12	18	71
Gwydir	168	147	164	102	581
Namoi	19,767	3,660	12,299	104	35,829

Peel	280	41	36	34	390
Lachlan	882	417	382	340	2,021
Macquarie	297	283	220	342	1,144
Murray	119	131	119	112	481
Murrumbidgee	972	958	852	811	3,593
Lowbidgee	0	0	0	0	0
North Coast	25	42	46	24	138
Hunter	134	230	145	134	642
South Coast	23	37	53	24	136
Fish River	0	0	0	0	0
Total	22,689	5,967	14,327	2,044	45,026

The allocation of total capital expenditure between users and government for the 2017-18 to 2020-21 period is shown in Figure 17 below.

Figure 17 Allocation of total capital between users and government for the period 2017-18 to 2020-21



As shown, users provide the most significant contribution to capital expenditure except in the Namoi valley due to the NSW Government's contribution to the Keepit Dam Safety Upgrade. More detail about this project is provided in section 13.4.4.

13.2 Internal budget and capital planning processes

13.2.1 Overview of capital expenditure prioritisation principles

WaterNSW prioritises capital works according to a number of criteria aligning with a general approach to the effective and efficient management of risks and benefits for customers and community.

Primary drivers are as follows:

- reduction of risk of asset related failure to the organisation, customers, and the community
- maintaining the required levels of service to customers
- reduction in health and safety related risks to our staff, customers and community
- reduction of risks associated with non-compliance with regulatory requirements.

The intent is to ensure that WaterNSW has the right asset capability to meet our obligations to customers, delivering service at the required level.

Guiding principles apply to the identification, prioritisation and scheduling of capital works, which are embedded in the respective processes:

- all investment is justified against a “do nothing” scenario. This means that capital investment projects are required to “pay their way”
- investment analyses consider whether an asset is still needed. Retirement or disposal is always a possibility
- WaterNSW adopts a policy of “latest possible intervention” whilst being sensitive to asset criticality, regulatory compliance requirements, and life cycle costing considerations
- customer interests are always considered - ‘should our customers be paying for this?’ is a core consideration of the capital planning process.

The above principles are embedded in the WaterNSW capital planning process, as well as the internal capital expenditure governance arrangements.

These processes aim to deliver an appropriate level of service to our customers for the least possible cost, whilst managing the risk to the organisation, customers and stakeholders to an acceptable level and maintaining regulatory compliance.

13.2.2 Overview of capitalisation policy

WaterNSW reviewed and issued an updated capitalisation policy known as the Non-Current Asset Procedure in June 2015. This procedure aims to ensure that:

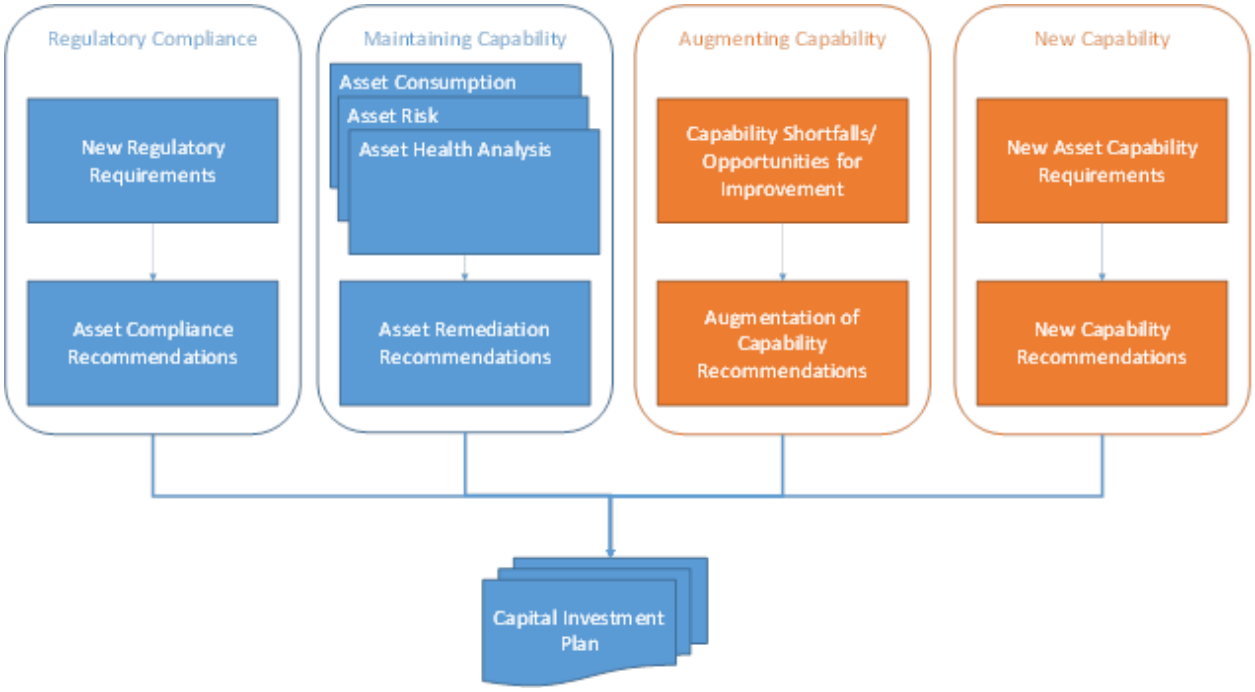
- accounting for non-current assets such as the ongoing recording, depreciation and impairment of such assets is conducted in accordance with relevant pronouncements of the Australian Accounting Standards Board (AASB), New South Wales Treasury and other relevant agencies
- WaterNSW makes appropriate distinction between operating and capital expenditure for financial reporting purposes
- capital expenditure is appropriately and accurately recognised in the financial statements of WaterNSW.

The procedure provides guidance on the treatment of non-current assets.

13.3 Drivers of proposed capital expenditure

Figure 18 below represents in simple terms how renamed investment categories or capital drivers flow through to the development of the capital investment plan (which provides a 10 year plan for investment).

Figure 18 Capital Investment Drivers and their relationship with the Capital Investment Plan



13.3.1 Maintaining Capability

Capital expenditure to 'maintain capability' is driven by assessment of assets against the WaterNSW Asset Health Standards. These asset health standards include assessments of physical condition, functional reliability of equipment, technical and commercial obsolescence, serviceability and regulatory compliance.

Asset health data assembled through various means is then analysed using the WaterNSW risk based investment process to determine the optimal point at which intervention should occur.

13.3.2 Augmenting Capability

This driver is characterised by the need for the organisation to respond to emerging or expanding customer requirements and emerging market conditions.

This will involve investment in the asset base to alter the capability of assets in some way to deliver services. The scale of these augmentations can vary from the installation of automation on flow regulating structures up to increasing capacity to major storages (eg. the recent Chaffey Dam augmentation). For the project to be considered augmentation there must be a material increase to an existing capability for delivering a service.

13.3.3 New Capability

This driver is characterised by responding to needs or opportunities to deliver services or provide a capability of a nature which was not previously available.

New capability projects are often in response to broader changes in the water market in NSW. Very large "capability augmentations", such as the construction of new dams in existing regulated valleys are also more usefully categorised as 'New Capability'.

13.3.4 Regulatory Compliance

The cost driver is to comply with existing regulatory requirements. We have regrouped regulatory requirements into three categories:

- Regulatory Compliance – Dam Safety. This includes dam safety compliance including compliance for capital projects pre 1997
- Regulatory Compliance – Environmental

- Regulatory Compliance – Health and Safety.

The most significant of these cost drivers relates to dam safety. WaterNSW must manage its dams in accordance with government legislation. Until recently, WaterNSW operated to meet NSW Dams Safety Committee requirements set under the *Dams Safety Act 1978 (NSW).* Now, the new *Dam Safety Act 2015 (NSW)* provides the framework for dam safety. It is intended to underpin a new dam safety regulatory framework. The government is currently consulting on the implementation of the reforms and therefore there may be changes to future dam safety requirements. At this stage we do not have certainty about the cost implications for WaterNSW arising from the new regime.

Regulatory Compliance – Environmental represents capital expenditure to comply with relevant environmental protection legislation. The costs have historically been predominantly driven by obligations under section 218 of the *Fisheries Management Act 1994* (*NSW)* to provide for fish passages or offset equivalents arising from dam safety upgrades. The program was suspended due to customer feedback on escalating fishway construction costs and willingness to pay following WaterNSW's pricing submission. In the ACCC 2014 Decision, the ACCC determined less funding than we requested for our broader capital works program. This meant that no single valley had sufficient funds to complete the whole of the intended scope of the fish passage program, which lead to a broader reprioritisation.

Following a subsequent request from the former Minister for Primary Industries, The Honourable Katrina Hodgkinson MP, WaterNSW substituted the fishways program for other planned works, whilst finalising discussions with Fisheries NSW on developing a least cost, long-term strategy to fish passage management. We may need to update our pricing proposal based on the outcomes of these discussions which are nearing finality at the time of preparing this pricing proposal.

The primary trigger for Regulatory Compliance - Health and Safety is for the application of current health and safety requirements to WaterNSW assets. This category maps to the previous renewal and replacement category.

13.4 Rationale for requested capital expenditure

In this section we set out the rationale for expenditure in each of the program categories and provide major projects.

13.4.1 Maintaining Capability

As discussed above, expenditure to maintain asset capability is to ensure that the WaterNSW asset base is able to deliver the levels of service as required in regulatory obligations.

The sustainable investment for each valley has been modelled based upon estimates for the optimal times of intervention, at the individual asset level, which are themselves based upon various condition and risk triggers.

This modelling then guides a sustainable level of investment to offset asset deterioration (or asset consumption), which is aggregated at a valley level.

WaterNSW first calculates an "Annual Rate of Asset Consumption" to establish a theoretical upper limit 'benchmark', and which reflects the approximate annual investment rate needed to maintain assets in an 'as new' condition. It is simply the Modern Engineering Equivalent Replacement Asset (MEERA) value, divided by its useful life.

This is considered an upper bound threshold given that in practice maintenance and renewal activity to extend an asset's useful life often costs less than total asset replacement at the end of life, but recognising that some long life assets approaching the end of their remaining useful life will require complete replacement.

For assets that that do not trigger renewal or replacement criterion, an "Annualised Risk Cost" is calculated which represents the risk being borne from assets in their current state.

When viewed in the context of our risk based investment approach to asset management, annualised risk cost is captured when:

- corporate thresholds for risk tolerability are exceeded; or
- if the annualised cost of the risk being borne by the asset in its current condition is greater than the cost of financing an intervention (WACC), then intervention is considered a prudent and efficient response.

A proposed investment portfolio is then derived which reflects a combination of three consumption triggers, namely:

- investment needed to replace assets which have failed, or are projected to exceed their useful life within the next price path
- investment needed to renew assets which are projected to approach their remaining useful life within the next price path
- investment needed to offset the known asset related risks which exceed the acceptable corporate risk thresholds.

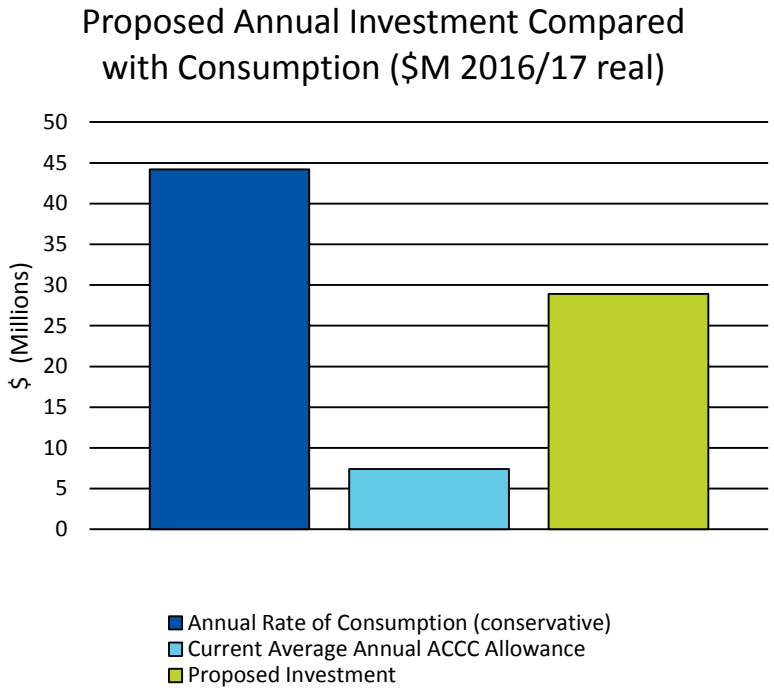
The combined maintaining capability program for the four year regulatory period is approximately $115 million (not including ICT which is discussed below in section 13.4.2), which is noted to be a significant increase from the previously approved three year renewals program of $19 million (in nominal terms) for MBD valleys.

Contributing factors to the increased expenditure required to Maintain Capability include:

- greater management scrutiny on asset compliance with corporate standards for Work Health and Safety, resulting in an increased spend to address non-compliant assets
- intergenerational life cycle costs are at their highest levels as a result of significant capital investment in rural water infrastructure assets built for irrigation and economic growth in the 1960s and 1970s. The infrastructure is reaching the end of their original useful lives (viz: 60 years), and which now require either complete replacement, or renewals of major components to prevent asset failure
- a reduction in regulatory compliance related projects with larger government funding share. Many regulatory compliance projects include re-engineering or modifying existing assets. Activities such as strengthening dam gates, installing a parapet wall or constructing a fishway often result in improvements to the condition of the original asset. These have in a way been ‘incidental renewals’ which have reduced the burden on customers who would have had to pay for standalone renewals otherwise. Consequently with the reduction of regulatory compliance capital expenditure, there is an increase in customer funded renewals.

Figure 19 below shows the annual rate of consumption of assets against the current annual average allowance provided for in the ACCC 2014 Decision.

Figure 19 Annual rate of consumption relative to proposed investment



* The current average annual ACCC allowance includes budgeted replacement and renewals expenditure for the Coastal valleys (as determined by State Water in 2014). Note: IPART did not set a capital expenditure allowance for the coastal valleys for the period 2014-15 to 2016-17.

As shown above, WaterNSW is consuming assets faster than we are able to re-invest to maintain capability. This can be explained as follows:

- Annual Rate of Consumption - The annual rate of consumption is a theoretical benchmark focused on depreciation. It represents an indicative upper bound estimate of the appropriate level of investment. It is determined summing the replacement value of each asset divided by its useful life (determined by asset condition). This represents a theoretical long term sustainable investment to retain the asset base in a condition to maintain the asset base in the 'as commissioned' level of service. It is considered an upper bound because 'end of life' interventions are often not equivalent to the replacement cost of the asset
- Current ACCC Average Allowance - As can be seen this forms a small fraction of the annual rate of consumption index.
- Proposed Investment. This is the modelled level of investment which is prudent and efficient to offset the 'consumption' of the asset base. This is determined through analysis of asset condition, criticality and operational needs. It is based upon deferral of intervention to the most efficient point, maximising asset life, whilst maintaining risks to an appropriate level.

13.4.2 Augmenting Capability

The proposed capital expenditure for Augmenting Capability is primarily driven by the need to upgrade IT (water ordering improvements) and SCADA systems improvements (instrumentation and automation).

The WaterNSW merger of State Water Corporation and the Sydney Catchment Authority has created an ICT environment that is outmoded and highly complex to support. To remove duplication and improve efficiencies WaterNSW has started a rolling program of ICT hardware renewals, which is being undertaken in the context of the ongoing ICT improvement initiatives.

Major projects related to Augmenting Capability for the 2017-18 to 2020-21 period are shown in Table 81 below.

Table 81 Major projects Augmenting Capability ($2016-17, $ millions)

Project Name	Description	Value
Communications Strategy & Implementation	A State-wide strategy to ensure that communications systems for WaterNSW sites are fit-for-purpose and comply with WaterNSW corporate standards.	$5.47m
Water NSW ERP Software Implementation	Implementation of an Enterprise Resource Planning software solution which will be a core enabler for improved business processes at WaterNSW.	$3.59m
Operational Systems Program	Development of a system to allow for improved centralised operation of WaterNSW water infrastructure. Leverages off telemetry and automation provided by the iSmart program.	$6.18m
CO WMAWAS - Separation and Rewrite	Implementation of an improved Water Accounting Software solution.	$7.77m

* Further information on the methodology and rationale (as per the IPART agency submission guidelines) that was used to develop these forecasts will be provided to IPART as part of the opex/capex review.

13.4.3 New Capability

WaterNSW is proposing approximately $2 million for 'new capability' category in the MDB valleys for the 2017-21 regulatory determination. This is mostly related to SCADA projects.

Some current grant funded, 'non-regulatory' initiatives, such as investigations and business cases are being developed for new dams. This forms part of the Infrastructure NSW State Infrastructure Strategy 'priority catchment' program. These initiatives fall outside of the ambit of this pricing proposal, as they do not relate to regulated assets.

13.4.4 Regulatory Compliance

WaterNSW is continuing with dam safety projects already underway in the current period. We are continuing with the Keepit Dam Safety Upgrade - phase 1 and a series of dam security upgrades. Other dam safety projects have been deferred because of potential changes to standards under the new *Dam Safety Act 2015 (NSW)* as discussed at section 13.3.4 above.

Capital expenditure requirements for health and safety have an increased focus due to older assets being transferred to WaterNSW. (For example, WaterNSW was allocated assets in Lowbidgee valley due to the buyouts that occurred under the roll-out of the MDBA Plan). Many of the assets transferred to WaterNSW need to be upgraded to current health and safety standards. We will be proposing that 90% of the cost of this category be allocated to government as it relates to the government initiatives. The exception is the Fish River Scheme which is 100% user funded.

The major project for Regulatory Compliance in the forthcoming determination period is shown in Table 82 below. [60]

Table 82 Major projects Regulatory Compliance ($2016-17, $ millions)

Project Name	Description	Value
Keepit Dam Safety Upgrade Phase 1	Completion of Dam Safety works already underway substantially comprising of the post tensioning of the concrete dam wall to improve structural integrity of the dam under seismic loads.	$35.12m

[60] Excludes "Maintaining Capability" and "Regulatory Compliance - Health and Safety" Projects for which funding is not being sought at the project level.

13.5 New approach to capital planning and delivery

13.5.1 Capital planning approach

The general approach to capital planning in this proposal is different from that of previous years in that approval is not being sought for individual projects over the determination period. This would mean that the plan will be a year old at the start of the period to which it applies and five years old by the completion of the period. This is not an approach that, in the opinion of WaterNSW, is effective for the management of a complex, widely dispersed and varied asset base.

Rather, a prudent, efficient and sustainable level of expenditure for renewals is proposed for each valley based upon identified needs, related to known and predicted asset condition, risks and operational concerns.

The intent of this change is to ensure that the appropriate level of funding is available, whilst providing the organisation the flexibility to substitute and reprioritise projects based upon need. This addresses issues which typically arise towards the end of the pricing period, where emergent needs and changed operational priorities render reconciliation to a baseline plan from the pricing submission a resource intensive, non-value adding exercise.

The proposed capital expenditure is necessary to prevent deferral of critical renewals beyond the optimal point of intervention.

As indicated previously, the WaterNSW approach to capital planning is to defer capital works to the latest point subject to criticality of the asset and operational constraints. As such, forced deferral will give rise to significantly increased costs for many of the works as well as risks to service delivery.

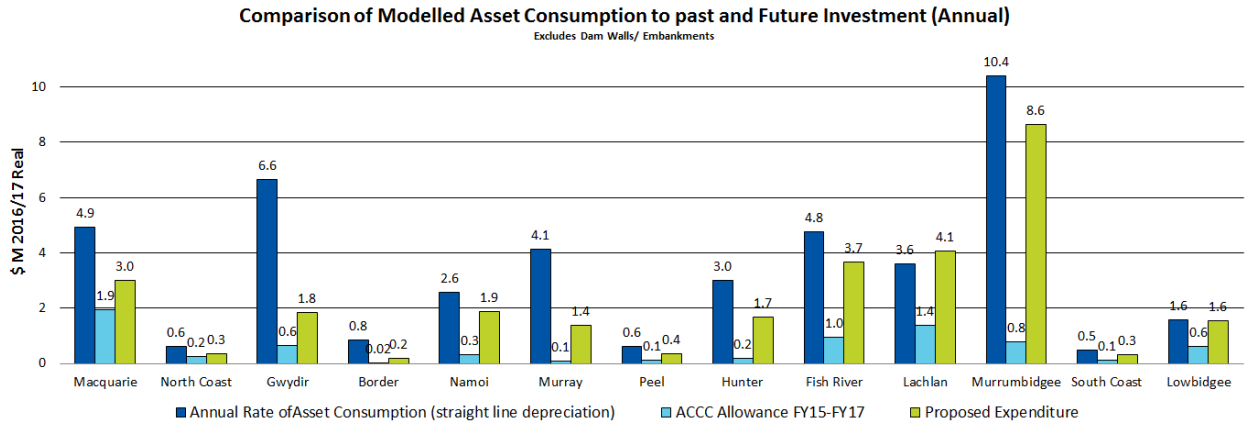
WaterNSW recognises that in order to ensure prudent and efficient delivery of the expanded program of works, an alternative procurement and delivery approach is needed to complement the new asset management and planning approach.

As a result, WaterNSW is developing a modern panel based procurement strategy, leveraging external industry expertise and capability to deliver the program.

The investment proposed has been adjusted (or smoothed) from the modelled program of works to provide a more evenly distributed capital expenditure profile across the regulatory determination period.

Apart from two major exceptions, our proposed ‘average annual’ investment is consistently lower than the annual rate of asset consumption as shown in Figure 20 below.

