WaterNSW Pricing Proposal to the Independent Pricing and Regulatory Tribunal

Regulated prices for NSW Rural Bulk Water Services 1 July 2021 to 30 June 2022

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Chief Executive Officer Foreword

I am pleased to submit WaterNSW's proposal to the Independent Pricing and Regulatory Tribunal of NSW ("**IPART**") for regulated prices for NSW rural bulk water services from 1 July 2021 to 30 June 2022. This is WaterNSW's second regulatory pricing proposal for NSW rural bulk water services since its formation on 1 January 2015.

This pricing proposal is aligned to our ongoing commitment to be recognised and valued by our customers for excellence in efficiently delivering their water needs to help make our communities healthy and prosperous.

At the time of preparing this proposal, and noting the much needed recent rainfalls in parts of NSW, drought conditions remain in many valleys and storage inflows remain low. We are assessing a number of drought supply options in close collaboration with the NSW Government to secure water supply for our rural customers should drought conditions continue. We are committed to ensuring a safe and secure water supply during one of the worst droughts on record.

We propose to cap our revenue requirement from the current determination in 'real' terms for a **one-year determination**, and only adjust prices to account for inflation, actual water usage and cost sharing decisions made by IPART. This results in a **5% price increase per annum** to water management charges.

While lower interest rates are putting downward pressure on prices, the overall costs of providing bulk water services have increased above the current regulatory allowances.

In recognition of the impacts that drought and the global pandemic have on our customers, we are proposing to not pass through these cost increases in 2021-22.

To provide customers with drought relief while also recognising the impacts of COVID-19, we are providing a streamlined regulatory pricing proposal that maintains the key elements of IPART's 2017 Determination to limit the areas of contention, and regulatory costs, commensurate with the shorter regulatory period. We anticipate seeking a four-year determination period from 1 July 2022 that reflects the long-term sustainable costs of supplying rural customers.

Our customer engagement suggests that customers are supportive of a one-year determination period as, in addition to drought relief and COVID-19, it would allow sufficient time for us to undertake consultation to ensure our customers have an active say in the development of our next pricing proposal. This will help us better understand our customers' expectations and shape our future price-service offerings.

This pricing proposal therefore replicates, where possible, the outcomes from the 2017 Determination, updated as required to meet our obligations under Commonwealth and State legislation.

This pricing proposal includes preliminary planning and other costs relating to our three major dam projects and other drought relief projects that we are undertaking at the request of the NSW Government. The associated costs are proposed to be recovered through Government charges, rather than customer prices for the 2021 Determination period.

We are committed to ensuring that our NSW bulk water services meet the needs of our customers and are committed to driving the further reform of our services and pricing arrangements to meet customer needs at the lowest cost.

Andrew George
Acting Chief Executive Officer

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Reference no.	Supporting document
Attachment 1	Cost Allocation Manual
Attachment 2	CEG Report *WACC, inflation and financeability for WaterNSW*
Attachment 3	Letter from NSW Government on MDBA and BRC cost pass through
Attachment 4	Annual Information Return (AIR) / Special Information Return (SIR)
Attachment 5	Populated IPART Building Block Model

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 one year from 1 July 2021 to 20 June 2022. WaterNSW's pricing proposal for the Murray Darling Basin ("**MDB**") valleys is a transitional application made under clause 24 of the Water Charge (Infrastructure) Rules 2010 ("**WCIR**") and the transitional provisions of Part 11 of the Water Charge Amendment Rules 2019 ("**WCIR Amendment**") that were given effect by the Water Charge Amendment Rules 2019. Our pricing proposal for the IPART valleys is made under Section 11 of the IPART Act 1992 (the "**IPART Act**").

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 approximately 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. We plan, investigate and develop water infrastructure solutions to water security and reliability issues and then plan, develop, operate and maintain that infrastructure.

This proposal is aligned to our ongoing commitment to be recognised and valued by our customers for excellence in efficiently delivering their water needs to help make our communities healthy and prosperous. We are committed to be 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.

Proposal overview

We are in a time of heightened uncertainty

Our rural customers are undergoing a period of significant uncertainty and challenge. While drought conditions have broken in Greater Sydney, the rural valleys of NSW are still experiencing harsh drought conditions. COVID-19 is also disrupting normal consumer and business behaviour, further contributing to the uncertainty faced in rural areas. We are proposing a one-year regulatory period to provide short-term pricing relief for our customers and to take the opportunity to undertake extensive customer engagement to better understand the practical impacts for our customers of these uncertainties and challenges and inform our next pricing proposal.

To further mitigate these issues, WaterNSW proposes to keep our current user share revenue requirement constant in real terms for the 2021 Determination period. We are only updating prices to reflect external factors outside our control – i.e. for volume changes due to the drought and changes to IPART's cost sharing arrangements. Capping our revenue requirement will reduce the impact of drought on customer prices. We also propose to maintain the approach from the 2017 IPART Determination to separately pass through the costs of Government charges for the Murray Darling Basin Authority ("**MDBA**") and the Dumaresq-Barwon Border Rivers Commission ("**BRC**") that are outside of our control and that are proposed to increase.