Figure 20 Consumption vs. investment per valley



* The average annual ACCC allowance includes the budgeted replacement and renewals program for the Coastal valleys (as determined by State Water in 2014), as a proxy for the coastal valley regulatory allowance. Note: IPART did not set a capital expenditure allowance for the coastal valleys for the period 2014-15 to 2016-17.

The Lowbidgee flood control and irrigation district and the Lachlan valley are the two exceptions due to significant Work Health and Safety (WHS) non-compliance issues emanating from recent asset audits which require a relatively large investment to correct. WaterNSW will explore other alternatives, such as asset disposal, during the detailed planning phase of this program.

13.5.2 Capital delivery

In order to effectively deliver the proposed capital expenditure program, WaterNSW is developing a modern and effective procurement strategy. The objectives of this strategy need to be viewed in the context of the outcome of the capital program over the current determination period (see section 18.4.1).

Over the last two years WaterNSW has embarked on a program of improvements to its project delivery system. This commenced with the engagement of an industry recognised Commercial Manager, which was followed by a re-organisation of WaterNSW (as result of the integration between State Water and the SCA) and the creation of a Project Management Office. These improvements have over the last two years, seen a marked improvement in projects being delivered on time and on budget. Projects such as the recently completed Metering Project ($28.96 million) and Chaffey Dam Upgrade and Augmentation ($50 million) have both been delivered on time and under budget with no lost time injuries (see Box 4 and 5 and Figure 21 below for more detail).

Box 4 – Chaffey Dam Upgrade

The Chaffey Dam Upgrade and Augmentation (Stage 2) project involved raising the dam wall to enable it to store more water (62,000ML to 100,000ML) and to secure permanent water supplies for Tamworth and Peel Valley water users. The dam was also upgraded to meet NSW Dams Safety Committee standards for extreme floods.

The project represented a significant investment of $50 million in critical water infrastructure assets in the Tamworth region. $18M of the dam safety upgrade component of the works was funded by the NSW Government. The $31.8 million augmentation component of the works was funded by the Australian Government's National Water Security Plan for cities and Towns ($18.1 million), the NSW Government ($9.7 million) and Tamworth Regional Council ($4 million). The funding agreement was finalised in May 2014.

The construction involved raising the dam wall by 8 metres and subsequent works to raise the bell mouth of the morning glory spillway. These works have increased the full supply level of the dam by 6.5 metres, meaning that when the dam is full, the water level is 6.5 metres higher than the current full supply level. A new bridge and associated road works were carried out at Bowling Alley Point to accommodate the higher water level and minimise the impact on the community.

The project followed more than a decade of consultation with the local community. WaterNSW continued to consult closely with residents through a community liaison group. This group held quarterly meetings at the dam for construction updates. These meetings also provided a platform to resolve any emerging local issues.

The project showcase WaterNSW's capacity to oversee complex capital works on critical water infrastructure, efficiently and most importantly, safely.

Box 5 – Chaffey Dam Upgrade –Benefits and Timeline

Benefits

- Ensure the dam can withstand extreme flooding
- Securing Tamworth's water supply
- Economic benefits to region through the use of local suppliers and subcontractors
- Bringing new, unique and specialised skills to the area

Timeline

February 2011 – Funding announced

December 2011 – Contract awarded for detailed design

April 2012 – Environmental assessment commenced

July 2012 – Detailed design completed

April 2014 – Environmental approval

May 2014 – Funding agreement finalised

Mid 2014 – Construction commenced

Mid 2016 – Construction completed

Figure 21 Chaffey Dam

Currently WaterNSW is developing a procurement model to deliver business as usual asset renewal and replacement capital works via a panel of contractors competing for contracts under defined performance criteria. Further, new standard contracts for minor and major projects have been drafted providing more robust clauses for site conditions and contractor performance. Project initiation and planning has also been improved with greater interaction processes between business units responsible for project identification and project delivery. This process will be further improved and enhanced via the master schedule planning function role to be managed under the Project Management Office. Together with the introduction of the planned ERP system (see Table 81 above), project reporting, cost control and issues management will result in a more immediate response to rectifying problems as they arise.

The procurement strategy is being designed in such a way as to:

- be integrated with the project initiation process to ensure efficient packaging of work
- maximise combined purchasing power of WaterNSW, whilst
- allowing flexibility for the organisation to respond to changing needs.

13.6 Customer Levels of Service Framework

Historically, discretionary projects were undertaken at the request of customers in the absence of risk based investment prioritisation across our portfolio.

This approach will in the future be replaced by the customer levels of service framework.

WaterNSW is introducing a new model to interact with and deliver customer value add products. We are proposing to introduce this model as part of our building block to our pricing submission from 2021.

This model represents a new paradigm about how we think about our interaction with customers, the assets and water supply systems. The new approach includes design criteria that customers can influence and negotiate.

The model will for the first time quantify the current levels of service our customers receive and will then provide a platform for negotiating how we bridge the gap between what they want and what they are prepared to pay.

The customer decisions in using this model will dictate to some extent the degree to which we invest in activities, conduct our maintenance regime and broader asset strategies.

The process under the new model approach will involve:

- Consulting with customers about their needs, identifying any gaps in service delivery, and distilling local issues into properly defined and scoped problem statements that can be addressed more strategically
- Scoping out the types of options to meet the needs of customers
- Developing options to present to customers taking into account various factors.
- Presenting options to customers
- Presenting the costs of the options to customers
- Negotiating and arriving at solutions to meet customer needs.

This approach intends to involve customers at an early stage to understand their needs and develop innovate options.

This approach was canvassed with both the Coastal Valley CSC and the CSC Chairs at their committee meetings in early November and at subsequent individual CSC meetings. The concept was greeted with support.

We are currently proceeding with a trial of the Customer Level of Service Framework in the North Coast. Toonumbar dam helps irrigate the Richmond Valley and supplies water to towns and farmers along Iron Pot and Eden creeks and the Richmond River. The Coastal CSC agreed for us to engage with customers in a trial of the customer levels of service framework concept. We are also liaising with DPI Water regarding these issues. We anticipate meeting with customers to commence progressing this trial in July/August 2016.

13.7 Relationship between capital and operating expenditure

In the management of infrastructure assets in general there are trade-offs to be made between capital expenditure and operating expenditure to obtain optimal life cycle outcomes. As a simple example, protective coatings for steel structures can be patch repaired throughout their lives (typically opex). However as the coating deteriorates, the cost of repairs increases, whilst the efficacy of repair work declines. As such there is a point beyond which the deferral of full recoating of a major structure (typically capex) would result in an effective escalation of average life cycle cost.

The principle of Life Cycle Cost optimisation has been considered in the development of the capital investment program.

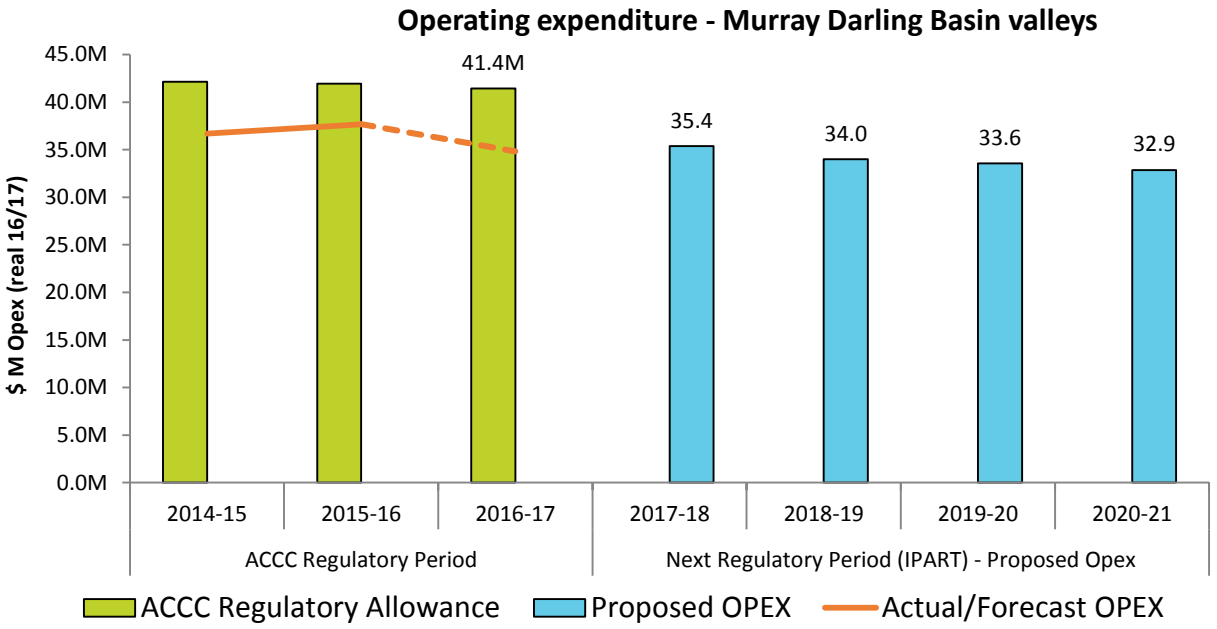
14. Proposed operating expenditure

14.1 Overview of proposed operating expenditure requirements

WaterNSW is proposing an operating expenditure of $154.9 million from 2017-18 to 2020-21. By 2020-21, WaterNSW's proposed operating expenditure will be 20 per cent lower than compared to the amount allowed by the regulator as at 30 June 2017. These significant reductions in future operating expenditure follow the recent integration and restructure of State Water and SCA. This has resulted in a step change down of operating expenditure requirements which has significantly contributed to lower prices for customers.

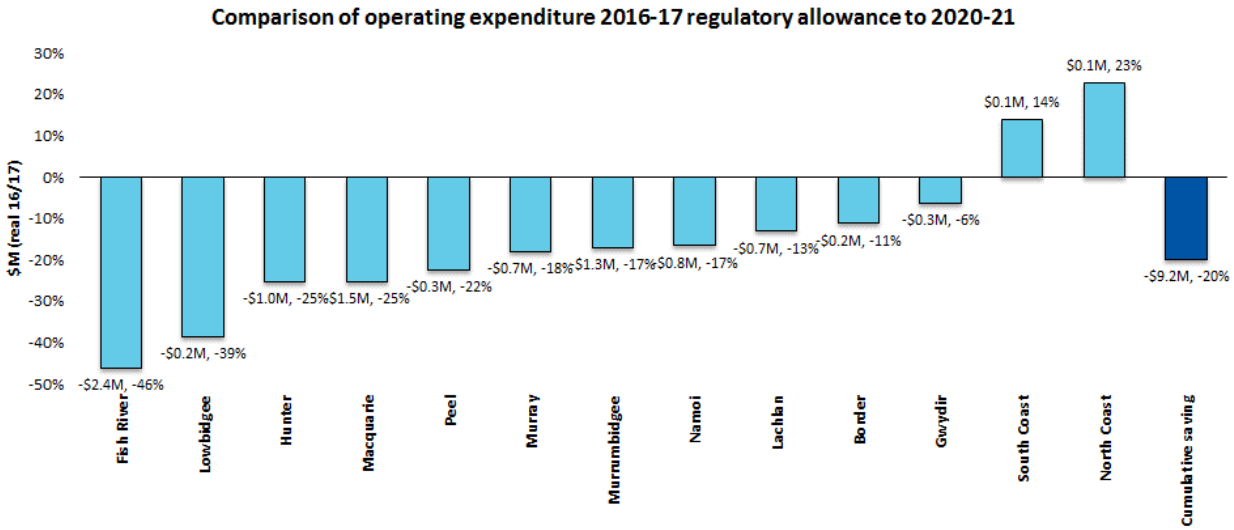
Over the current determination period, we consistently outperformed against the operating expenditure targets set by the ACCC for the MDB valleys. We are proposing to continue the trend towards lower operating expenditure in the upcoming determination period as shown in Figure 22 below.

Figure 22 Operating expenditure targets for MDB valleys



By the end of the 2017-21 determination period, we forecast that operating expenditure will be 20 per cent or $9.2 million less than the allowance in the ACCC 2014 Decision as at 30 June 2017 and IPART's previous determination for the coastal valleys as carried forward from 30 June 2013. Figure 23 illustrates these cost savings for each of the valleys.

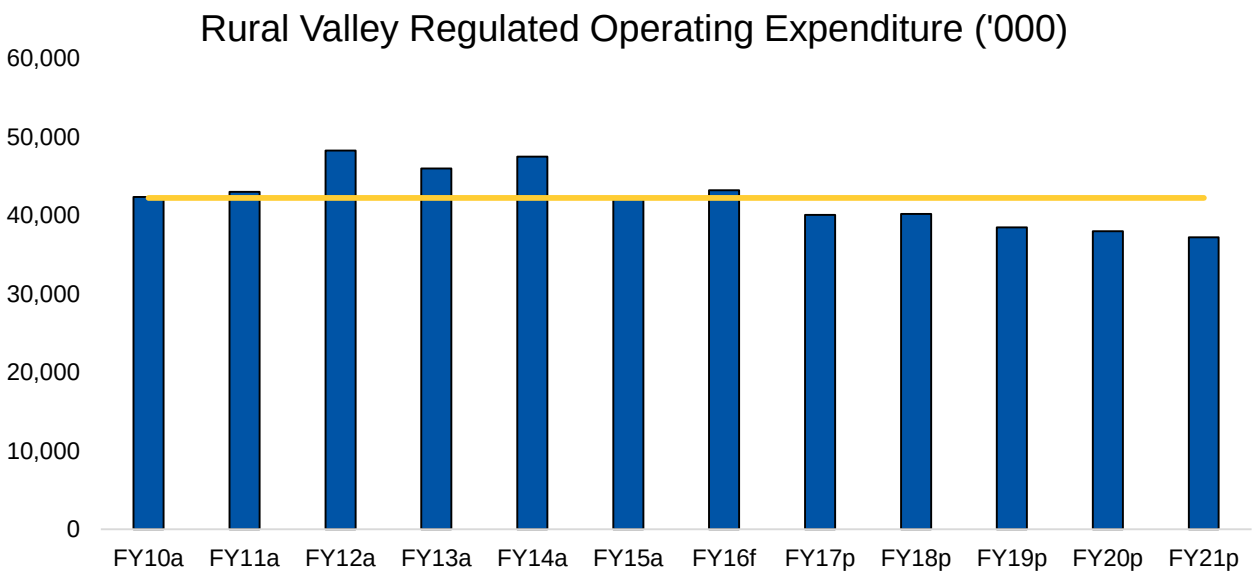
Figure 23 Comparison of operating expenditure 2016-17 regulatory allowance to 2020-21 (16/17 real $)



* Comparison of 2020-21 forecast operating expenditure excludes the debt raising cost allowance provided by the regulator. The MDB operating expenditure allowance has been sourced from the ACCC post tax revenue models in the ACCC 2014-17 MDB Price Review for State Water Corporation. The coastal valley operating expenditure allowance has been sourced from the IPART revenue models and escalated for actual CPI to 2013-14.

In the upcoming determination period, WaterNSW will be a leaner organisation compared to its predecessor. Our forecast operating expenditure at the end of the determination period will reach its lowest point in the 12 year period as shown in Figure 24 below.

Figure 24 Rural Valley regulated operating expenditure forecasts (2016-17$)



*"a" means actual, "f" means forecast, "p" means projections. Actual operating expenditure prior to FY 15 was incurred by the former State Water.

The key drivers of any increases to forecast operating expenditure are our obligations under legislation and operating licence as discussed in section 19. WaterNSW is not expecting any significant changes to these obligations other than from the new *Dam Safety Act 2015* and agreement on implementation of section 218 of the *Fisheries Management Act 1994* (which are both discussed above in section 13.3.4). However, at this stage, our efficiencies are outweighing any potential increase in operating expenditure.

The proposed operating expenditure and underlying cost drivers is presented in the following sections.

14.2 Total proposed operating expenditure by high level activities

We have presented the capital forecasts for our key expenditure categories:

- Water Delivery & Other Operations
- Flood Operations
- Hydrometric Monitoring
- Water Quality Monitoring
- Corrective Maintenance
- Routine Maintenance
- Asset Management Planning
- Dam Safety Compliance
- Environmental Planning & Protection
- Corporate Systems
- Renewals and Replacement
- Direct Insurances
- Customer Support, Compliance and Other
- Allowance for Debt Raising Costs

The following table sets out gross operating expenditure by the key expenditure categories.

Table 83 Proposed gross operating expenditure by high level activities (2016-17 real $ '000)

Total Operating Expenditure by expenditure category (2016-2017 $)							
$'000	**2015-16**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**	**User Share**
Water Delivery & Other Operations	5,654	7,101	6,563	6,337	5,970	25,972	100%
Flood Operations	291	0	0	0	0	0	50%
Hydrometric Monitoring	5,730	4,550	4,550	4,550	4,550	18,200	90%
Water Quality Monitoring	502	528	490	490	475	1,982	50%
Corrective Maintenance	3,393	2,943	2,777	2,777	2,708	11,204	100%
Routine Maintenance	12,084	9,758	9,058	9,058	8,802	36,676	100%
Asset Management Planning	3,104	1,536	1,528	1,483	1,532	6,079	100%
Dam Safety Compliance	4,749	5,157	5,084	4,971	4,793	20,005	50%
Environmental Planning & Protection	1,513	914	911	991	990	3,806	50%
Corporate Systems	0	708	682	531	629	2,550	100%
Renewals and Replacement	6	35	33	33	32	131	90%
Direct Insurances	443	0	0	0	0	0	100%
Customer Support , Compliance and Other	5,782	6,951	6,780	6,776	6,706	27,213	100%
Allowance for Debt Raising Costs*	0	263	276	286	293	1,118	n.a
Total	43,198	40,442	38,731	38,282	37,481	154,936	

* Debt raising costs are included in operating expenditure as per section 3.5 (page 43) of the ACCC pricing principles. These costs have been calculated using the IPART financial model. We have applied a debt raising cost benchmark of 0.096% per cent, which was applied by the ACCC in its 2014 Final Decision. Itemising debt raising costs as an operational expenditure line item has no effect on WaterNSW's revenues and shifts a small proportion of revenue from the return on capital to the operating expenditure allowance component of the building blocks model.

14.3 Forecast operating expenditure by valley

The following tables show proposed operating expenditure by valley on a gross (total user and government share), user share and government share.

Table 84 Proposed gross operating expenditure by valley for 2017-18 to 2020-21 ($20/17/18 '000)

Total Operating Expenditure by valley (2016-2017 $)					
$'000	2017-18	2018-19	2019-20	2020-21	Total
Border	1,335	1,366	1,371	1,349	5,421
Gwydir	4,336	4,161	4,144	4,053	16,694
Namoi	4,468	4,319	4,310	4,244	17,341
Peel	1,069	1,025	1,021	1,002	4,116
Lachlan	5,541	5,127	5,093	4,976	20,737
Macquarie	4,639	4,468	4,455	4,364	17,925
Murray	3,163	3,135	3,105	3,032	12,436
Murrumbidgee	7,428	7,046	6,731	6,609	27,813
Lowbidgee	381	362	362	354	1,460
North Coast	815	778	772	744	3,109
Hunter	3,439	3,175	3,186	3,104	12,904
South Coast	828	788	775	765	3,155
Fish River	3,001	2,981	2,958	2,885	11,825
Total	40,442	38,731	38,282	37,481	154,936

* The figures above include debt raising costs as per section 3.5 of the ACCC pricing principles and calculated using the IPART financial model. We have applied a debt raising cost benchmark of 0.096% per cent, which was applied by the ACCC in its 2014 Final Decision. The itemisation of debt raising costs as an operational expense has no effect on WaterNSW's revenues and shifts a small proportion of revenue from the return on capital to the operating expenditure allowance component of the building blocks model.

Table 85 Proposed user share of operating expenditure by valley for 2017-18 to 2020-21 ($2016/17 '000)

Total User Share Operating Expenditure by valley (2016-2017 $)					
$'000	2017-18	2018-19	2019-20	2020-21	Total
Border	1,155	1,187	1,193	1,175	4,710
Gwydir	3,986	3,818	3,804	3,728	15,337
Namoi	3,990	3,842	3,836	3,777	15,445
Peel	876	836	834	819	3,365
Lachlan	5,082	4,679	4,649	4,545	18,955
Macquarie	4,178	4,011	3,997	3,916	16,102
Murray	3,034	3,005	2,977	2,907	11,922
Murrumbidgee	6,888	6,496	6,186	6,075	25,645
Lowbidgee	381	362	362	354	1,460
North Coast	668	634	629	610	2,541

Hunter	2,914	2,680	2,677	2,609	10,879
South Coast	681	643	636	625	2,585
Fish River	3,001	2,981	2,958	2,885	11,825
Total	36,834	35,173	34,738	34,026	140,771

Table 86 Proposed Government share of operating expenditure by valley for 2017-18 to 2020-21 ($2016/17 '000)

Total Government Share Operating Expenditure by valley (2016-2017 $)					
$'000	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**Total**
Border	180	180	178	173	711
Gwydir	350	343	340	325	1,357
Namoi	478	478	473	467	1,896
Peel	193	189	187	183	752
Lachlan	459	448	444	431	1,782
Macquarie	461	457	458	447	1,823
Murray	130	131	129	125	514
Murrumbidgee	540	549	545	534	2,168
Lowbidgee	0	0	0	0	0
North Coast	147	144	142	135	568
Hunter	525	495	509	496	2,025
South Coast	147	145	138	140	569
Fish River	0	0	0	0	0
Total	3,609	3,558	3,544	3,455	14,166

14.4 Internal budgeting and operating expenditure planning processes

The internal budgeting and operating expenditure planning process is a bottom up process.

Each business unit builds up a cost of their activities by project (both operating and capital expenditure projects) including costs to maintain capability and to enhance capability.

This is a detailed process and delivers a detailed budget by project at a team level which aggregates up to a business unit level and to an organisational level.

The proposed operating expenditure is reviewed in detail by the finance team within WaterNSW. This process includes challenging assumptions made by business units and if required adjustments (including reductions) are implemented and a final position is prepared.

We also take the view that having costs included in the budget does not mean there is an inbuilt "approval to spend". All projects over a defined value need to have an "Approval to Spend" prepared and approved by the Board. The Approval to Spend process in described in Appendix C.

14.5 Drivers for proposed operating expenditure by activity

The following sets out a description of each of the main operating expenditure categories.

14.5.1 Water Delivery and Operations

A significant component of operating expenditure concerns obligations in relation to the delivery of water and operations. Water Delivery and Operations accounts for 17 per cent of total operating expenditure.

WaterNSW is responsible for the management and delivery of approximately 4,300 GL of water on average per year to over 6,000 customers across nine valleys in the Murray Darling Basin, three coastal valleys and the Fish River Scheme.

The management and delivery of water to meet customer demand requires an extensive analysis of weather patterns, river flows and crop demands.

Operators use complex river models in each of the valleys to manage releases from the storages to ensure flows in the rivers meet the requirements of customers and achieve the environmental objectives set out in WSPs and works approvals.

The environment of the MDB is changing and this places increasing pressure on the operations of the rivers with significant changes in the delivery patterns of water to meet different customer requirements. Irrigation customers require the delivery of water to a point in the river to enable them to extract. The focus of the environmental customer is on a particular hydrograph in the river to deliver environmental benefits.

WaterNSW is in the process of improving operational delivery models to provide a improve service delivery to customers. WaterNSW has developed the Computer Aided River Model (CARM) for the Murrumbidgee River System which has now moved into production. The benefits of this model are currently being monitored to assist in the development of a program for improving the operational models across all valleys. The development of more sophisticated river models across the valleys will improve river operations, drought and flood management.

Over the current determination WaterNSW was required to manage a significant drought across the northern and central river basins. The northern part of NSW and southern Queensland received below average rainfall for the past three years with the northern valley storages currently at an average of 16 per cent with very low general security allocations being provided over the past few years.

The drought has now started to extend to the southern valleys and without significant rainfall over the winter in the south drought management plans will need to be implemented in the next water year.

14.5.2 Hydrometric Monitoring

WaterNSW purchases river gauging and data management services from DPI Water. DPI Water monitors the availability and condition of surface water by measuring water level, stream flow, rainfall and key water quality indicators. We use this information to assist in managing the delivery of water.

14.5.3 Water Quality Monitoring

WaterNSW operates an extensive water quality and quantity monitoring program to track how we are meeting required standards. We monitor sites on rivers, water bodies, groundwater, water storages and the delivery network.

The drivers for the water quality monitoring program relate to:

- Regulatory requirements – WaterNSW is required to undertake storage water quality monitoring for parameters such as Blue Green Algae, water chemistry and temperature as part of its Works Approvals issued by DPI Water
- Dam Safety – seepage water quality is monitored by the dam safety group to assist in the early identification of risks.
- Drinking Water Quality – water quality is monitored across the Fish River Scheme and at the dams where WaterNSW is responsible for providing water for urban consumption in line with the Australian Drinking Water Guidelines and NSW Health.

WaterNSW implements a water quality monitoring program which provides a structured, transparent approach to the collection, analyses and reporting on water quality issues associated with:

- Algal Monitoring
- Cold Water Pollution
- Water Chemistry
- Dam Surveillance
- Drinking Water Quality.

There are three key components to our monitoring program:

- routine and compliance monitoring: this is aimed at ensuring that raw water supplied to WaterNSW customers meet the standards set by the Australian Drinking Water Guidelines
- targeted or investigative monitoring includes:
    - hot spot monitoring in locations such as below sewage treatment plants, sale yards or piggeries, to assess the impact of point source pollution on stream quality
    - event-based monitoring in response to rainfall and other events
    - incident monitoring requiring immediate risk assessment (eg a chemical spill or algal bloom)
- monitoring catchment solutions to reduce pollution: monitoring of known pollution sources where WaterNSW has funded works to control pollution loads to understand if the solution is delivering expected outcomes.

WaterNSW has developed contingency and emergency response plans to deal with potential incidents such as suspected or actual pollution, major floods, or any water quality problems.

14.5.4 Routine and Corrective Maintenance

Routine Maintenance and Corrective Maintenance comprise the most significant component of operating expenditure representing approximately 31 per cent of the total operating expenditure.

The maintenance function at WaterNSW is conducted within the framework provided by the Asset Management System (AMS), discussed in section 14.5.5.1 below. The intent of the routine maintenance program is to contribute towards maintaining the capability of WaterNSW assets to deliver the appropriate level of service to our customers in an efficient, reliable, safe and environmentally responsible manner.

In line with asset capability requirements, routine maintenance activities are performed before breakdown to optimise the life-cycle costs, whilst taking into account work health safety requirements and maintenance audit recommendations

Historically routine maintenance activities have been completed at repeated frequencies as per the manufacturer's service guidelines as well as maintenance procedures that have evolved over the life of the asset.

The maintenance policy defines the objectives of maintenance program. This policy aims to ensure that:

- the maintenance strategy aligns with WaterNSW's asset management objectives, in support of organisational objectives
- the asset owners and customers are satisfied that the assets are performing in the manner in which they were intended to perform
- assets are maintained in accordance with statutory and regulatory requirements and target industry best practice
- assets are maintained to:
    - optimise levels of service and life cycle costs
    - acceptable levels of risk
    - minimise breakdown maintenance
    - optimise maintenance costs.

14.5.5 Asset Management Planning

14.5.5.1 Asset management function

The formation of WaterNSW has resulted in substantial efficiencies of scale resulting in the effective rural share of the asset management function being substantially lower than the function within the former State Water.

WaterNSW has restructured its asset management function to align with asset capability and asset health drivers. This change in focus means that a greater degree of effort will be devoted to regional and state level analysis of asset capability needs in both the short, medium and longer term.

To this end, WaterNSW now has a dedicated Asset Strategy group which is focused on analysis of long term bulk water needs. The Asset Strategy group has developed a number of valley specific strategy initiatives which will inform 30 year plans for each of the regulated valleys.

The Asset Capability' group is responsible for short to medium term management of the asset base, including review of current performance and condition of the asset base against customer requirements and as per the various statutory, regulatory and operating licence related obligations of the organisation. A risk prioritised approach to asset planning is undertaken, which is responsive to the customer's desired levels of service.

The Asset Management function at WaterNSW is undertaken within an Asset Management System (AMS) which has been developed in line with the requirements of ISO 55001. The AMS specifies how WaterNSW will deliver the appropriate level of service from its assets. This involves a combination of maintaining the capability of the asset base, augmenting the capability of the asset base and creating new capability within the asset base. Also, in order to continue operating our assets, we are required to ensure that they are compliant with legislative requirements noting that specific asset management requirements are set out in WaterNSW's State Water Operating Licence.

14.5.5.2 Operating Licence

Section 4 of the State Water Operating Licence requires that the organisation develop an Asset Management system consistent with the International Standard ISO 55001. This includes a requirement for certification as follows:

a. by 30 June 2018, the AMS is certified by an appropriately qualified third party to be consistent with the International Standard ISO 55001:2013: Asset Management – Management systems - Requirements; and
b. once the AMS is certified, the certification is maintained during the remaining term of the Licence.

The ISO55001 Asset Management Standard requires the organisation to have systems and processes in place that ensure that the assets meet key business drivers such as meeting levels of service and legislative regulatory requirements. This requires a definition of asset related needs as an interpretation of organisational needs.

The WaterNSW AMS is described within a Strategic Asset Management Plan, which sets out the systems, processes and procedures required to ensure that WaterNSW assets are capable of meeting the requirements of our customers.

The WaterNSW Strategic Asset Management Plan follows on from multiple iterations of the former State Water's Total Asset Management Plan in 2000, 2004, 2009 and 2013. These were developed in line with the NSW Treasury Total Asset Management policy and guidelines.

The diagram in Appendix D describes the elements of the WaterNSW AMS and how they interact to achieve asset management objectives.

14.5.5.3 Asset renewal and replacement

WaterNSW's asset replacement and renewal program is informed by modelling of appropriate levels of investment to offset asset consumption as indicated in section 13.4.1. In terms of specific interventions, these are selected on a risk prioritised basis using multi-criteria analysis as

per the WaterNSW Asset Health and Asset Service standards. These assess the capability of WaterNSW assets to satisfy:

- Compliance requirements: WaterNSW must ensure that its asset base is compliant with existing, new and emerging statutory and regulatory requirements
- Reliability / capability requirements: WaterNSW assets must be capable of performing to a standard that meets customer required levels of service
- Serviceability requirements: Subject to asset criticality, WaterNSW assets must be capable of being maintained, with spare parts available
- Optimal Life Cycle Cost: WaterNSW assets should be maintained in a way that minimises life cycle cost subject to maintaining an acceptable risk and performance profile.

These assessments inform the development of yearly maintenance and capital expenditure plans for each valley. The general principle applied is to defer intervention as late as possible subject to acceptable risk level, levels of service and consideration of life cycle cost interactions.

14.5.6 Dam Safety Compliance

Dam Safety and Compliance represents 13 per cent of total operating costs. The NSW Dams Safety Committee (DSC), as the dams regulator, sets the framework and principles for dam safety requirements, and sets the risk tolerance criteria for public safety. The WaterNSW Dam Safety Program forms a key element in satisfying the regulatory requirements, our 'duty of care' obligations to the community and risk management for the business.

A quantitative portfolio risk management approach has been applied to 18 dams in this program. The first comprehensive portfolio risk assessment (PRA) was completed in 2002 and the second in 2014. This provided a robust basis for prioritising and managing the dam safety risks across the portfolio. Dams with an intolerable risk rating are managed through this program until the societal risk is reduced to at least a tolerable level, in a manner consistent with the 'As Low As Reasonably Practicable' principle (ALARP).

The Dam Safety program has lowered the risk profile of these dams into the tolerable ALARP zone during the current pricing period and this submission is aimed at maintaining that position.

In the context of new dam safety legislation (the Dams Safety Act 2015), and soon to be released Dam Safety Regulation and standards, the WaterNSW program will comprise a systematic and quantitative assessment of the risk position of the prescribed dams. Additionally, under the new framework the financial and economic risk acceptance criteria are to be based on the corporation's asset management and risk frameworks.

Consistent with the corporate Asset Management System, described above in section 14.5.6.1, the following standard activities form part of the dams program for this pricing period, and will be delivered using internal resources in conjunction with external services in some cases.

14.5.6.1 Surveillance

Surveillance is undertaken to maintain a current and forward view of the risk status of the dam portfolio, using an audited surveillance and monitoring process. Routine visual observation of the assets combined with instrumentation monitoring is considered the foundation of the dam safety program, which underpins the success of the broader asset reliability program. Regular detailed surveys of all our major dams and weir structures, as well as any special one off surveys as required will be carried out.

14.5.6.2 Dam Operations and Maintenance

Dam Operations and Maintenance activity is aimed at operating and maintaining dam assets on a fit for purpose basis at the lowest practicable cost, whilst maintaining appropriate levels of risk and complying with all regulatory requirements. The packages of risk prioritised dam maintenance tasks will be delivered in a prudent and efficient manner.

14.5.6.3 Dams With Heightened Awareness (Intolerable Risks)

The purpose of this activity is to undertake heightened surveillance, studies and investigations on dams which have known or suspected deficiencies and to demonstrate the adequate discharge of

our duty of care obligations. At times, this requires expert input and review of surveillance information to understand complex interaction of risks specific to each dam. This will be delivered via a combination of internal and external specialist expertise as appropriate.

14.5.6.4 Investigation and Resolution of confirmed Dam Safety Deficiencies

The objective of the Investigation and Resolution of confirmed Dam Safety Deficiencies activity is the prudent management of dam safety risks to meet business, customer and regulatory requirements. A wide range of tasks will be undertaken by internal resources and specialist engineering consultants to analyse and evaluate risks and develop and deliver treatments and interventions. The delivery model for each sub-element will be determined on a case by case basis.

14.5.6.5 Emergency Preparedness

Potential or actual dam safety emergencies are managed in accordance with regulatory requirements, stakeholder and business needs. Dam Safety Emergency Plans (DSEP) will be reviewed, updated and exercised by internal resources. Maintaining and monitoring the Seismic Response Network will be outsourced to specialist service providers under a service contract. Internal resources will be used to review and update detailed hydraulic modelling and mapping of downstream catchments for the dams as a necessary input into the DSEP documents.

14.5.6.6 Maintaining Capability and Access to Key Information

The purpose of the Maintaining Capability and Access to Key Information activity is to ensure information and capabilities used in dam management are functional and meet business needs. The dam safety program will be delivered by appropriately trained and competent staff, supported by modernised IT systems and more readily available information.

14.5.6.7 Regular Reporting, Audits and Reviews

WaterNSW undertakes robust and value adding quality assurance reviews, governance and reporting of the program and the safety of dams. Standard reports will be developed for Senior Management and the Board that provides visibility of dam safety management performance against established criteria and regulatory requirements. Regular “health checks” of the program will be carried out against contemporary industry best practice, and significant decisions will be reviewed by suitably qualified experts.

14.5.6.8 Communication with External Stakeholders

WaterNSW undertakes reporting and liaison with the Dams Safety Regulator and other industry bodies. There will be ongoing active participation and engagement with the NSW Dams Safety Committee (including sub-committees), the Water Services Association of Australia (WSAA) and participation in ANCOLD steering committees.

Standard reports will be updated and presented to stakeholders as required, noting the additional regulatory reporting requirements outlined in the Dams Safety Act (2015), which are expected to be enforced during the forthcoming price period.

WSAA benchmarking surveys will be undertaken and engagement with the discussion forums to influence the development of a dam safety management systems maturity matrix. The matrix (when developed) will be applied to our program to compare its maturity against other Australian dam owners and international contemporary practice, providing a strategic approach to our continuous improvement plan.

14.5.7 Environmental Planning and Protection

A requirement of the Operating Licence is to carry out activities in accordance with programs to manage risks to the environment. In accordance with the Operating Licence, we are required to implement an Environmental Management System (EMS). WaterNSW continues to maintain environmental programs to manage risks whilst developing an EMS.

14.5.7.1 Environmental Programs

WaterNSW maintains and implements a number of plans, programs and projects to ensure we meet WaterNSW's compliance with the Environmental Planning & Assessment Act 1979 (EP&A Act). WaterNSW implements an environmental impact assessment process which refers to a set of environment and heritage assessment procedures and forms to ensure consistent application of environmental legislation across WaterNSW for all appropriate activities and developments.

The environmental assessment process contains step-by-step guides for project managers and a variety of tools allowing identification of environmental impacts associated activities. Environmental audits are performed against works applying WaterNSW's environment and heritage procedures to ensure compliance with environmental and planning legislation, which is fundamental to environment protection and reduces the risk of non-compliance to WaterNSW.

WaterNSW has developed and maintains a heritage management action plan which consolidates WaterNSW heritage responsibilities (both Indigenous and non-Indigenous), key actions and programs required to manage heritage assets. This plan is applicable to all activities conducted by WaterNSW staff and external contractors and third party proposals that have the potential to impact on the significance of WaterNSW heritage assets.

WaterNSW is committed to delivering Ecologically Sustainable Development outcomes and compliance with mandatory environmental reporting requirements. WaterNSW has developed and maintains a sustainability plan that includes strategies and actions to achieve this commitment. The sustainability plan aims to help reduce WaterNSW operating costs and by increasing the efficiency of the resources the organisation uses.

14.5.7.2 Environmental Management System

WaterNSW is aiming to achieve an Environmental Management System (EMS) implemented and certified under ASNZS ISO14001 by December 2016.

To maintain certification the EMS will require the engagement of both internal and external resources to ensure the EMS will provide a systematic solution and integrate environmental management into daily operations and long term planning to reduce impacts and improve performance.

14.5.8 Corporate Systems

As discussed in section 13.4.2 WaterNSW is undertaking a rolling program of ICT hardware renewals, which is being undertaken in the context of the ongoing ICT improvement initiatives.

WaterNSW provided IPART with detail on this program on a confidential basis as part of the Greater Sydney pricing determination process and we request that IPART take this same information into account as part of this pricing proposal.

14.5.9 Customer Support, Compliance and Other

WaterNSW undertakes a number of customer support, billing metering and compliance and DPI Water compliance related costs. We have also incorporated the cost of an RTM into this cost category.

14.5.9.1 Customer Support

WaterNSW undertakes a range of Customer Support activities.

This includes engagement and consultation with key customers and customer group representatives on levels of service, asset development, water delivery, other operational matters and pricing submission development. CSCs and the Fish River Customer Council are the established lead forums that provide customers with an opportunity to engage with WaterNSW on levels of service and pricing outcomes and with regulators on policy and planning matters. Our rural valleys are grouped into nine CSCs with meetings of each held within the valley up to four times a year, concurrently with key individual customer visits.

Other customer support activities include information provision and transaction processing via the WaterNSW website and iWAS system, helpdesk and other staff.

Costs associated with customer support activities primarily relate to customer engagement via key customers and rural customer committees' and include staff (and for customer committees – customer representative) remuneration, travel and accommodation, venue hire, report preparation and other meeting administration costs.

14.5.9.2 Metering and compliance

Meter and compliance costs are driven by:

- Customer water ordering
- Customer water account management
- Customer site surveillance
- Customer meter reading
- Customer complaint management

15. Other cost components

15.1 Tax allowance

In simple terms, the calculation of tax considers gross income, tax depreciation, tax deductions (including deductable interest) and tax losses. The estimated taxable income is then multiplied by the corporate tax rate to determine the tax bill for our regulated infrastructure services.

Under the ACCC Pricing Principles, the regulator is required to forecast the actual taxation bill to be incurred by the firm over the regulatory period. This must be done in accordance with either Australian tax law, or provisions such as the National Tax Equivalent Regime (NTER) that applies to State and Territory government owned businesses.

To comply with these requirements, we have forecast tax obligations consistent with our existing financial modelling. However, the former State Water was entitled to claim a deduction on capital expenditure incurred on water infrastructure as it was identified as carrying on a business of primary production (40F depreciation claim).

For WaterNSW, the 40F depreciation claim is applied at the corporate level. If we applied this approach for pricing purposes, rural customers would not receive the benefit of the 40F claim through reductions in bulk water charges due to the absence of tax losses in our Greater Sydney business.

To ensure that rural customers receive the benefit of the 40F claim, we have allocated 40F claims only to those valleys which contain assets that triggered the claim. We then allocated the rural wide forecast tax depreciation in line with the allocation of the 40F claim.

The asset life values used to determine the RAB depreciation have also been used as an input to the tax allowance building blocks. We considered this approach to be consistent with tax ruling 2015/2 *Income tax: effective life of depreciating assets* and therefore consistent with the ACCC Pricing Principles.

We have calculated deductable interest based on the notional gearing ratios (that is 60:40 debt to equity on the RAB).

Our proposed tax allowance over the 2017-21 period is shown in the table below.

Table 87 Proposed tax allowance over the 2017-21 period (2016/17 real $ '000)

Tax Allowance (2016-2017 $)				
Total costs $'000	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Border	0	0	0	0
Gwydir	0	0	0	0
Namoi	0	0	0	0
Peel	183	190	196	199
Lachlan	0	0	0	0
Macquarie	0	0	0	0
Murray	0	0	0	0
Murrumbidgee	810	859	903	943
Lowbidgee	0	0	0	0
North Coast	0	0	0	0
Hunter	0	0	0	0

South Coast	0	0	0	0
Fish River	333	356	377	392
Total	1,325	1,406	1,476	1,535

15.2 Working capital

Working capital is the difference between current assets and current liabilities as a result of timing differences between accounts payable and accounts receivables. This timing difference creates a financial liability for WaterNSW when accounts receivables is greater than accounts payables.

The ACCC pricing principles state that it is appropriate for the regulator to allow an explicit allowance for working capital to account for potential misalignment in expenditure and revenue.

We have adopted IPART's methodology of determining the working capital allowance based on:

- 45 day payment term for accounts receivable; and
- 30 day payment term for accounts payable.

These assumptions are consistent with the 2010 Bulk Water Determination of the former State Water.

Our proposed working capital allowance represents less than 1 per cent of total revenue as is shown in the table below.

Table 88 Proposed working capital allowance for the period 2017-21 (2016/17 real $ '000)

Working Capital Allowance (2016-2017 $)				
Total costs $'000	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Border	6	5	5	6
Gwydir	26	31	34	36
Namoi	-14	35	7	59
Peel	11	13	14	14
Lachlan	17	24	27	29
Macquarie	19	19	23	20
Murray	54	70	58	56
Murrumbidgee	18	32	35	35
Lowbidgee	-5	-6	-5	-5
North Coast	-3	-3	-3	-2
Hunter	13	8	10	13
South Coast	-3	-2	-2	-1
Fish River	11	7	13	13
Total	152	235	216	274

The working capital allowance has been included in the return on capital component of the building blocks due to it having an insignificant impact on required revenue.

15.3 Irrigation Corporations and Districts rebates

The Irrigation Corporations and Districts (ICDs) conduct activities that result in economies of scale in delivering water to ICDs relating to billing and metering activities, and to a lesser extent river operations activities; and system-wide benefits including policing of water use and qualitatively superior monitoring of diversions resulting from real-time monitoring.

Historically, we have calculated the avoided costs of these activities and paid a rebate to the ICDs. The value of the rebate is collected from other users and passed through to the ICD.

We are proposing to continue paying this rebate.

We have calculated this rebate based on:

- Determining a per ML of entitlement costs for metering and compliance and customer support activities; and
- Applying this factor to the number of entitlements held by the irrigation corporation.