This proposal to keep the revenue requirement constant in real terms reflects that higher operating costs are only partially offset by lower interest rates due to a decline in the weighted average cost of capital ("**WACC**"). Our recent budgeting process has identified that higher operating and capital costs are required in the future to meet appropriate customer service standards.

A one-year determination period will permit WaterNSW to fully engage with customers to determine and assess the long term sustainable costs moving forward and customers' willingness and ability to pay for these levels of service, to fully inform our 2022 Determination.

WaterNSW intends on seeking full cost recovery of our long term sustainable costs at the subsequent 2022 Determination in order to meet our customers' expectations of appropriate service delivery.

This pricing proposal reflects WaterNSW's position as an organisation with considerable economies of scale and scope that enables us to provide a diverse range of regulated services to our customers across four separate regulatory pricing determinations. These economies enable us to provide regulated services to our rural customers at least cost while meeting minimum service obligations and acceptable financeability outcomes. The prices proposed, if maintained in the long-term, would not be sufficient to allow us to provide these services while maintaining an acceptable credit rating.

Of note, our customers continue to benefit from the economies of scale that have arisen as a result of a number of mergers in the last five years (including from our establishment in 2015) and organisational growth, including the construction of the Broken Hill Pipeline, the provision of licensing and water monitoring services on behalf of the Water Administration Ministerial Corporation and our recent activities in supporting the NSW and Commonwealth Governments in the planning of three new major dam projects.

Why we are proposing this

For many valleys, we are experiencing higher business operating costs and higher costs of complying with legislative obligations and maintaining customer service standards. However, our rural customers are facing considerable uncertainty and hardship due to drought. This has been intensified by the lasting impacts of recent bushfires and the COVID-19 global pandemic. An increase in water prices due to our higher costs in such times would have a detrimental effect on our customers and exacerbate hardship.

Rural NSW is experiencing record-levels of drought, with water supply in our dams at critical levels and, unlike the Greater Sydney region, for many valleys there is no expected respite in the form of predicted rainfall. Climatic conditions are markedly hotter and drier than long-term averages and in 2019, NSW suffered its lowest rainfall on record. Higher temperatures and the lack of rainfall have been exacerbated by a growing population and increased demand, putting considerable pressure on our water sources. Extreme climatic conditions are also evident in the increased frequency and severity of natural disasters, notably the recent bushfires.

This pattern is forecast to continue, adversely impacting regional communities in NSW across social, economic and environmental dimensions. At the same time, COVID-19 has added unprecedented levels of uncertainty to all parts of the economy. Without a vaccine in sight, there is uncertainty surrounding both how long current lockdown protocols will be in place in Australia and how agile the Australian and world economies will be in returning to business as usual once restrictions are lifted. Production has fallen and unemployment has risen sharply and is expected to remain high in the coming years. As people continue to work from home and live under lockdown measures, pressure on household bills is also likely to increase.

In the face of this unprecedented and uncertain environment, WaterNSW proposes to lock in our current period revenue to avoid placing a further burden on our rural customers.

The unprecedented combination of bushfires and a global pandemic have motivated our proposal for a one-year determination period. This will also give us time to undertake a consultation process with our customers about the impacts of the current events and to examine customers longer term views of the sustainable deliver of water in rural valleys. This customer engagement will empower us and our customers with the information and data necessary to actively respond to our customers' longer term service delivery needs while also better understanding their willingness and ability to pay.

A one-year determination period involves WaterNSW:

- Maintaining our revenue requirement in real terms and passing through uncontrollable costs, thereby avoiding larger price increases for our customers, who are already struggling with the impacts of drought and the uncertainty posed by the ongoing pandemic; and
- Continuing to undertake meaningful customer engagement so that we can continue to deliver services in a way that reflects customer preferences and the longer term sustainable cost of bulk water delivery.

While WaterNSW seeks a one-year determination period that attempts to 'mirror' a deferral by keeping our proposed revenue requirement constant in real terms, we are unfortunately not in a position to extend this deferral beyond one year. This is due to the significant financial pressures on our business resulting from the higher costs of providing bulk water to rural customers relative to the current regulatory allowances.

How we propose to implement this

Despite rising costs in the business, we are able to maintain our revenue requirement for one year noting that higher operating costs are only partially offset by lower revenue resulting from a lower WACC.

In effect, this means incorporating into our revenue requirement:

- Forecast capital and operating expenditures for 2021-22;
- A lower WACC compared with the current 2017 Determination period which, when combined with our actual and proposed capital expenditures, results in lower building block revenues for return of capital (i.e. depreciation) and return on capital; and
- WaterNSW absorbing an 'efficiency dividend' of $8.1 million (8%) that reduces our 'bottom-up' cost reflective revenue requirement to the level required to keep our proposed revenue requirement constant in real terms.

WaterNSW's pricing proposal identifies where future operating and capital cost increases are likely in order to assess the longer term sustainable costs of water delivery in rural valleys. WaterNSW intends on seeking full cost recovery of these long term sustainable costs at the 2022 Determination in order to meet our customers' service delivery expectations.