The ICD rebates are shown in the table below:

Table 89 ICD rebates for the period 2017-21 (2016/17 real $ '000)

ICD Rebate (16/17$)	2017/18	2018/19	2019/20	2020/21
Jemalong	39,268	37,134	37,101	36,368
Murray Irrigation	553,805	535,961	535,776	529,003
Western Murray	17,098	16,547	16,541	16,332
West Corugan	30,506	29,523	29,512	29,139
Moira	14,218	13,760	13,756	13,582
Eagle Creek	23	22	22	22
Murrumbidgee Irrigation	248,547	238,815	238,713	235,025
Coleambally	109,864	105,562	105,517	103,887
Total rebates	1,013,328	977,323	976,938	963,358

16. Water take service charges

16.1 Water take measurement services

WaterNSW owns and operates approximately 2,000 ground water and surface water meters (telemetry and non-telemetry enabled). These meters were funded by the Commonwealth Government (the NSW Metering Project) and installed on customer licensed water extraction sites in the Murray and Murrumbidgee valleys.[61]

In the ACCC 2014 Decision, the ACCC determined meter service charges (MSC) for customers who extract water from WaterNSW owned meters. The MSC recovers the cost of maintaining WaterNSW owned meters (including the telemetry installations) but does not cover the maintenance costs of customer-owned meters which are paid for by customers themselves.

WaterNSW also provides water take measurement services related to meter reading and water use assessments for all customers (including for customers who own their own meters), the cost of which are recovered through bulk water charges.

16.1.1 Meter service charge

We propose to continue levying the MSC on customers who extract water through a WaterNSW owned meter. The MSC will recover the costs associated with:

- the maintenance of WaterNSW owned meters (including asset maintenance in relation to telemetry assets)
- administration costs incurred by WaterNSW including associated overhead.

In determining the level of the MSC, from the outset, we considered that it was important to:

- establish a level of charging which is sufficient to recover our costs, while
- reducing the cost of customer compliance with the National Metering Standards,

which would ensure overall financial viability for the NSW Metering Project.

In 2015, after a competitive tender evaluation process, we entered into a service contract with a third party provider with proven experience and expertise in maintaining non-urban water meters. Consequently, our proposed MSC have remained relatively flat from the ACCC approved charge levels for most meter sizes. Our administrative costs consist of one full time equivalent staff member to supervise and oversee compliance with the service contract.

We note that the ACCC MSC included an allowance to fund meter and telemetry asset failures outside of warranty. We propose that this allowance is retained in the 2017-21 determination period.

Our proposed MSC for the 2017-21 determination period is set out in Table 90 below.

[61] In 2004 the Commonwealth and state governments identified improved metering as a critical step in water accounting. As a consequence, the 2009 the Council of Australian Governments (COAG) ratified the National Metering Standards. Commonwealth Government made $221 million available from the Sustainable Rural Water Use and Infrastructure Initiative for the NSW Metering Project. The aim being to ensure (for NSW) that up to 95% of extractions on regulated, unregulated and groundwater sources were metered. In return for providing funds, the Commonwealth would receive water entitlements from the efficiency gains as a result of accurate metering. The NSW Metering Project was expected to see approximately 9,000 telemetered meters installed in rural NSW. However, the Commonwealth Government subsequently cut funding to the initiative. As of 2016, only 2,000 groundwater and surface water meters are expected to be installed in the Murray and Murrumbidgee valleys.

Table 90 Proposed Water Take Measurement Service Charges 2017-2021

Water Take Measurement Services Charge

Applies to Commonwealth Funded Meters Owned by WaterNSW (telemetry and non-telemetry)

Nominal $

Meter size (mm)						% Change
	FY17 (ACCC)**	FY 18	FY 19	FY 20	FY 21	FY17-18
50	$398.65	$440.03	$471.93	$505.16	$583.60	10.4%
80	$398.79	$441.92	$473.96	$507.32	$585.36	10.8%
100	$399.55	$440.73	$473.18	$506.97	$589.50	10.3%
150	$420.27	$443.95	$477.28	$512.00	$605.61	5.6%
200	$442.79	$445.59	$479.34	$514.50	$618.26	0.6%
250	$448.46	$446.11	$480.60	$516.53	$623.77	-0.5%
300	$450.46	$449.33	$485.07	$522.31	$634.66	-0.2%
350	$463.04	$466.19	$506.70	$548.95	$690.96	0.7%
400	$515.41	$474.27	$518.31	$564.26	$726.28	-8.0%
450	$623.99	$475.11	$520.08	$567.00	$730.09	-23.9%
500	$633.40	$483.99	$531.06	$580.19	$737.99	-23.6%
600	$667.59	$492.31	$543.14	$596.20	$752.91	-26.3%
700	$681.27	$503.98	$558.66	$615.75	$767.84	-26.0%
750	$682.95	$531.00	$587.33	$646.14	$839.60	-22.2%
800	$720.82	$536.35	$598.31	$663.03	$862.68	-25.6%
900	$775.11	$538.05	$601.78	$668.37	$869.98	-30.6%
1,000	$780.59	$541.18	$608.21	$678.25	$883.48	-30.7%
Channel	$7,637.95	$5,816.33	$6,028.41	$6,247.46	$6,679.53	-23.8%

* Forecast inflation rate of 2.5%
** From the 2016-17 ACCC Annual Review of Regulated Charges (MSC for Commonwealth funded telemetry meters)

In the 2014 Final Decision, the ACCC determined separate maintenance charges for telemetered and non-telemetered meters with differential pricing by meter size within those categories. As the current service contract does not distinguish between the cost of telemetered and non-telemetered meters, WaterNSW is proposing the same level of charging for both telemetry and non-telemetry meters with differential pricing by meter size only.

WaterNSW is not proposing a continuation of meter maintenance charges for WaterNSW funded meters as set by the ACCC in its 2014 Final Decision (which included a return on and of capital component). This is because WaterNSW has not installed any WaterNSW funded meters at customer sites.

16.1.2 Water reading and water assessment services

Meter reading and water use assessment cost are recovered through bulk water charges and are not subject to a separate charge.

WaterNSW has historically provided a uniform meter reading service of four meter reads per annum irrespective of the size of the customer's meter. WaterNSW has reviewed this policy in the light of a risk and cost based approach. We propose to implement changes to our meter reading program as set out in Table 91 below.

Table 91 Meter reading program

Size of meter	No. of meter reads
Less than 100 ML	Minimum 4 (customer self) reads per annum[62]. At least one compliance check annually
101 ML to 500 ML	Minimum of 2 meter reads performed by WaterNSW per annum
501 ML or greater	Minimum of 4 meter reads performed by WaterNSW per annum

By reducing the number of meter reads for smaller customers, we are able to save costs and better target compliance towards areas that we perceive pose greater risk from a water extraction and river management point of view. We note that DPI Water is also proposing a similar approach to meter reading. We will be working closely with DPI Water to ensure congruence between our proposal and its proposals for groundwater reads.

This restructure in our approach to meter reading will reduce our costs and provide savings to customers over the four year determination period. We will also continue to support customer led investment in telemetry to further reduce costs, increase compliance and customer confidence in overall regulatory settings.

During the forthcoming determination period, we will be investigating different options for meter reading and water use assessment costs. Like DPI Water groundwater charges, for smaller customers, a fixed minimum charge may be more appropriate, while for larger customers a separate meter reading charge may be preferable. We will analyse different options for different customer segments and will continue to consult with our customers on these options.

[6262] No meter reads performed by WaterNSW.

17. Miscellaneous charges

17.1 List of proposed miscellaneous charges

Miscellaneous charges are service fees levied by WaterNSW for non-routine product offerings, the costs of which are not recovered through bulk water infrastructure charges.

The miscellaneous charges are levied on individual customers who request that the work be carried out by WaterNSW. These charges recover the direct costs incurred by WaterNSW in carrying out the work together with associated overhead. The costs of these services are determined separately from the building block revenue to set bulk water services charges. This approach is consistent with the principle of user pays. That is, the cost of the service should be borne only by those customers who benefit from the service.

The proposed miscellaneous charges are set out Table 92 below.

Table 92 List of proposed miscellaneous charges

Miscellaneous Charge	ACCC (FY 17) (nominal $)*	Proposed (FY 18) (real 16/17$) **	How is the charge levied?
Trade processing charge	$39.01 per application $0.51 per ML of allocation traded	$39.01 per application $0.51 per ML of allocation traded	On receipt of a trade application
Environmental gauging station charge	$8,789.45 per annum	$18,658 per annum	Before the works are carried out as requested by the customer
Refundable meter accuracy deposit for verification and testing in situ	$1,710.26 per request	$3,000 per request	Before the works are carried out as requested by the customer
Refundable meter accuracy deposit for laboratory verification and testing	n.a	$1,795.19 per request	Before the works are carried out as requested by the customer
Fish River connection charge	$473.51 per request	Fee for service	As agreed between the customer and WaterNSW
Fish River disconnection charge	$263.06 per request	$263.03 per request	Before the works are carried out as requested by the customer

* ACCC Final Report on WaterNSW 2016-17 Annual Review of Regulated Charges.
**We propose each of these charges increase by inflation for each year of the determination period.

17.2 Water trading charges

17.2.1 Trade processing charge

WaterNSW currently levies an allocation trade processing charge, which consists of a two part tariff as follows:

- Fixed charge of $39.16 per trade application.
- Variable charge of 52 cents per ML of allocated trade up to a max of $154.56.

We propose to retain the current trade processing charge on the basis that it will recover administrative costs of processing trade applications

The trade processing charge applies to all trade applications for allocation assignments (including intravalley, intervalley and interstate allocation assignments).

17.2.2 Allocation assignments

An allocation assignment (formerly known as a temporary water transfer or temporary allocation trade) is the assignment or transfer of a current year allocation (or part thereof) from one access licence to another.

WaterNSW maintains a Water Allocation Account for each access licence issued under the *Water Management Act 2000* (NSW) and each licence issued under the *Water Act 1912* (NSW) held by a customer. Water accounts track the actual water allocation (in megalitres) credited and debited on a daily basis. Credits to a water account include Available Water Determinations (AWDs) and water that has been assigned into the licence through allocation assignments. Debits to water accounts include the use of water through water supply works and allocation assignments from the water account.

Water available in a water account can be assigned (or transferred) to another water account on a temporary basis (for that season). This assignment or dealing has no permanent effect on the share component of the licence. Allocation which is transferred and not used will be subject to the end of season rules which vary from valley (e.g., carryover provisions).

In general all valleys can trade water between the following access licence categories:

- HS water may be traded to both HS and GS access licences
- GS water may be traded to both HS and GS access licences.

With trading to and from Specific Purpose Licences much more restricted:

- Supplementary water may only be traded to another Supplementary access licence (some valleys have additional restrictions to this rule)
- Stock and Domestic water cannot be traded, however with Ministers consent, both HS and GS water can be traded to a Stock and Domestic access licence
- Local Water Utility licences may trade to High/General/Stock and Domestic only with Ministers consent after satisfying a number of conditions.

The Access Licence Dealing Principles[63] restrict trading where there is no hydrologic connection between the water sources. This translates into a number of valley specific trading conditions which can change from time-to-time. Each valley's WSP details specific rules which govern the trading of water in that valley and to and from that valley.

Intervalley assignments of water allocation in the following water sources are permissible under Minister's consent:

- Murray to Murrumbidgee
- Murray to Lower Darling
- Murrumbidgee to Murray
- Murrumbidgee to Lower Darling
- Upper Namoi to Lower Namoi
- Lower Namoi to Upper Namoi.

Interstate Assignments of water allocation in the following water sources are permissible under Minister's consent:

- Murray to/from Victoria and South Australia
- Murrumbidgee to/from Victoria and South Australia
- Lower Darling to/from Victoria and South Australia

[63] The Access Licence Dealing Principles are set out in the *Access Licence Dealing Principles Order 2004* and can be found at http://www.austlii.edu.au/cgi-bin/download.cgi/au/legis/nsw/consol_reg/aldpo2004299

- Border Rivers to/from Queensland.

17.2.3 Allocation assignment to buyer without a NSW Water Access Licence or Works Approval

Water that is traded out of NSW would be revenue lost to WaterNSW without a mechanism to enable WaterNSW to track and charge for usage. To address this issue WaterNSW bills usage fees where the receiver does not have a NSW Works Approval (and therefore no means to determine usage at the point of extraction) at the time of trade[64].

This approach is in line with the description in the 2010 IPART Pricing Determination that "*the usage of water includes extraction and trade of water*".[65] Failure to consider trade usage, given the net trade of water from NSW, would lower the effective amount of water 'used' and would move the cost burden to water users who do not trade their water.

In its 2010 report, IPART endorsed our approach stating that "*we consider that it is a fair and reasonable proposition for State Water to recover the costs that it incurs from those who benefit from the sale of water which it delivers*." [66]

WaterNSW introduced this approach as an equitable, transparent and administratively feasible solution to the loss of revenue that would have otherwise occurred from interstate trade. The approach also provides a means to improve trade outcomes by preventing market distortions that exist with different pricing structures applying between NSW and other MDB states.

Net trades out of NSW are exacerbated due to the higher usage charges in NSW compared to other jurisdictions which have up to 100 per cent fixed charges. For example, in Victoria, water attracts a fixed charge but no usage charge. Without the current WaterNSW billing arrangements, the transfer of NSW water to Victoria would not attract a usage charge for the Victorian buyer. Therefore there is an incentive for Victorian buyers to purchase NSW water and as consequence the cost burden would be moved to non-traders. Therefore, users who do not trade would be disadvantaged.

Our approach seeks to recover costs that would otherwise be paid for by users who do not trade. Thereby, lowering the price for all users as a result all users of water (as per IPART's definition of usage that includes trade of water) paying the usage charge.

In December 2014, WaterNSW advised the ACCC that volumes of water allocation traded out of NSW were not included in the usage data provided to the ACCC for the purposes of the ACCC's 2014 Determination. WaterNSW provided retrospective data on interstate trade volumes to the ACCC which it took into account in its annual review for 2015-16 charges. The ACCC varied the demand forecasts accordingly to include outward trade as part of usage.

WaterNSW provided the ACCC with updated trade data with estimates for 2015-16 in the 2016-17 pricing application. The ACCC concluded that the 'change in forecasts' variation test was satisfied and therefore, the charges that would result from the application of the formulae in the 2014 Determination should be varied in order to take into account the volume of water allocation traded from NSW to other MDB states.[67]

The inclusion of interstate trade volumes for the years 1995-96 to 2014-15 has increased the 20 year moving average used to forecast usage in 2016-17. As stated by the ACCC, this has a downward effect on usage charges for 2016-17, but does not affect entitlement charges. Therefore prices for some NSW users were lowered as a result of being able to levy a charge on

[64] The time of trade refers to when WaterNSW receives an application for an assignment of water allocation dealings.
[65] IPART (2010), Review of bulk water charges for State Water Corporation, From 1 July 2010 to 30 June 2014 Water — Final Report, June 2010, p. 166.
[66] IPART (2010), Review of bulk water charges for State Water Corporation, From 1 July 2010 to 30 June 2014 Water — Final Report, June 2010, p. 166.
[67] ACCC (2016), WaterNSW Annual review of regulated charges: 2016-17 Final decision, May 2016, pp. 21-23.

interstate buyers. Therefore, our approach seeks to recover the infrastructure costs that otherwise would be paid for by NSW users (due to the lower amounts recovered from traded water which would otherwise need to be recovered from NSW water users). It lowers the price for NSW users as a result of buyers in other MDB states paying for NSW water.

WaterNSW proposes to continue with its current approach.

17.2.3.1 Review of WCIR

In November 2015, the ACCC released a proposed rule change under the WCIR review, which would prohibit an infrastructure operator from levying an infrastructure charge in the following circumstances: [68]

- upon an application to trade, transfer or terminate a tradeable water right (including where the application is not made to the infrastructure operator)
- as a condition of the infrastructure operator granting its consent or approval to a trade, transfer or termination of a tradeable water right
- when or because a tradeable water right has been traded or transformed;
- because a customer has undertaken, or intends to undertake, a trade, transfer or termination of a tradeable water right.

The proposed rule change does not apply where that infrastructure charge reflects the administrative costs necessarily incurred in processing the trade, transfer or termination.

The ACCC reasons for this proposed rule change appear to be that it prohibits trade. In its draft decision the ACCC noted that the primary rationale behind stakeholder support of cost-reflective charging is the possible impacts on water markets of tariff regimes that differ in their 'fixed vs variable split'. The ACCC considered however that it is more important to address aspects of charging arrangements that directly distort trading decisions, such as infrastructure charges levied directly on trade.[69]

The effect of such a proposed rule change would be to prohibit WaterNSW from levying, at the point of trade, the regulatory approved variable usage charge for temporary allocation trades where the buyer does not have a NSW Works Approval - that is for example, interstate trades.

The ACCC stated that it:[70]

> "… *acknowledges that it is important that operators are able to recover their prudent and efficient costs. Therefore the intent of the rule is not to preclude infrastructure operators from imposing these charges to recover revenue necessary to cover these costs. The issue is when an infrastructure operator imposes such charges. The ACCC therefore recommends that operators consider alternative charging structures that would achieve this objective, without distorting water use and trade decisions. For example, the ACCC considers that levying variable charges at the time water is allocated, rather than <u>when</u> water is used, could be an option that allows operators to continue to levy charges in a manner that takes into account water availability (which is a key rationale for the current reliance on variable charges), but in a manner that does not distort decision-making. The ACCC is of the view that this approach could strike the appropriate balance between ensuring that infrastructure operators are able to recover prudent and efficient costs while still ensuring that water users face appropriate incentives to trade their water.*"

WaterNSW does not agree with the reasoning or options proposed by the ACCC.

There is little evidence to suggest that trade is prohibited by WaterNSW's approach. The current market price of water in the Murray is $180/ML relative to the 2015-16 WaterNSW usage charge of $6.40/ML (approximately 3.5 per cent of the market price).

The ACCC proposed option to levy charges at time of allocation is not a feasible option for WaterNSW. Customers are not obliged to use their water allocation and the ACCC proposal

[68] ACCC (2015) Review of Water Charge Rules Draft Advice, November 2015, Rule 5-D. p. 241.
[69] ACCC (2015) Review of Water Charge Rules Draft Advice, November 2015, p. 156.
[70] ACCC (2015) Review of Water Charge Rules Draft Advice, November 2015, p. 69.

suggests charging customers for unused water. This is a significant change from current arrangements and is not likely to be supported by customers. We note that water allocations may increase during the year and this would require substantial and costly reconfigurations of the water account and billing systems.

WaterNSW is currently exploring other solutions to mitigate the revenue risk in response to the ACCC's proposed rule change. However, it is likely that any solution developed would have an adverse impact on customers who do not engage in trade.

At this stage it is not clear whether the ACCC will continue with its recommendations in its final report to the Federal Government and whether the Government will accept its recommendations and adopt the change. Moreover, under draft changes proposed by the ACCC, IPART would not be bound by the WCIR.

In the light of the continuing uncertainty on the status of any WICR reform, we propose that IPART allow WaterNSW to levy usage charges on customers trading water allocation to persons who do not hold a NSW water access licence with an associated water supply works and complying metering.

17.3 Environmental gauging station charge

17.3.1 Overview for proposed charge for environmental gauging stations

There are currently 21 environmental gauging stations operated by WaterNSW most of which are operated under a Service Level Agreement with DPI Water. These stations measure environmental releases for environmental customers.

In the ACCC 2014 Decision, the ACCC approved a separate charge for environmental gauging stations across the MDB valleys. The charge was based on the incremental costs of upgrading the environmental gauging stations to achieve the level of accuracy under the Commonwealth National Measurement Standards.

National standards for water meters have been developed under the National Water Initiative and apply to meters installed after 1 July 2010. After that date, new water meters are required to be pattern approved (by the meter manufacture or supplier) in accordance with requirements of the National Measurement Institute. As the 21 environmental gauging stations reach end of life, they need to be replaced by an upgraded station that meets the new standard.

To date, we have not levied a gauging station charge on environmental customers as the stations were not upgraded during the current determination period. Further, the ACCC determined charge of $8,889.45 per site per annum is insufficient to recover the incremental costs of upgrading the environment gauging stations to achieve the level of accuracy under the Commonwealth National Measurement Standards.

WaterNSW is proposing a continuation of the environmental gauging station charge, updated with improved operating and capital expenditure forecasts as set out in Table 93 below.

17.3.2 Proposed charges

The proposed charges for environmental gauging stations for the 2017-21 period is set out in below.

Table 93 Proposed Environmental gauging station charge ($nominal)

Proposed charge	FY 17 (ACCC)	FY18*	FY19*	FY20*	FY21*
Environmental Gauging Station charge per site per annum	$8,789.45	$19,125	$19,603	$20,093	$20,595

* Forecast CPI of 2.5 per cent per annum.

The proposed environmental gauging station charge consists of:

- capital expenditure annuity for the instruments required to capture water flow information

- installation costs, and
- additional operational costs to maintain the gauging station at the required level of accuracy.

17.3.3 Further reform

The recurrent costs of managing the environmental gauging stations at the current level of accuracy (i.e. without the incremental costs of the upgrade described above) are recovered through bulk water charges and are socialised across all customers. We considered whether or not it would be appropriate to pass on these recurrent costs directly to the environmental customer, consistent with the user pays principle.

Such an approach would require significant consultation with customers and stakeholders, as well as identification of customer groups who benefit from the other gauging stations operated by WaterNSW.

We intend to undertake a comprehensive review of levels of service and product segmentation for the 2021 price submission and will include this issue in our review.

17.4 Refundable meter accuracy deposit

We currently levy a refundable deposit for resolving meter disputes of approximately $1,710.26. This deposit is forfeited by the customer if the meter is found to be within accuracy standards. The deposit is returned to the customer if the meter is found to be outside of accuracy standards.

Based on market rates, it has been determined that the current charge deposit is significantly below the costs of carrying out the works associated with meter accuracy verification and testing in situ.

We recognise the need to provide the right incentives for customers to question the accuracy of a WaterNSW owned meter. On this basis, we propose a continuation of the current meter accuracy deposit for verification and testing in situ however we propose that the deposit be set at $3,000, which is approximately half of the costs associated with these works.

We also propose to introduce a new meter accuracy refundable deposit for meter laboratory verification and testing of $1,795.19. This is consistent with the IPART 2016 Review of prices for the Water Administration Ministerial Corporation, June 2016 for the equivalent charge[71].

In either case, if the meter is found to be within accuracy standards, the deposit will be forfeited by the customers, and WaterNSW may recover the outstanding costs from the customer of verifying the accuracy of the meter.

The above charges apply to WaterNSW owned meters. We note that customers may engage WaterNSW to carry out meter accuracy and verification works on customer-owned meters. In such cases, we propose to offer a fee for service on commercial terms, similar to any other contestable service.

17.5 Fish River Connection/Disconnection Fee

WaterNSW currently levies new connection and disconnection fees for the Fish River Scheme. Requests for new connections and disconnection are at the request of the customer. Currently, WaterNSW receives two to three requests for connection per annum.

We are proposing a new approach to charging for new connections.

17.5.1 Proposed approach to new connection fees

Each new connection for the Fish River Scheme entails different requirements depending on a number of factors including whether there is a tapping point at the customer's location and the time taken to travel to the location. These different factors reflect different costs for each connection.

[71] See page 143 which contains the charge in $2015-16.

WaterNSW currently levies a regulated fee of $475.29 to establish connection to the Fish River Scheme, which does not recover the full cost of the connection service. It does not cover the costs of the tapping band, meter, associated pipework and travel time.

We are proposing that to better reflect the cost of the service, the regulated fee be replaced with individual quotes for the connection service.

We are proposing to provide Fish River Scheme connection applicants with a quote for each connection service based on the following components:

- Labour rates for WaterNSW staff[72]
- Material at cost
- Hiring of equipment (if required)
- Travel time.

In general, there are three stages involved in connection to the Fish River Scheme:

Stage 1:

- Tapping band
- Meter/pipework
- Backhoe
- Labour (~14 hours grade 3)

Stage 2:

- Risers for air valve
- Meter/pipework
- Backhoe
- Labour (~14 hours grade 3)

Stage 3:

- Pressure reducing valve
- Pressure relief valve
- Put surround
- Meter/pipework
- Backhoe
- Labour (~28 hours grade 3).

We are proposing to provide quotes for each connection application based on these stages. Travel time would be included in the number of labour hours.

We consider that the labour rate should be set at the rates in the State Water Enterprise Agreement or equivalent. The labour rate of grade 3 is $72.73 (including overhead, as at 2015/2016).

17.5.2 Proposed disconnection fee

WaterNSW currently levies a disconnection fee for minor customers in the Fish River Scheme of $263.06 (16/17 real $). The disconnection service is less complex than connection and involves removing the meter and to turn the tapping off.

We are proposing retain the disconnection fee at the current rate of $263.06 (16/17 real $).

[72] There is no accreditation scheme in place and currently only WaterNSW staff can provide these services.

18. Our performance in the 2014-2017 period

18.1 Key highlights and achievements

From its inception on 1 January 2015, WaterNSW embarked on a process of transformation to create a new world-class bulk water utility while continuing to deliver water reliably and in the quality expected by its customers.

The table below provides a highlight of WaterNSW's key achievements during the 2014-15 regulatory period.

Table 94 Key achievements[73]

Business transformation	On 1 January 2015, WaterNSW commenced and is responsible for managing bulk water supply across most of NSW.
	Commenced the development of an integrated organisational structure. Implementation of the new structure is expected to be completed by December 2015. The new structure will enable us to deliver our objectives in an efficient, effective and customer focused manner.
	A new and comprehensive Strategic Action Plan (SAP) was developed. The SAP is a three-year transformation program. Delivery of the SAP will deliver on its objectives of being a world-class, efficient and customer focused water utility.
Focus on safety	Safety is a high priority. During 2014-15 new, integrated and fit-for-purpose Work Health and Safety Procedures were developed. Implementation of these procedures across all work sites commenced during the year and will continue in 2015-16.
Reliable delivery of water	Delivered water in the quantities and time required by its customers 100% of the time.
	Achieved cumulative surplus water for the rural system at 3%, which is below the annual target of 5%.
	Met environmental flows requirement 100% of the time.
Quality water	Met the water quality standard in the Raw Water Supply Agreement with Sydney Water 99.95% of the time.
	Water supplied for treatment achieved 100% compliance with health guidelines.
Capital investment	Significant works completed include: Burrendong Dam Safety Upgrade (Auxiliary spillway and gate strengthening) Keepit Dam Safety Upgrade (Phase 2 – Electrical Upgrade) Telemetered metering Phase 1A

WaterNSW has provided information for the comparison of financial results (revenue, operating and capital expenditure) for the MDB valleys and performance standards.

We have not presented a comparison for coastal valleys against the 2010 IPART determination in this pricing proposal. This information has been provided previously to IPART in Annual Information Accounts.

[73] WaterNSW 2014-15 Annual Report page 8.

18.2 Performance against service obligations

WaterNSW is obliged under clause 3.1 of the State Water Operating Licence to:

- take all reasonable steps to process all Water Orders promptly and efficiently
- take all reasonable steps to manage Water Orders so as to ensure the timely Delivery of water to its Customers
- maintain a Water Allocation Account for each access licence issued under the Water Management Act 2000 (NSW) and each licence issued under the Water Act 1912(NSW) held by a Customer
- take all reasonable steps to conserve water and minimise water losses that result from undertaking its operations under this Licence.

Our performance against these obligations is presented in Table 95 below.

Table 95 Performance against licence obligations 2009-10 to 2015-16

Water delivery	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16*
Number of non-complying orders	860	1073	737	508	444	287	331
Number of non-complying orders contacted within 1 day	774	1058	726	502	438	284	331
Percentage of customers contacted within 1 day	**90%**	**99%**	**99%**	**99%**	**99%**	**99%**	**100%**
No. Complying water orders (000s) (Water order days)	46	56	87	130	124	124	75
Percentage of complying orders outside 1WD of scheduled day of delivery – measured by complaints	<1%	<1%	<1%	<1%	<1%	0%	<1%
Number of Customer complaint days, delivery +- 1 day	18	5	1	36	6	0	1
Number of complying orders rescheduled	48	15	21	60	66	17	3
Number of rescheduled orders notified within 1 day of shortage	42	11	11	36	48	7	3
Percentage of orders rescheduled notified within 1 day	**88%**	**73%**	**52%**	**60%**	**73%**	**41%**	**100%**
No. days minimum flow targets				3,371	3,650	3,142	1,874
Number of days minimum flow targets MET				3,367	3,650	2,797	1,859
Percentage of time flow targets met			100%	100%	100%	89%	99%

* Year to date as at March 2016.

The results show general improvements in performance in delivering services to customers. The number of non-complying orders contacted within 1 day reached 99 percent until 2014-15 and so far this year has reached 100 per cent.

18.2.1 Customer satisfaction surveys

WaterNSW conducts customer satisfaction surveys every four years. The most recent survey was conducted by State Water in the first half of 2014. The surveys are conducted to help identify areas scope for improvement to services.

The telephone survey gathered results from 500 randomly selected customers from spread across each valley. The sample size was determined by the number of licence holders in each valley with a minimum of 10 sampled in each valley. The largest bulk water customers were excluded from the survey as they were interviewed as a part of a broader stakeholder survey conducted in late 2012 and the advice from our survey consultant was that it was too soon to be resurveying them.

The results of the 2014 survey were presented to CSCs. Overall results from the survey were:

- 92% of all customers surveyed were at least satisfied with the overall service provided. This was a slight improvement from 91% (2010)
- 57% of respondents said that State Water should continue to focus to our core operations and as a secondary measure improve information on water availability.

The key recommendations from the survey were:

- further increase customer use of iWAS for water ordering, water accounting and providing information to customers
- review the CSC model as a mechanism to consult with customers on issues within the water industry and to provide the opportunity for input to operations that impact them
- consider opportunities to improve communication processes to enable more timely and valley specific information to be provided
- consider whether it is important for customers to be able to differentiate State Water (at the time) from other organisations involved in the management of the State Water resources
- increase survey frequency.

Many of the recommendations complemented each other with a strong theme around communication.

At the time, State Water requested customers provide suggestions to improve communication and any further information requirements.

WaterNSW has sought to substantially increase consultation with our customers, especially as part of this pricing proposal process as set out in section 3 above.

18.2.2 Answering phone response times

WaterNSW records the number of calls received by its Customer Helpdesk and response times. The results are shown in Table 96. The results show that WaterNSW exceeds its target service levels.

Table 96 Answering phone response times 2012-13 to 2015-16

	2012-13	2013-14	2014-15	2015-16*
Total number of calls	25,027	26,708	2,2788	23,853
% Target calls to be answered in 30 seconds	80%	80%	80%	80%
Actual % calls answered in 30 seconds	88%	86%	92%	89%

*Total number of calls based on actuals for July to March and the average calls of this same period was used for April to June 2016. Actual % calls answered in 30 seconds as at April 2016.

18.3 Revenue outcomes

18.3.1 Comparison of ‘target’ and actual revenue

In the ACCC 2014 Decision, the total revenue requirement for WaterNSW over the 2014–17 regulatory period was forecast at $257.8 million (nominal) or $264.1 million ($2016-17) for all MDB valleys.[74] This figure excludes the rebates to allowed to Irrigation Corporations and Districts (ICDs).

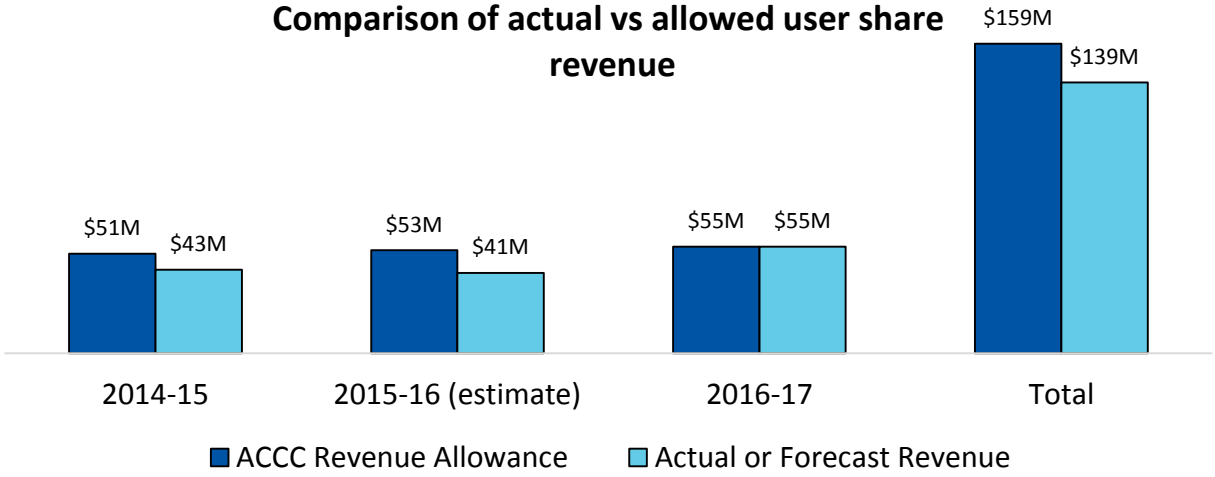
The total (unsmoothed) revenue requirement for WaterNSW over the 2014–17 regulatory period including the ICD rebates was forecast at $264.08 million (nominal) or $270.6 million ($2016-17) for all MDB valleys.

The forecast total revenue (unsmoothed) requirement was allocated between users and the NSW Government using the IPART cost sharing methodology. (This is discussed in section 10.6). The user share of the forecast total revenue was used to determine the forecast bulk water charges for the 2014–17 regulatory period.

The user share of the forecast total revenue (unsmoothed) requirement was $159.3 million (nominal) or $163.22 million ($2016-17) for the regulatory period. The government share for the regulatory period was $98.5 million (nominal) or $100.69 million ($2016-17). [75]

The comparison of the 2014 ACCC Decision forecast total revenue requirement and actual revenue is shown in Figure 25 below.

Figure 25 Allowed revenue against actual revenue for MDB and Fish River Valley 2014-15 to 2016-17 ($ nominal)



In 2014-15:

- at a corporate level, actual water sales were 1.6 per cent less than the 20 year rolling average used by the ACCC to set the variable usage charge (see Table 97); however
- we incurred a significant revenue shortfall of $8.0 million compared to the ACCC revenue allowance as actual water sales in the northern and central valleys were (in most cases) significantly under the 20 year rolling average. The decline in water sales in the northern and central valleys was partially offset by an increase in water sales in the southern valleys however we note that the revenue collected per ML of delivered water is much less in the southern valleys than in the northern and central valleys.

In 2015-16:

- At a corporate level, we are forecasting a revenue shortfall of $12 million due to an expected 33 per cent decline in water sales against the 20 year rolling average (see Table 97). Our forecast is based on actual usage up to 31 December 2015 and forecast usage for the remainder of the year consistent with current storage levels, historical water usage trends and a dryer than average rainfall forecast.

[74] The revenue requirement we discuss is the unsmoothed forecast total revenue requirement.
[75] From the ACCC State Water PTRM – Final Decision – Consolidated. Figures calculated using ACCC forecast CPI.

18.3.2 Actual water usage compared to regulatory forecasts

In the current and previous determinations for MDB valleys and coastal valleys, usage forecasts incorporated into calculating prices were based on the 20 year rolling averages.

A comparison of the actual usage against the forecast for MDB valleys is shown in Table 97 below. The 2015-16 usage figure is an estimate and 2015-17 usage figure is the 20 year rolling average. The methodology for forecasting usage is explained in section 5.4.

Table 97 Comparison of the actual usage against the forecast for MDB valleys 2014-15 to 2016-17* (ML)

MLs	2014-15	2015-16	2016-17	Average
Forecast (20 year rolling average)	4,283,475	4,456,858**	4,473,718	4,404,684
Actual usage	4,216,483	3,005,450	4,473,718	3,898,550
Difference from forecast	(66,993)	(1,451,408)	0	-506,133
% difference	-1.6%	-32.6%	0%	-11%

* These figures exclude Lowbidgee (which consists of supplementary licence holders) and the Fish River Scheme.

** In 2015-16, the ACCC adjusted the 20 year rolling average to include interstate trade usage that was omitted in determining the 2014-15 20 year rolling average.

As shown in Table 97 above, the estimated 2015-16 entitlement volume is currently approximately 33 per cent below regulatory forecast, while actual usage in the MDB valleys was on average 11 per cent less than forecast over the current regulatory period.

A comparison of the actual usage against the forecast for the Fish River scheme is shown below:

Table 98 Comparison of the actual usage against the forecast for the Fish River Scheme 2014-15 to 2016-17* (ML)

MLs	2014-15	2015-16	2016-17	Average
Forecast (20 year rolling average)	10,488	10,326	9,963	10,259
Actual usage	4,553	4,845	9,963	6,454
Difference from forecast	-5,935	-5,481	0	--3,805
% difference	56.6%	53.1%	0	37%

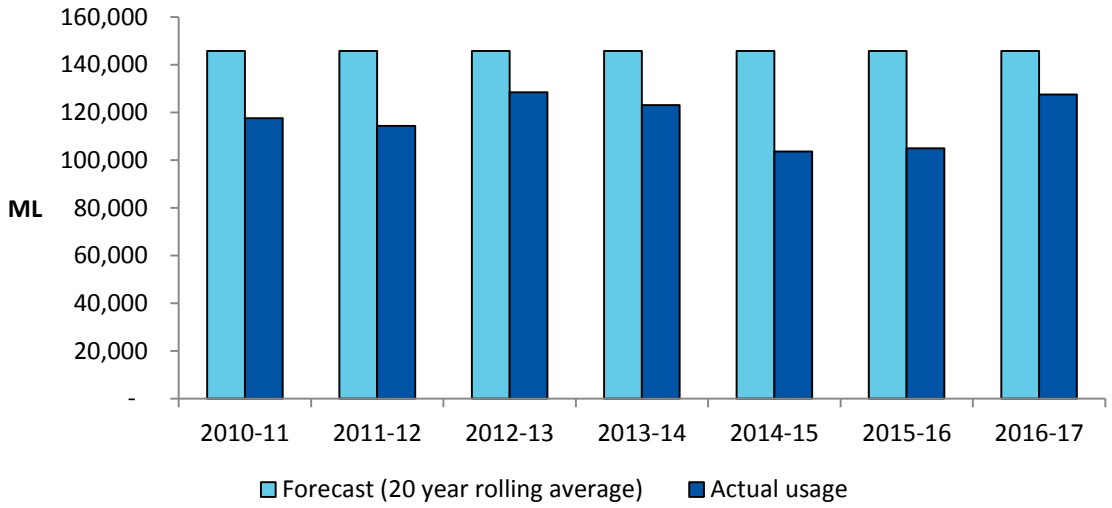
As discussed in section 6.8, the reduction in water usage is driven by the closure of the Wallerawang power station which is a major customer of the Fish River Scheme (along with its Mt Piper power station).

A comparison of the actual usage against the forecast for coastal valleys is shown in Table 99 and Figure 26 below.

Table 99 Comparison of the actual usage against the forecast for coastal valleys for 2010-11 to 2016-17 (ML)

ML	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Forecast (20 year rolling average)	145,851	145,851	145,851	145,851	145,851	145,851	145,851
Actual usage	117,566	114,364	128,463	123,071	103,682	105,000	127,610
Difference from forecast	-28,285	-31,487	-17,388	-22,780	-42,169	-40,851	-18,241
% difference	-19.4%	-21.6%	-11.9%	-15.6%	-28.9%	-28.0%	-12.5%

Figure 26 Comparison of the actual usage against the forecast for coastal valleys for 2010-11 to 2016-17 (ML)



The actual usage in the coastal valleys was consistently below the forecast over the 2010-11 to 2016-17. The average difference over the period was approximately 20 per cent less than forecast.

18.3.3 Comparison of forecast and actual customer entitlements

The entitlement volumes are shown in the charts below. Table 100 shows the three year average for figures for the MBD valleys.

Table 100 Comparison of forecast and actual entitlement volumes for MDB valleys (average over 2014-2017) (ML)

	Forecast	Actual*	Difference	% Difference
HS MDB (3 year average)	852,523	856,514	3,991	0.5%
GS MDB (3 year average)	6,659,995	6,676,127	16,132	0.2%
Supplementary licences (Lowbidgee)	747,000	747,000	0	0.0%

*We have calculated the actual 3 year average for the current determination period using actual 2014-15 entitlement figures sourced from our Water Accounting System and an estimate of entitlements figures for the 2015-16 and 2016-17 as per our submission to the ACCC on the 2016-17 Annual Review of Regulated Charges.

Water entitlements are generally steady year on year and are based on the number of licences as advised by DPI Water. The difference in entitlement numbers in the current determination period against actual entitlements is largely the result of administrative dealings by the under the *Water Management Act 2004 (NSW)*, as well as the cancellation of licences and the issuing of new licences under the relevant WSPs.

A comparison of the entitlement volumes for coastal valleys is shown in the charts below. Table 101 shows the seven year average of forecast and actual entitlement volumes for the coastal valleys over the 2010-11 to 2016-17 period.

Table 101 Comparison of forecast and actual entitlement volumes for coastal valleys (ML)

	Forecast*	Actual*	Difference	% Difference
HS Coastal valleys	71,842	72,041	199	0.3%
GS Coastal valleys	172,299	161,452	-10,847	-6.3%

* We have used actual entitlements held by customers in the coastal valleys as at the end of 2014-15 as a comparison to the determination forecasts.

As shown above, the average forecast and actual entitlement volumes for high security entitlements were closely aligned for coastal valleys but for general security, actual entitlement volumes were 6.3 per cent lower than the average forecast.

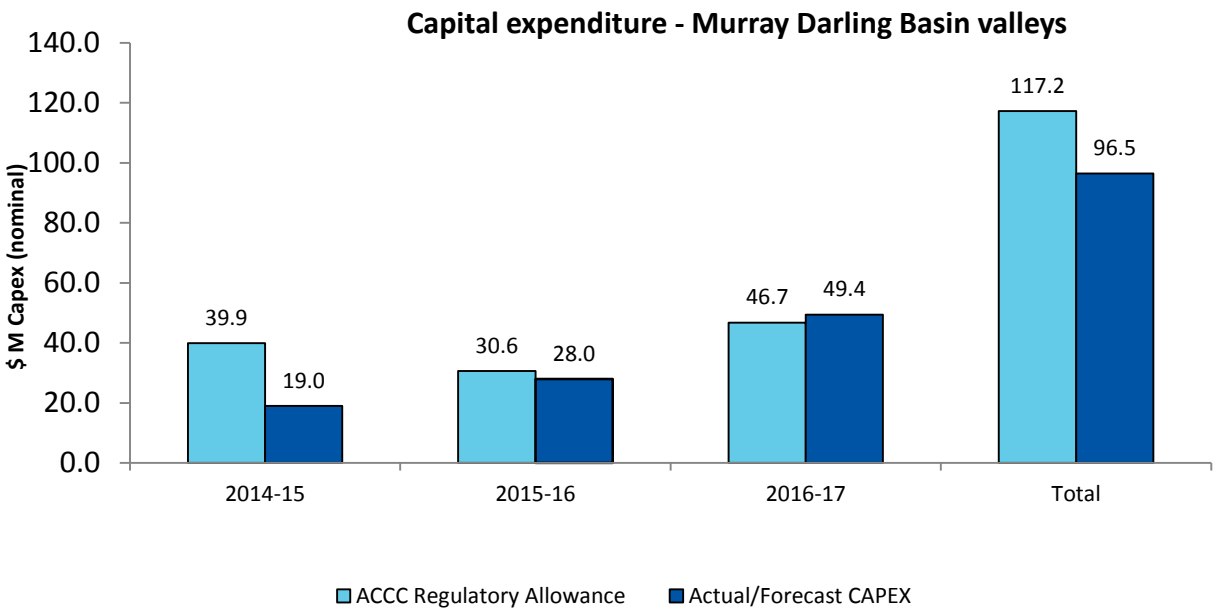
18.4 Capital expenditure

18.4.1 Overview

Overall, in the period from 2014-15 to 2016-17, WaterNSW did not spend the full capital expenditure allowance in the MDB valleys provided for in the ACCC 2014 Decision.

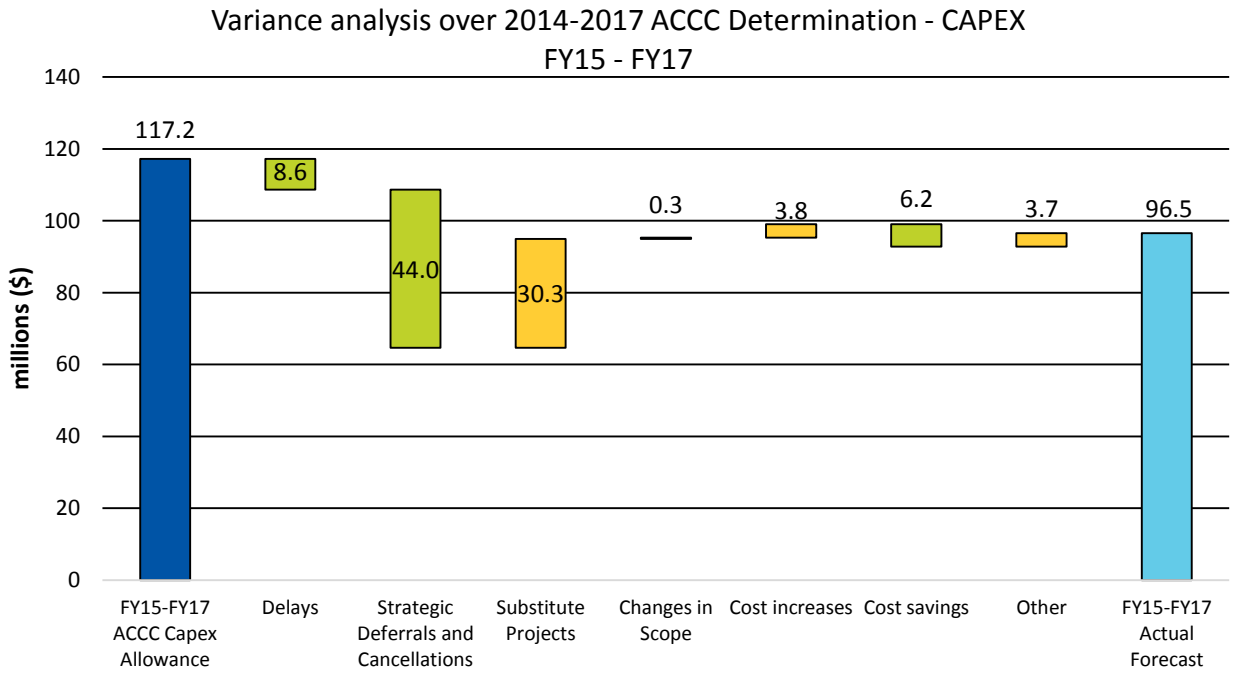
Figure 27 below shows our actual capital expenditure against the ACCC net capital expenditure allowance (that is, excluding externally funded contributions) in nominal terms.

Figure 27 Forecast capital expenditure against ACCC net capital expenditure allowance 2014-15 to 2016-17 ($nominal)



The figure below presents the current determination outcomes. It presents the contribution of various causes to the net underspend on the determination allowance. Each of these causes is then explained in greater detail.

Figure 28 – Variance analysis of ACCC Determination Outcome ($nominal)



* The capex allowance figures were sourced from the ACCC post tax revenue models.

18.4.1.1 Delays

A small proportion of the regulatory underspend was due to project delays. The procurement strategy will further reduce delays imposed through the procurement process, with end to end project efficiencies expected as a result.

18.4.1.2 Strategic Deferrals and Cancellations

In the ACCC 2014 Decision, the ACCC did not approve State Water's proposed capital expenditure for MDB valleys. The ACCC approved a capital expenditure allowance of $111 million ($2013-14) [76] or $117 million in nominal terms. The amount the ACCC allowed was $85 million less (43 per cent) than what State Water proposed. This allowance did not provide sufficient funds to deliver budgeted programs and resulted in State Water having to realign its capital program. This was a complex exercise and involved rebalancing priorities. This was made more difficult by the inability to reallocate capital expenditure funds between valleys and the financial size and the uneven geographic spread of individual projects.

Additional deferrals over the period include dam safety project deferrals pending confirmation of new risk based standards following the passing of the *Dam Safety Act* 2015. Also the extensive fishway program (environmental planning and protection) has been suspended following concerns over escalating costs of fishway construction and operation. Apart from these, the $3 million North Macquarie Marsh Bypass Channel desilting project has been deferred pending the outcome of a proposed Commonwealth Sustainable Diversion Limits project which would render the asset operationally redundant.

18.4.1.3 Substitute Projects

This positive variance is evidence of a program which is responsive to changes in organisational and customer needs. A number of projects have been advanced based on WaterNSW risk based methodologies, with a focus on capital expenditure which has a customer share of funding. Continual improvement of this process is underway, and will include consideration of how the procurement process can be more responsive to substitute projects.

[76] ACCC (2013) ACCC Final decision on State Water Pricing Application, 2014-15 – 2016-17, p. 31.

18.4.1.4 Changes in Scope, Cost Increases

A number of projects have increased spend due to either increased scope in response to changing project requirements. Also there were some projects with overspend, which is typical for a program of this size, where emergent issues result in underspend for a proportion of the projects. As discussed above, the WaterNSW portfolio/ program level approach to asset planning will allow more flexibility to respond at the program level to these overspends through rephasing or deferral on a risk prioritised basis. The procurement strategy will also consider how panel based procurement can mitigate over spend risks across the portfolio.

18.4.1.5 Cost Savings

Effective project management delivered cost savings of $11 million. Our improved procurement strategy will aim to continue to deliver increased cost savings on individual projects. Further, our new asset management and capital planning approach for Maintaining Capability, which doesn't seek a program contingency or budgets for individual projects, means that we will more effectively deliver within the requested funding envelope and we will avoid larger underspends. This will be achieved using the more flexible risk based prioritisation approach discussed above in section 13. Efficiencies will be sought through identification of deferral or optimisation opportunities in the detailed planning stage, with the savings then able to be offset by prudent substitutions.

18.4.2 Comparison of allowed and actual capital expenditure

In Table 102 below we present a comparison of the total (user and Government share) allowed and actual capital expenditure by activity for 2014-15 to 2016-17. These numbers exclude externally funded capital contributions and MDBA/BRC capital expenditure.

Table 102 Comparison of total capital expenditure in MDB valleys 2014-15 to -2016-17 ($000s nominal)

Comparison of capital expenditure (MDB valleys only) net of externally funded contributions								
	2014-15		2015-16		2016-17		Total	
	Allowed	Actual	Allowed	Estimate	Allowed	Estimate	Allowed	Actual
Water Delivery & Other Operations	257	1,660	579	0	379	3,191	1,215	4,851
Environmental Planning & Protection	2,701	2,924	0	3,240	17,749	1,897	20,450	8,061
Corporate Systems	3,059	0	2,663	588	2,254	9,832	7,976	10,420
Renewals and Replacement	4,279	0	9,521	1,721	5,279	14,825	19,079	16,546
Corrective Maintenance		2,361		0		0	0	2,361
Routine Maintenance		-1		0		0	0	-1
Asset Management and Planning		91		844		0	0	935
Dam safety compliance on pre 1997 capital projects	29,634	11,889	17,846	19,532	21,047	18,432	68,526	49,853

Other		114		2,072		1,258	0	3,444
Total	39,931	19,038	30,609	27,997	46,707	49,436	117,247	96,471
Variance from Allowance		-20,893		-2,611		2,729		-20,775

Note 2015/16 actual figures are estimated; 2016-17 actual figures are forecast.

In Table 103 below we present a comparison of the user share of allowed and actual capital expenditure for 2014-15 to 2016-17 (excluding externally funded capital contributions and MDBA/BRC capital expenditure.

Table 103 Comparison of user share of capital expenditure in MDB valleys 2014-15 to -2016-17 ($000s nominal)

Comparison of user share capital expenditure (MDB valleys only)								
	2014-15		2015-16		2016-17		Total	
	Allowed	Actual	Allowed	Estimate	Allowed	Estimate	Allowed	Actual
Water Delivery & Other Operations	257	1,660	579	0	379	3,191	1,215	4,851
Environmental Planning & Protection	1,350	1,462	0	1,620	8,875	949	10,225	4,031
Corporate Systems	3,059	0	2,663	588	2,254	9,832	7,976	10,420
Renewals and Replacement	3,876	0	8,755	1,549	5,008	13,455	17,638	15,004
Corrective Maintenance		2,361		0		0	0	2,361
Routine Maintenance		-1		0		0	0	-1
Asset Management and Planning		91		844		0	0	935
Dam safety compliance on pre 1997 capital projects	269	0	1,713	0	7,451	737	9,432	737
Other		114		2,072		1,258	0	3,444
Total	8,811	5,687	13,710	6,673	23,966	29,422	46,487	41,782
Variance from Allowance		-3,124		-7,037		5,456		-4,705

Note 2015/16 actual figures are estimated; 2016-17 actual figures are forecast.

We are expecting that the actual user share of capital expenditure for MDB valleys to be $4.7 million (10 per cent) less than the ACCC regulatory allowance of $46.4 million. This is primarily due to lower expenditure in Dam Safety, Environmental Planning and Protection and Renewals and Replacement as shown in sections 18.4.4, 18.4.5 and 18.4.6 below.

In Table 104 below we present a comparison of the government share of allowed and actual capital expenditure for 2014-15 to 2016-17.

Table 104 Comparison of Government share of capital expenditure in MDB valleys 2014-15 to -2016-17 ($000s nominal)

Comparison of Government share capital expenditure (MDB valleys only)								
	2014-15		2015-16		2016-17		Total	
	Allowed	Actual	Allowed	Estimate	Allowed	Estimate	Allowed	Actual
Water Delivery & Other Operations	0	0	0	0	0	0	0	0
Environmental Planning & Protection	1,350	1,462	0	1,620	8,875	949	10,225	4,031
Corporate Systems	0	0	0	0	0	0	0	0
Renewals and Replacement	404	0	766	172	271	1,370	1,441	1,542
Corrective Maintenance	0	0	0	0	0	0	0	0
Routine Maintenance	0	0	0	0	0	0	0	0
Asset Management and Planning	0	0	0	0	0	0	0	0
Dam safety compliance on pre 1997 capital projects	29,365	11,889	16,133	19,532	13,596	17,696	59,094	49,117
Other	0	0	0	0	0	0	0	0
Total	31,120	13,351	16,899	21,324	22,741	20,014	70,760	54,689
Variance from Allowance		-17,769		4,425		-2,727		-16,070

As shown in the table above, we expect an underspend of $16 million (23 per cent) in the government share of capital expenditure compared to the allowance of $70.8 million. This can be largely attributed to an underspend in Dam safety compliance on pre 1997 capital projects of $9.2 million and Environmental Planning and Protection of $6.2 million. The main reasons for the underspend are discussed below.

18.4.3 Drivers of capital expenditure

Capital expenditure is primarily driven by requirements in legislation and our operating licence.

In the 2014 ACCC determination, WaterNSW capital expenditure over the 2014-15 to 2016-17 regulatory period was categorised into five main elements:

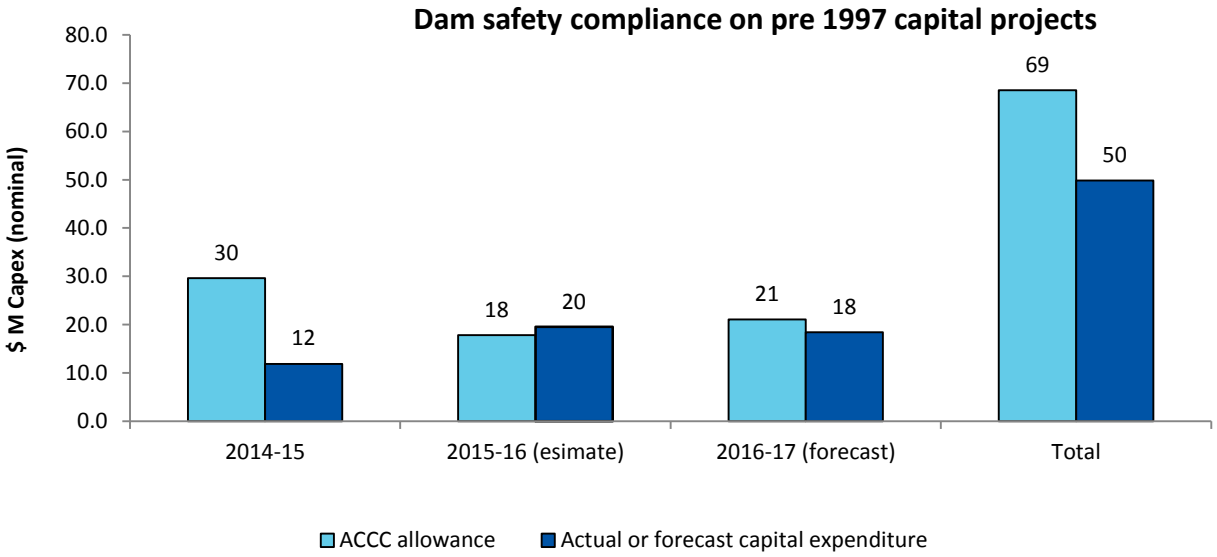
1. Dam safety compliance
2. Environmental planning and protection
3. Renewal and replacement
4. Water delivery and operations
5. Corporate systems.

We describe these drivers of past capital expenditure and the reasons for any variances.

18.4.4 Dam safety compliance

Figure 29 below shows our actual capital expenditure on pre 1997 projects against the ACCC net capital expenditure allowances in nominal terms.

Figure 29 Actuals and forecast capital expenditure on pre 1997 capital projects against ACCC net capital expenditure allowance 2014-15 to 2016-17 ($nominal)



Dam Safety compliance comprised of a program to design and implement various measures to increase the dam safety compliance of our prescribed dams. WaterNSW has an obligation under its operating licence to follow Dams Safety Committee guidelines and adopted a risk prioritised staged approach to dam safety compliance.

Expenditure to address dam safety compliance issues which were evident pre 1997 is 100 per cent government funded.

Within the current pricing period dam safety capital expenditure was approved for Wyangala Dam, Keepit Dam and Chaffey Dam.

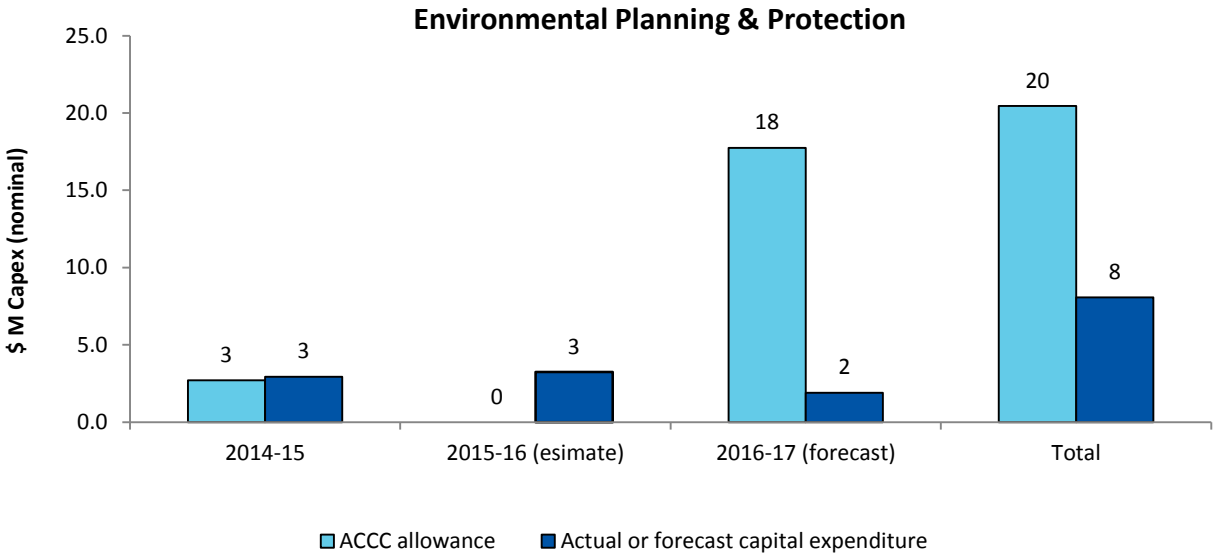
WaterNSW expects to underspend its regulatory compliance allowance by $18.6 million (or 27%) over the regulatory period. The main reason for the underspend is that following the passage of the Dam Safety Act at the end of 2015, WaterNSW decided not to proceed with some of the dam safety programs in the light of the uncertainty posed by potential new dam safety standards.

Capital expenditure on dam safety compliance will in future be captured in the ‘regulatory compliance’ driver.

18.4.5 Environmental planning and protection

Figure 30 below shows our actual capital expenditure on environmental planning and protection against the ACCC net capital expenditure allowances in nominal terms.

Figure 30 Actuals and forecast capital expenditure on environmental planning & protection against ACCC net capital expenditure allowance 2014-15 to 2016-17 ($ nominal)



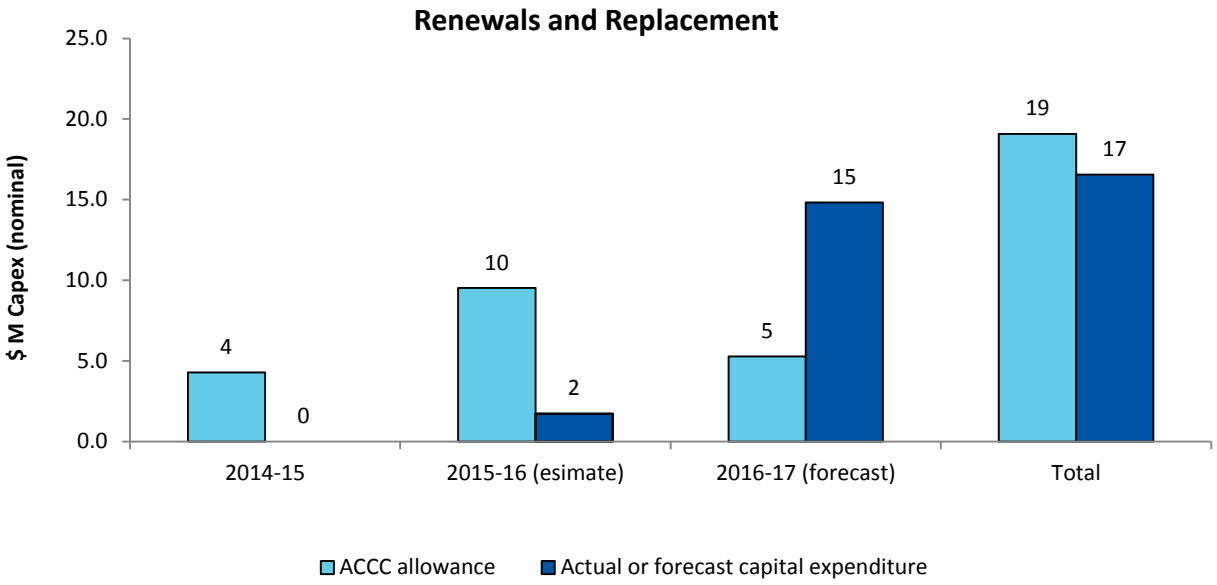
Environmental planning and protection is primarily based on expenditure on fishway passages or offsets. This program predominantly comprised of fishways to 'offset' WaterNSW's obligations under section 218 of the F*isheries Management Act section 1994*, primarily arising from dam safety upgrades. Fish Passages are 50 per cent government and 50 per cent customer funded (see section 10.6 above). Under the legislation we are required, when requested by the Minister, to install a fish passage, or as has been the case with the Dam Safety Upgrade program, negotiate an offset with Fisheries NSW. We expect to underspend in this category by $12.3 million (or 61 per cent) due to the suspension of the fish passage program.

Other expenditure included cold water pollution mitigation measures, and erosion protection works at Lake Brewster.

18.4.6 Renewal and replacement

Figure 31 below shows our actual capital expenditure on renewals and replacement against the ACCC net capital expenditure allowances in nominal terms.

Figure 31 Actuals and forecast capital expenditure on renewals and replacement against ACCC net capital expenditure allowance 2014-15 to 2016-17 ($nominal)



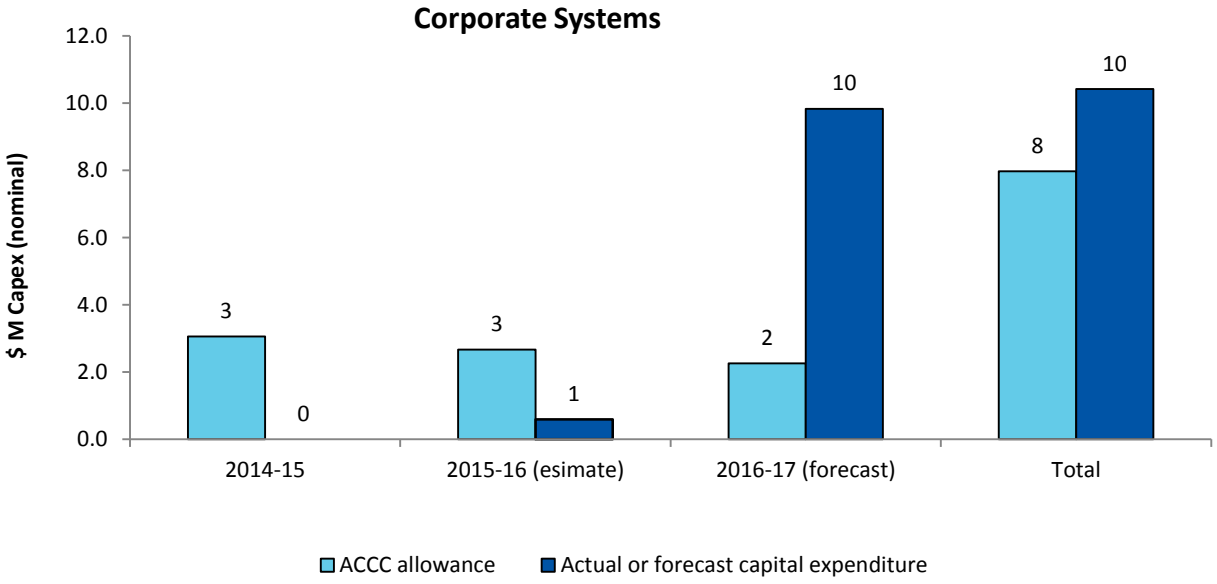
The renewal and replacement program is capital expenditure on capital interventions to maintain or restore the capability of WaterNSW assets. It comprised mostly of works on Water Infrastructure Assets using tailored service potential/ condition assessment methodologies (Future Asset Service Potential under State Water, Asset Health Index under WaterNSW).

WaterNSW is expecting to underspend in this category by $2.5 million representing 13 per cent of the allowance. This was primarily due to the decision to re-phase and reprioritise projects following the 2014 ACCC Decision.

18.4.7 Corporate systems

Figure 32 below shows our actual capital expenditure on corporate systems against the ACCC net capital expenditure allowances in nominal terms.

Figure 32 Actuals and forecast capital expenditure on corporate systems against ACCC net capital expenditure allowance 2014-15 to 2016-17 ($nominal)



This category of capital expenditure was predominantly for information and communication technology infrastructure. This comprises a significant driver for WaterNSW expenditure given the widely dispersed nature of operational assets.

WaterNSW expects to overspend on corporate systems by $2.6 million which represents 31 per cent more than the regulatory allowance.

18.4.8 Water delivery and other operations

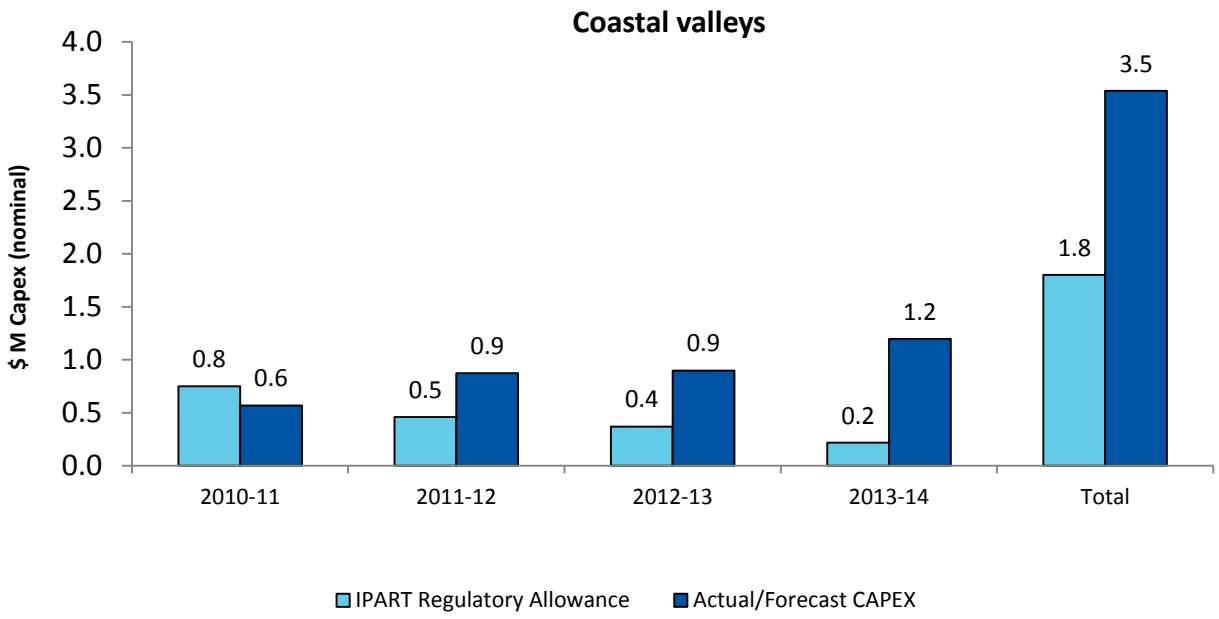
The actual cost of the water delivery and other operations category over the current period is expected to be $4.9 million compared to the $1.2 million regulatory allowance, that is, $3.6 million greater than the allowance. This difference can largely be explained by a reclassification of iSmart (Integrated surveillance, monitoring, automation and remote telemetry)[77] expenditure from Corporate Systems to Water Delivery. The iSmart assets are related to water delivery and as such this is a more appropriate classification. [78]

18.5 Coastal valleys

In the coastal valleys, WaterNSW overspent on capital expenditure compared to the IPART capital allowance as determined under the IPART 2010 bulk water review for the 2010-11 to 2013-14 period.

Figure 33 below shows the actual capital expenditure in the coastal valleys against the IPART regulatory allowance.

Figure 33 Actuals and forecast capital expenditure in the coastal valleys against the IPART regulatory allowance 2010-11 to 2013-14 ($nominal)



The expenditure is explained below according to expenditure category.

[77] iSmart involves the design, development, construction and integration of critical systems and infrastructure to support remote operation and monitoring of 20 major dams and 53 weirs and regulators across regional NSW. iSMART provides business-wide, integrated and centralised approach to managing assets by providing real-time control and data for water delivery, surveillance and asset management.

[78] The water delivery and other operations activity also predominately comprises externally funded expenditure on the Computer Aided River Management System (CARMS) which has continued to be implemented on the Murrumbidgee River.

18.5.1 Renewals and replacements

These amounts are typically the result of required unforeseen capital expenditure, refurbishment of ageing infrastructure and dam surveillance activities. Examples include minor pipe valve replacements, water supply tank replacement, SCADA telecommunication system upgrades, refurbishment at Glenbawn Dam and 25 year dam surveillance inspection.

18.5.2 Water delivery and other operations

This category consists of corporate wide projects, including dam surveillance IT systems allocated across all valleys, including the coastal valleys as per the IPART approved allocation methodology. For example OS SCADA Network Architecture.

18.5.3 Corporate Systems

The then State Water undertook necessary IT work related to front end system/software integration, for example OS Centralised CAIRO Systems. This was allocated across all valleys, including the coastal valleys.

18.5.4 Water Delivery and Operations

Over the current determination WaterNSW was required to manage a significant drought across the northern and central river basins. The northern part of the State and southern Queensland have received below average rainfall for the past three years with the northern valley storages currently at an average of 16 per cent with very low general security allocations being provided over the past few years.

The drought has now started to extend to the southern valleys and without significant rainfall over the winter in the south drought management plans will need to be implemented in the next water year.

18.6 Operating expenditure

18.6.1 Overview

WaterNSW is on track to achieve significant reductions in operating expenditure compared to the ACCC regulatory allowance. The merger between State Water and SCA and the resulting efficiencies of the new WaterNSW organisation have been the primary driver of these cost reductions.

This has resulted in a step change reduction of operating expenditure. The lower operating cost structure is forecast to continue as discussed in section 14.1 above.

18.6.2 Comparison of allowed and actual operating expenditure

In the ACCC 2014 Decision, operating expenditure for the MDB valleys in the 2014-15 to 2016-17 regulatory period was forecast to be $121.3 million in nominal terms (or $115.3 million in $2013-14).[79]

WaterNSW actual operating expenditure for the current period is expected to be $106.5 million which is $14.8 million less than the ACCC regulatory forecast.[80]

Table 105 shows the comparison of actuals against the ACCC allowance.

[79] These figures exclude debt raising costs and MDBA and BRC pass through charges.
[80] We use the term expected because the 2015-16 figure is an estimate and 2016-17 is WaterNSW's forecast.

Table 105 Comparison of allowed and actual operating expenditure for MBD valleys

$nominal, 000s	2014-15	2015-16	2016-17	Total
ACCC opex allowance*	39,749	40,517	41,021	121,288
WaterNSW actual opex	34,926	36,752	34,823	106,501
Difference	**-4,823**	**-3,765**	**-6,199**	**-14,787**
% Difference	-12%	-9%	-15%	-12%

* ACCC allowance has been sourced from the ACCC post tax revenue models (ACCC 2014 Final Decision for State Water Corporation).

In aggregate, WaterNSW is expecting actual operating expenditure 12 per cent less than the ACCC regulatory allowance for the MDB valleys for the current regulatory period.

The key reasons for the lower operating costs are:

- restructuring within the organisation resulting in lower expenditure on salaries and wages and employee related costs
- reduction in the use of contractors and consultancies
- reduction in the cost of materials, plant and equipment.

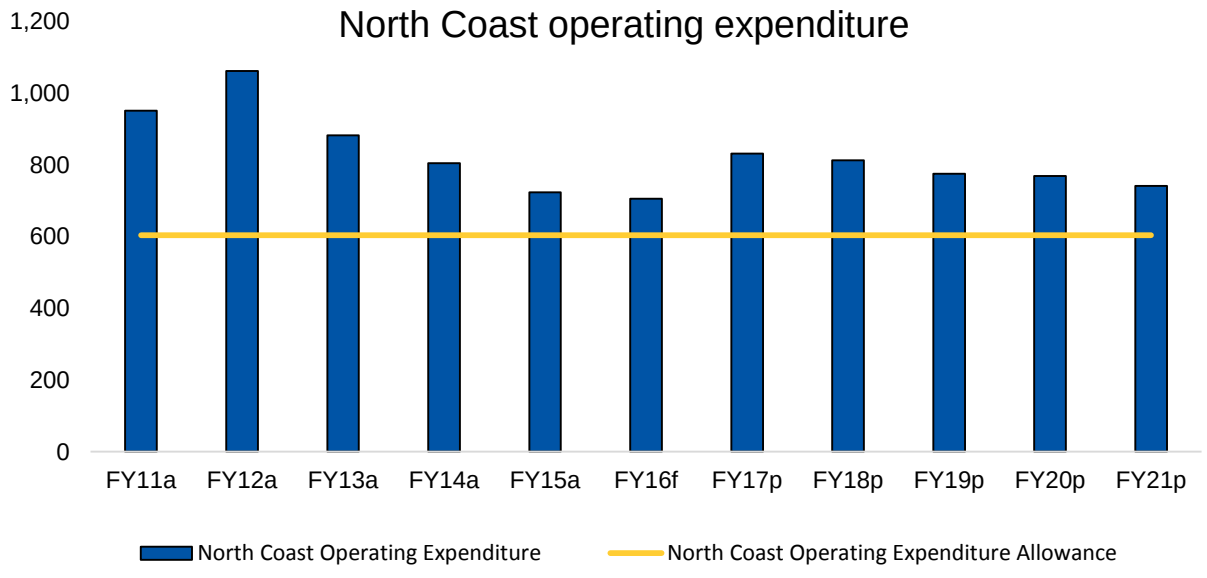
WaterNSW undertook a restructure to integrate the merged organisations. This involved a bottom up review of the organisational structure and job design. This has resulted in efficiencies across the organisation.

18.6.3 Coastal valley operation expenditure

For the Coastal valleys the 2013-14 regulatory allowance was set by IPART in 2010 and has been carried forward to the 2016-17 financial year without an adjustment for CPI. It is therefore not reflective of the prudent and efficient costs of a bulk water operator in the 2017-21 determination period.

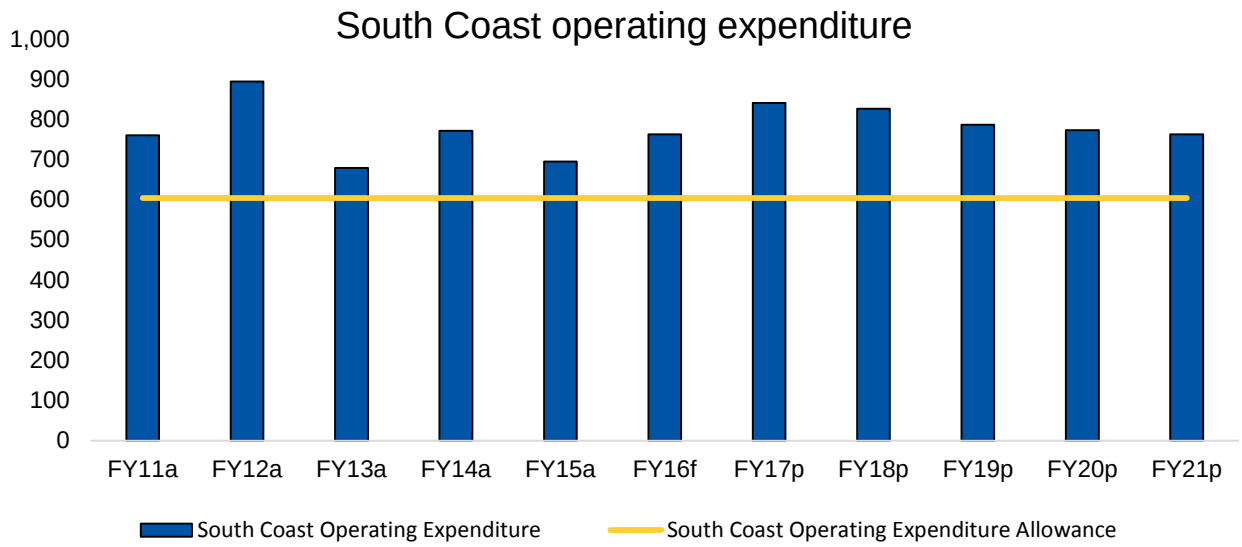
The regulatory allowance was not sufficient to meet the running costs of water infrastructure assets in the North Coast, and in some years the South Coast valley as shown in Figure 34 and Figure 35 below.

Figure 34 North Coast operating expenditure compared to the 2013-14 IPART regulatory allowance (2016-17 $'000)



*"a" means actual, "f" means forecast, "p" means projections. Actual operating expenditure prior to FY15 was incurred by the former State Water.

Figure 35 South Coast operating expenditure compared to the 2013-14 IPART regulatory allowance (2016-17 $ '000)



*"a" means actual, "f" means forecast, "p" means projections. Actual operating expenditure prior to FY15 was incurred by the former State Water.

An explanation of the variances is as follows:

- North Coast: the IPART determination anticipated a reduction in staffing, from two to one with associated costs and reducing dam safety surveillance from seven to five days. The Dams Safety Committee did not allow for the reduction in surveillance and therefore costs increased as resources (staff) were required to travel from other storages to cover weekend shifts and days offs. Travel costs were greater than having two staff on site and thus the second staff member was reinstated
- South Coast: variations against the IPART determination are largely due to timing difference as to when major periodic maintenance needs to be incurred against the averaging of maintenance cost across the determination period.

19. Legislative framework

WaterNSW is obliged meet a number of regulatory, customer service and other requirements which form key drivers on our operating and capital costs. Our operating and capital cost forecasts have been based on meeting these obligations. This section summarises obligations that have an impact on our costs.

WaterNSW is a state owned corporation under the *State Water Corporation Act 2004 (NSW)* and operates under the *Water NSW Act, 2014 (NSW)*. The Water NSW Act establishes WaterNSW as a State Owned Corporation and sets out our principal objectives, functions and areas of operation.

19.1 State Owned Corporation Act 1989

The *State Owned Corporations Act 1989 (NSW)* specifies at section 8 that the principal objectives are equally:

> *"(a) to be a successful business and, to this end:*
>
> *(i) to operate at least as efficiently as any comparable businesses, and*
>
> *(ii) to maximise the net worth of the State's investment in the SOC, and*
>
> *(b) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates, and*
>
> *(c) where its activities affect the environment, to conduct its operations in compliance with the principles of ecologically sustainable development contained in section 6 (2) of the Protection of the Environment Administration Act 1991 , and*
>
> *(d) to exhibit a sense of responsibility towards regional development and decentralisation in the way in which it operates*."

19.2 Water NSW Act

WaterNSW is also subject to the *Water NSW Act 2014* which came into effect on 1 January 2015 allowing for the continuation of the legal entity of State Water Corporation to become WaterNSW and to assume the functions of the former Sydney Catchment Authority (SCA) On 1 January 2015 the assets, rights and liabilities of the former SCA were transferred to WaterNSW. The Water NSW Act consolidated, with modifications, the provisions of the former Sydney Water Catchment Management Act 1998 and the former State Water Corporation Act 1989.

The objectives and functions of WaterNSW were refined to reflect and consolidate the functions of the SCA and State Water Corporation into a single entity. The principle objectives of WaterNSW subject to this pricing proposal are as set out in section 6(1) of the Water NSW Act 2014 as follows:

> "(*a) to capture, store and release water in an efficient, effective, safe and financially responsible manner, and*
>
> *(b) to supply water in compliance with appropriate standards of quality, and*
>
> *(c) to ensure that declared catchment areas and water management works in such areas are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment, and*
>
> *(d) to provide for the planning, design, modelling and construction of water storages and other water management works, and*
>
> *(e) to maintain and operate the works of Water NSW efficiently and economically and in accordance with sound commercial principles."*

The other objectives of WaterNSW as set out in section 6(2) of the Water NSW Act 2014 are:

> *(a) to be a successful business and to that end:*
>
> *i. operate at least as efficiently as any comparable business, and*

ii. to maximise the net worth of the State's investment in Water NSW.

(b) to exhibit a sense of social responsibility by having regard to the interests of the community in which it operates,

(c) to exhibit a sense of responsibility towards regional development and decentralisation in the way in which it operates,

(d) where activities affect the environment comply with ecologically sustainable development provisions in the Protection of the Environment Administration Act 1991.

The *Water NSW Act* continues the separate operating licences of State Water Corporation and SCA with their respective focus on water supply to regional and rural areas and the management and protection of the Sydney catchment. The operating licence for WaterNSW is discussed in section 19.3 below.

We are subject to a range of legislative instruments that cover our water operations and other matters. In the section below, we describe the obligations that have the greatest impact on our operating and capital expenditure requirements.

19.3 Operating licence

19.3.1 Obligations

WaterNSW is licensed under the State Water Corporation Operating Licence 2013-2018 (the Licence) which enables and requires us to carry out our functions within the Area of Operations on the terms and conditions set out in the Licence. The Licence sets out our obligations in relation to:

- Water quality
- Water quantity
- Asset management
- Customers
- Environmental management
- Monitoring of performance
- Conferred functions.

19.3.2 Conferred functions

The Licence confers functions on WaterNSW. We are required to exercise any functions conferred under the Licence consistently with the *Water Management Act 2000 (NSW)*, the Water NSW Act 2014, the *New South Wales – Queensland Border Rivers Act 1947 (NSW),* any other relevant law and any relevant Water Management Plan. Our Licence requires us to publish a conferred functions statement setting out any roles and responsibilities regarding the conferred functions which have been agreed with relevant government departments and agencies.[81]

The Licence confers on WaterNSW functions under the specified sections of the *Water Management Act 2000 (NSW)* as follows:

- approving the form of an application for an assignment dealing with an access licence;
- granting consents to temporary water transfers;
- debiting and crediting of water accounts;
- suspending access licences and suspending approvals in relation to a failure to pay any fees or charges;
- authorising the taking of water by means of a metered work while its metering equipment is not operating properly;
- imposing and recovering fees and charges consistent with any relevant determination in relation to the price of Bulk Water made by IPART or any other pricing authority;
- making a temporary water restriction order where water restrictions are required as a result of an emergency works failure;

[81] Refer to http://www.waternsw.com.au/__data/assets/pdf_file/0003/65676/Conferred-Functions-Statement-Oct-2013.pdf

- issuing certificates subject to any requirement approved by the Minister administering the Water Management Act 2000 (NSW); and
- recovering fees and charges as approved by the Minister administering the Water Management Act 2000 (NSW)

The Licence confers on WaterNSW functions under the specified sections of the Water Act 2012 (NSW) as follows:

- entering any land to take levels, make surveys and marks, fix pegs and stakes and inspect any water works under section 22(1).

The Licence confers on WaterNSW functions under the specified sections of the *New South Wales – Queensland Border Rivers Act 1947 (NSW)*, subject to any requirement imposed by the Minister administering the *New South Wales – Queensland Border Rivers Act 1947 (NSW)* or the Border Rivers Commission, as follows:

- constructing, maintaining, operating and controlling relevant works in New South Wales under section 14; and
- exercising the powers and obligations of a "Controlling Authority".

19.3.3 Customer service committees

In 1999, we established Customer Consultative Committees (CSCs) as required under our previous operating licence. The eight valley-based CSCs are:

- Border Rivers
- Coastal
- Fish River Customer Council
- Gwydir
- Lachlan
- Macquarie Cudgegong
- Murray and Lower Darling
- Murrumbidgee
- Namoi Peel.

CSCs are made up of customers and stakeholders representing the following user groups; (the structure of a committee may vary from valley to valley):

- Customers from regulated rivers, plus unregulated river and groundwater users
- Office of Environment and Heritage
- Local Land Services (replaced Catchment Management Authorities).

The membership may also include;

- Representatives from irrigation schemes or corporations
- Stock and domestic water users
- Stock and domestic effluent creek users
- Local government
- Industry (eg. power generation, mining, growers associations, etc)
- Irrigation associations, and
- Commonwealth Environmental Water Office (CEWO).

CSCs provide a forum for customer and stakeholder consultation on:

- water release strategies
- customer services
- asset management priorities
- pricing strategies, and
- discretionary projects.

Since their introduction CSCs provide a forum for working with customers to improve the services provided by WaterNSW in each valley. This includes identifying and reporting on valley specific

issues, developing operational improvements, setting asset management priorities, and communicating customer service, business and operating environment changes.

Our operating licence requires the established committees continue as a means of consultation and effective communication with customers.

19.3.4 CSC customer service charter

In accordance with the Licence we must, in consultation with the CSCs, establish and maintain a customer service charter (the charter). The charter sets out the mutual responsibilities or obligations of WaterNSW and its customers in accordance with the licence, and various Acts.

The charter is published on our website.[82]

Each year by no later than 1 September, we report to IPART our overall performance against our obligations under the Licence.

19.3.5 Fish River Customer Council

Fish River Water Supply Scheme (Fish River Scheme) provides both bulk raw water and drinking water supplies to local water utilities and individual customers via an extensive pipe network.

As a supplier of drinking water in this area we have a requirement to meet stringent water quality standards to protect public health. A key component of the service levels in this area is the development and implementation of drinking water quality management plan in line with the Australian drinking water guidelines.

Our Licence requires that we regularly consult with the Fish River Customer Council. This ensures Fish River customer involvement in issues relevant to the performance of WaterNSW and its obligations to Fish River customers under the licence and any customer contract.

We must appoint the members of the Fish River Customer Council in accordance with the Licence which include representation from Lithgow City Council, Oberon Council; and EnergyAustralia.

19.3.6 Fish River - customer contracts

We must enter into and maintain agreements with our customers in Fish River Water Scheme in relation to the supply of water by the operation of the Fish River Scheme.

The terms of the arrangements must, as a minimum, include:

- the standard of the quality of water supplied
- the continuity of water supplied (i.e. interruption, disconnection and reconnection to supply)
- the metering arrangements
- the costs to be paid by Fish River customers for the supply of water and other services to them, and
- any other terms agreed between us and Fish River customers

19.3.7 Standards of service

WaterNSW releases water from dams and weirs to supply water within the regulated sections of the rivers. The water is released to meet the requirements of bulk water users such as irrigators, industry, urban centres and the environment, and piped supply to customers at Fish River. Our customers depend on the quantity and timing of this delivery.

The Licence provides the basis for key performance indicators that are in place to assess our performance on customer management. These include:

- % customer contacted within one day of placing a non complying order

[82] The charter can be viewed at http://www.waternsw.com.au/__data/assets/pdf_file/0007/67165/Customer-Fact-Sheet-Customer-Service-Charter1.pdf

- % complying orders delivered outside +/-1 one of scheduled delivery measured by complaints
- % of orders rescheduled in consultation with the customer within one day of known shortage
- % age of complying transfer processed within 5 working days
- Number of customer requests for payment assistance
- Number of customers in receipt of payment assistance
- Number of licences and entitlements suspended under *the Water Management Act 2000* or *Water Act 1912 (NSW)*
- Number of approvals suspended under the *Water Management Act 2000.*

We present our performance against KPIs in section 18.2.

19.3.8 Voluntary key performance indicators

WaterNSW has implemented voluntary measures to extend on the regulated KPIs applied by the Licence. These include:

- Customer use of online services – 52%
- Customer calls – 30 seconds - 80%
- Customer complaints (per 1000 customers) - 10
- Customer Complaints to EWON1 (per 1000 customers) - 0.5
- Processing allocation trade applications within 5 working days (COAG2) - 90%
- Operational surplus of releases - 5%.

We show the results of some of these voluntary performance indicators in section 18.2.1 and 18.2.2.

19.4 Dam safety compliance

Prior to the passage of new legislation, WaterNSW managed its prescribed[83] dams to meet the requirements of the NSW Dams Safety Committee under the *Dams Safety Act 1978 (NSW).*

The *Dam Safety Act 2015 (NSW)* provides for a new framework for dam safety. Dams Safety NSW is a continuation of, and the same legal entity as, the former Dams Safety Committee. The functions of Dams Safety NSW include recommending to government the dams safety standard, or standards, that dam owners must meet. This differs from the previous approach, which directly references Australian National Committee on Large Dams (ANCOLD) guidelines. The reforms are intended to ensure that ANCOLD guidelines are translated into the New South Wales regulatory system with greater regulatory impact assessment processes. Dams Safety NSW will be required to conduct a cost-benefit analysis on the proposed standards before they are prescribed. The new legislation provides for dam owners to submit operations and maintenance and emergency plans in accordance with a more compliance-based regulatory model. Dams Safety NSW will have the power to audit plans, and this power will be enhanced by the emergency management and dam operations and management expertise that will be available through the membership of Dams Safety NSW.[84]

The reforms under the Act are intended to improve transparency in the regulation of dam safety and provide dam owners such as WaterNSW with greater flexibility to achieve required standards. The government is consulting with dam owners during the implementation of the Act. WaterNSW also addresses dam safety as part of compliance and performance with our asset management obligations of Operating Licence. This is achieved through a structured program continuous surveillance including inspections, monitoring, surveys, chemical analysis of seepage water, and seismic monitoring:

[83] Prescribed dams are those listed in Schedule 1 of the Dams Safety Act 1978.
[84] The Hon. Blair N. Minister for Primary Industries, and Minister for Lands and Water, Second Reading Speech Dams Safety Bill 2015, 16 September 2015.

- periodical safety reviews typically including flood studies and risk assessment
- remedial action where appropriate
- safe operation and maintenance, including keeping up-to-date manuals and procedures
- Emergency management, planning and implementation including conducting emergency drills
- ongoing personnel training.

Our procedures comply with the requirements of the NSW Dams Safety Committee, and national and international best practice. This regime of surveillance is also in accordance with the Guidelines on Dam Safety Management published by the Australian National Committee on Large Dams.

19.4.1 Water sharing plans

WaterNSW operates in accordance with WSPs and delivers water to customers and the environment. The WSPs are statutory instruments made under section 50 of the Water Management Act 2000. Based on the WSPs, the available water resources are shared throughout the year, allowing water for the environment and for consumptive use

WSPs make provision for the identification, establishment and maintenance of planned environment water, either to promote fundamental ecosystem health or to further specific environmental purposes. WaterNSW must comply with these requirements as set out in the relevant operational rules.

The *Water Management Act 2000* applies to areas that have a WSP and includes areas under our operation. The objectives of the Act are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations.

WSPs establish rules for sharing water for environmental purposes and other users such as town supply, rural domestic supply, stock watering, industry and irrigation.

The water sharing planning provisions of a WSP for a water management area or water source may also deal with:

- taking of water from any water source in the area
- the kinds of water supply works that may be constructed and used in the area
- the operation of water accounts for the area or water source,
- water sharing measures for the protection and enhancement of the quality of water in the water sources in the area or for the restoration or rehabilitation of water sources or their dependent ecosystems.

A list of the relevant water sharing plans can be found at http://www.water.nsw.gov.au/water-management/water-sharing/plans-commenced

19.4.2 Work approvals

The NSW Department of Primary Industries Water (DPI Water) is responsible for approving water supply work.

A water supply work approval authorises its holder to construct and use a specified water supply work at a specified location.

An approval statement from the Department:

- Lists the authorised water supply works including the work type, the parcel of land where the work is located, the water source and zone from which the work extracts or captures water
- Identifies the water access licence/s linked to the work for the purpose of taking water
- Applies conditions (Each water supply works and water use approval has conditions specified in relevant water management plans, for example local water sharing plan. The approval may also have conditions that are specific to the particular approval and location.

WaterNSW has a total of 14 water supply work approvals to cover all of our works. A list of the water supply works approvals can be found at http://www.water.nsw.gov.au/water-licensing/corporate-licences/major-utilities/state-water

19.4.3 Fisheries Management Act

WaterNSW faces obligations under section 218 of the *Fisheries Management Act 1994 (NSW)*, when constructing or altering a dam, floodgate, causeway or weir, to not block the passage of fish. This requires WaterNSW to construct fishway passage or offsets to comply with this obligation and to contribute to the cost of construction and augmentation.

19.5 New regulatory service obligations

19.5.1 Water Act 2007 (Cth)

All Australian governments have committed, through the National Water Initiative (NWI) Intergovernmental Agreement (IGA), to improve water resource management across Australia. As a result, WaterNSW will incur costs implementing measures in line with NWI objectives.

The Commonwealth Water Act 2007 will require WaterNSW to setup its business, systems and processes to apply and comply with new water resource plans which will be implemented from 2019 and beyond.

The water resource plans to be implemented under the Water Act 2007 (Cth) will specifically impact on the following functions:

- Water release rules
- Water accounting rules
- Allocation assignment rules
- IT application rules
- Customer education and communication.

20. Pass through of uncontrollable charges

20.1 MDBA pass through charges

As discussed in section 2.9 the MDBA and BRC manage some areas within the Border, Murrumbidgee and Murray valleys and their cost of operations are allocated to each state. The NSW Government directs WaterNSW to collect these charges on its behalf.

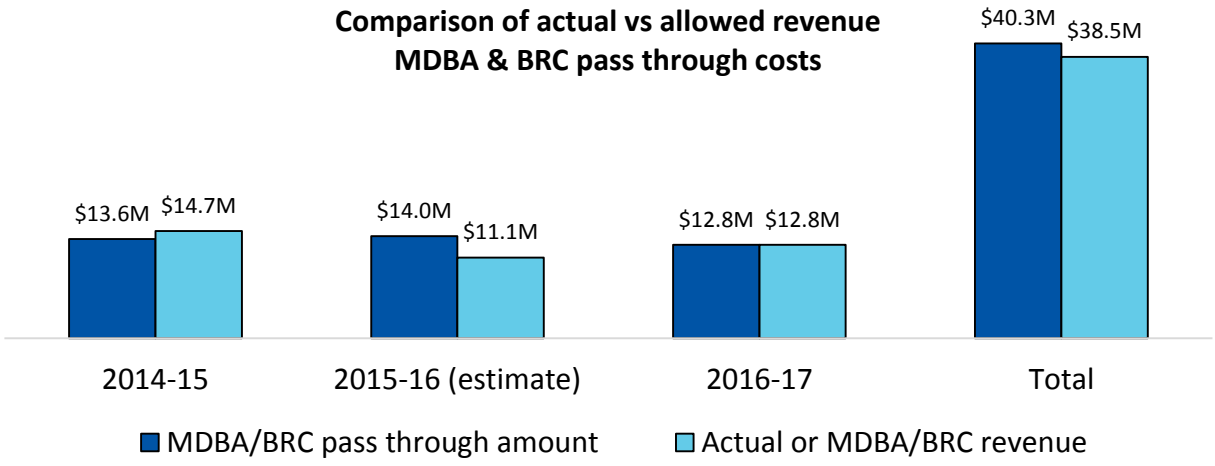
We have received advice from DPI Water that the maximum amount of these charges will be as set out in the table below.

Table 106 MDBA pass through charges (2016/17 real$)

	Pass through costs $'000 (16/17$)	
	MDBA	BRC
2017-18	$18,163	$694
2018-19	$13,914	$718
2019-20	$13,366	$715
2020-21	$13,366	$715

We have included these charges as a fixed charge to be collected in each year as indicated in the table above. In the ACCC 2014 Decision, the ACCC determined that MDBA/BRC charges be collected via fixed and variable components and that a separate UOM would apply to MDBA charges, where any over or under recovery would be passed on in full each year. As a result, we currently face an under-recovery of approximately $2 million[85], as shown in Figure 36 below and we anticipate an under-recovery of $3 million at the end of the current determination period.

Figure 36 Comparison of actual against allowed revenue MDBA & BRC pass through costs ($nominal)



* the MDBA/BRC pass through amounts were sourced from the ACCC 2016-17 Tariff Model for WaterNSW's 2016-17 Annual Review of Regulated Charges. These amounts were escalated by actual CPI in accordance with the ACCC model.

To recover the outstanding amount, we propose to smooth it over each of the four years of the forthcoming determination period. In this proposal we have used the current balance of approximately $2 million. We will update our proposal once the final amount of under-recovery is able to be determined.

[85] Also see Table B2 of ACCC Annual Review of regulated charges: 2016-17 Final Decision, which estimates under-recovery of $1.8 M attributed to MDBA and BRC pass through amounts. https://www.accc.gov.au/system/files/ACCC%20Final%20decision%20-%20WaterNSW%20-%20Annual%20Review%20of%20Regulated%20Charges%202016-17.pdf

To avoid excess bill shocks on HS customers, we have reduced the high security premium so that the average bill of a HS customer does not rise substantially from the current 40:60 charge structure to a fixed charge structure. The amended HS premiums are shown below.

Table 107 HS premiums for MDBA and BRC fixed charges

HS Premium		
Border	Murrumbidgee	Murray
1.48	1.39	1.44

The pass through fixed charges are shown in Table 108, Table 109 and Table 110 below, together with a price movement comparison from the current pass through charges set by the ACCC.

For example, the pass through charge for the Borders Valley is recovered through a fixed (100%) charge, instead of a 40:60 fixed to variable charge structure set by the ACCC in the current determination period. Therefore, the variable charge drops by 100% in 2018-17 compared to 2016-17. The GS Fixed charge increases by 95.3 per cent in the same period to recover the costs that would have otherwise been recovered under the variable usage charge.

Table 108 Border Valley BRC pass through charge $nominal

Border 100% Fixed Charge Structure - BRC pass through charge						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$4.22	$4.30	$4.55	$4.64	$4.76	1.8%
GS Fixed Charge	$1.49	$2.90	$3.07	$3.13	$3.21	95.3%
Variable Usage Charge	$4.03	-	-	-	-	-100.0%

Table 109 Murray Valley MDBA pass through charge $nominal

Murray 100% Fixed Tariff Structure - MDBA pass through charge						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$3.22	$9.14	$7.22	$7.12	$7.29	183.9%
GS Fixed Charge	$1.74	$6.33	$5.00	$4.93	$5.05	262.7%
Variable Usage Charge	$4.17	-	-	-	-	-100.0%

Table 110 Murrumbidgee Valley MDBA pass through charge $nominal

Murrumbidgee 100% Fixed Tariff Structure - MDBA pass through charge						
	16-17	17-18	18-19	19-20	20-21	16-17 to 17-18 %
HS Fixed Charge	$0.72	$1.66	$1.31	$1.29	$1.32	131.4%
GS Fixed Charge	$0.29	$1.19	$0.94	$0.93	$0.95	306.0%
Variable Usage Charge	$0.82	-	-	-	-	-100.0%

20.2 Yanco Creek levy

The Yanco Creek natural resources management levy was first approved by IPART in its 2006 review of bulk water charges and was approved again in the 2010 IPART price review and 2014 ACCC price review.

The levy is intended to fund the rehabilitation plan of the Yanco Columbo system to improve flows and provide significant water efficiencies for the system and the Murrumbidgee valley.

This levy is passed on directly to customers in the Yanco Creek system and is not included in the building block cost components of the revenue requirement.

In 2014 the ACCC approved the Yanco Creek levy on the basis that it was endorsed by Yanco Creek customers.

On 26 April 2016, WaterNSW wrote to the Yanco Creek and Tributaries Advisory Council Inc (YACTAC) to seek their confirmation that it wishes to continue to receive the current Yanco Creek natural resources management levy of $0.90 per megalitre of entitlement as part of this pricing proposal.

On 12 May 2016, WaterNSW received written advice from YACTAC stating that YACTAC supports the continuation of the current Yanco Creek natural resources management levy of $0.90 per megalitre of entitlement as part of this pricing proposal.

However, YACTAC noted that it may be more appropriate to collect the levy on water delivered as opposed to the current arrangement of per megalitre of entitlement held. YACTAC noted that many landholders have sold permanent water entitlements and chosen to buy temporary water to meet their annual watering requirements on an as needs basis, therefore avoiding paying the levy.

If the method of recovery of the levy was changed, we would need to upgrade our billing platform to accommodate the change. Further, we are not in a position to provide IPART with any indication of the level of support for the change by affected users. On that basis, we recommend that IPART:

- seek affected customer feedback on the proposed change. If IPART determines that support for the change exists, then
- acknowledge that WaterNSW will change the method of collection of the levy (from per entitlement to water delivered) if and when WaterNSW has changed its billing system to support the change.

Glossary

AASB	Australian Accounting Standards Board
ACCC	Australian Competition and Consumer Commission
ACCC Pricing Principles	Australian Competition and Consumer Commission's *Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010*
ACCC 2014 Decision	ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17
ALARP principle	'As Low As Reasonably Practicable' principle
AMS	Asset Management System
ANCOLD	Australian National Committee on Large Dams
AO&M	Asset operations and maintenance
ATS	Authority to spend
AWD	Available water determination
BRC	Dumaresq-Barwon Border Rivers Commission
Capex	Capital expenditure
CARMS	Computer aided river management system
CEO	Chief Executive Officer
CEWO	Commonwealth Environmental Water Office
COAG	Council of Australian Governments
CPI	Consumer price index
CSC	Customer Service Committee
CSO	Community service obligation
DPI Water	Department of Primary Industries Water
DSEP	Dam Safety Emergency Plan
ECM	Efficiency carryover mechanism
EMS	Environmental Management System
ESCV	Essential Services Commission of Victoria
EWON	Energy and Water Ombudsman of New South Wales
Fish River Scheme	Fish River Water Supply Scheme
GL	Gigalitres
GS	General security
HS	High security
ICD	Irrigation corporations and districts

IGA	Intergovernmental Agreement
IPART	Independent Pricing and Regulatory Tribunal
IPART Guidelines	Independent Pricing and Regulatory Tribunal Guidelines for Water Agency Pricing Submissions
ICT	Information communication technology
IRC	Investment Review Committee
KL	Kilolitre
KPI	Key performance indicator
MAQ	Minimum annual quantity
MDB	Murray-Darling Basin
MDBA	Murray-Darling Basin Authority
MEERA	Modern engineering equivalent replacement asset value
ML	Megalitre
MSC	Meter service charge
NABC	Needs analysis business case
NTER	National Tax Equivalent Regime
NWI	National Water Initiative
OABC	Options analysis business case
O&M	Operation and maintenance
Opex	Operating expenditure
RAB	Regulatory asset base
RTP	Risk transfer product
R&R	Renewal and replacement
SAP	Strategic action plan
SCA	Sydney Catchment Authority
SCADA	Supervisory control and data acquisitions
SCI	Statement of corporate intent
TMS	Telemetry metering system
UOM	Unders and overs mechanism
WACC	Weighted Average Cost of Capital
WAMC	Water Administration Ministerial Corporation
WHS	Work Health & Safety

WSAA	Water Services Association of Australia
WSP	Water Sharing Plan
WCIR	Water Charge (Infrastructure) Rules
YACTAC	Yanco Creek and Tributaries Advisory Council

Quality assurance

30 June 2016

WaterNSW 2016 Pricing Submission 2016
Quality Assurance Review Findings

Sapere Research Group ("**Sapere**" or "**we**") has undertaken quality assurance procedures over the 2016 Pricing Submission prepared by WaterNSW (**Pricing Submission**). This letter sets out the procedures we have undertaken and the findings of these procedures.

Scope Limitations
The scope of our engagement does not provide for an absolute opinion on the accuracy and completeness of information provided in the Pricing Submission.

We have not been requested, nor have we undertaken, an audit of the information in the Pricing Submission. Our findings are limited to the procedures we have undertaken.

Procedures
We have reviewed the Pricing Submission with regard to:

1. consistency with the output from financial modelling (Document name: Water NSW Model 2016.xlsm) undertaken by WaterNSW for the purpose of preparing the Pricing Submission;
2. consistency with the Information Return and reports against output measures, as relevant
3. calculations sum correctly;
4. nominal and real figures are applied consistently and explained in clear and simple terms;
5. all issues raised by the Independent Pricing and Regulatory Tribunal (IPART) are addressed; and
6. proposed prices are provided for all monopoly services of the water agency.

Only procedures stated in this letter have been undertaken in our quality assurance review.

For the avoidance of any doubt, we highlight the following examples of aspects of the Pricing Submission which are not included in the scope of this quality assurance review:

1. non-financial information;
2. reviewing the methodology applied by WaterNSW;
3. ensuring that all information that may be deemed relevant to WaterNSW stakeholders has been included;
4. checking the accuracy of all calculations in WaterNSW workings; and
5. ensuring the accuracy of source data relied upon by WaterNSW.

Findings
In conducting the review, we identified several matters which we believe WaterNSW has subsequently addressed. We form the conclusion we have no reason to believe that the WaterNSW's Pricing Submission does not comply in all material respects.

Independence
The quality assurance procedures have been undertaken by staff members of Sapere that have not been involved in the preparation of the Pricing Submission.

Our core values are independence, integrity and objectivity
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Chief Executive Officer's Declaration

In accordance with the Guidelines for Water Agency Pricing Submissions, December 2015 (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 30 June 2016 is the best available information of the financial and operational affairs of WaterNSW 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 Officer:

David Harris	30 June 2016
	Dated