Operating costs

For many of our valleys, the costs of complying with our legislative obligations and maintaining customer service standards have increased. Some of the key drivers of higher operating costs compared to the regulatory allowances over the current period include:

- Higher insurance costs, primarily due to the costs of the Risk Transfer Product premiums, which provided important fiscal certainty during recent drought conditions;

- No allowance in the current period for land tax and energy cost increases;
- Increased labour costs arising from EBA outcomes in 2018 and the associated impact on employee entitlements that were not reflected in the current regulatory allowances;
- Increased FTEs to maintain operating licence obligations and customer service standards, including additional staff required for dam safety and system operations;
- No allowance was provided for planned overtime costs;
- Marginal increases in operating costs to support a significantly higher capital program;
- Changes in cost allocation across various parts of the business;
- An operating cost allowance in the current regulatory period which was $3 million below our actual cost structure in 2016-17;
- Water management reforms resulting from a number of independent investigations into water management and compliance practices in New South Wales (e.g. the Ken Matthews Review) and
- Higher overheads being allocated to Rural Valleys due to an increase in the total overhead pool.

These factors have resulted in an increase in operating expenditure relative to IPART's allowance from the 2017 Determination, with these costs expected to continue into the 2021 Determination period. While we are proposing to lock in the revenue requirement for 2021-22 to keep prices constant for factors within our control, we fully expect underlying costs and revenue requirements to increase for the subsequent (i.e. 2022) Determination.

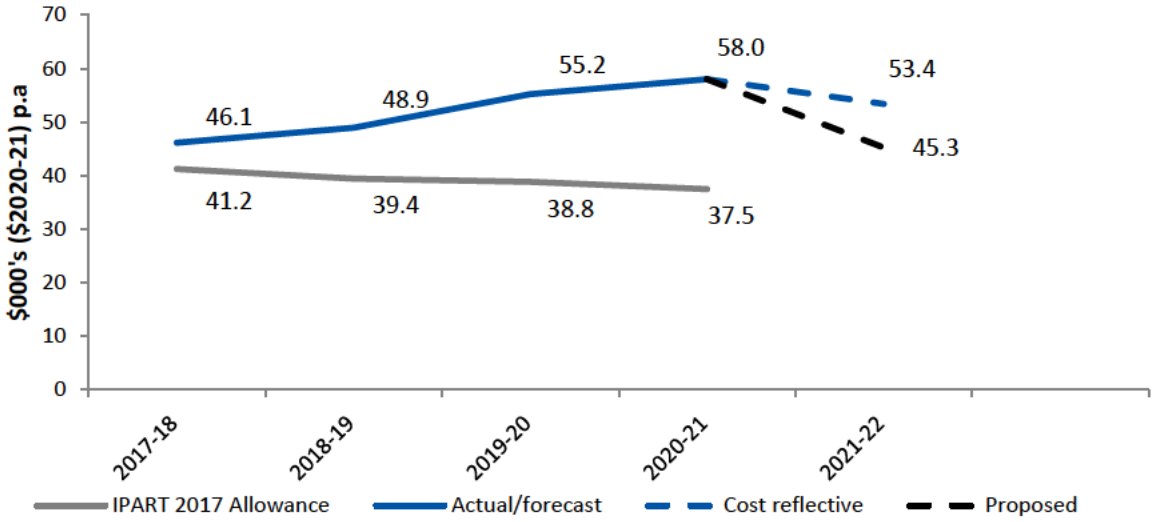
As illustrated in Figure 1 below, actual operating expenditure over the 2017 Determination period is expected to be $208.3 million, $51.4 million (33%) higher than IPART's allowance of $156.9 million ($2020-21) over the four years of the 2017 Determination.

WaterNSW's cost reflective operating expenditure of **$53.4 million** ($2020-21) for the 2021 Determination period is 3% below our forecast expenditure in 2019-20 and $1.3 million above our average expenditure over the four years of the 2017 Determination period.

Our forecasting utilises a bottom-up cost build-up for 2021-22 taking into account anticipated changes in obligations, service delivery, additional functions and operations. WaterNSW has established appropriate asset management and forecasting practices for our assets and services.

Our actual and proposed operating expenditures highlight that the costs of providing services to Rural Valley customers have increased and are not adequately reflected in the current regulatory allowances.

Figure 1 – Allowed, actual / forecast and proposed operating expenditure ($millions, $2020-21)*



*For illustrative purposes, proposed operating expenditure presented in this graph assumes that the entirety of the efficiency dividend shown in table 1 relates to operating expenditure

To achieve a revenue outcome that results in no real increase in revenue in 2021-22, WaterNSW proposes that **$8.1 million** is removed from the cost reflective total revenue requirement as an **'efficiency dividend'** and not included in customer prices, to help offset the hardship customers currently face. If this efficiency dividend is applied to operating expenditures, our proposal for 2021-22 is $45.3 million, or 15% below the cost reflective level.

WaterNSW is committed to supplying bulk water services and its operating licence obligations efficiently and at the lowest cost to customers. Operating efficiency gains will continue to be made through rigorous review of all expenditure to ensure operations and expected customer levels of service are being provided at least cost.

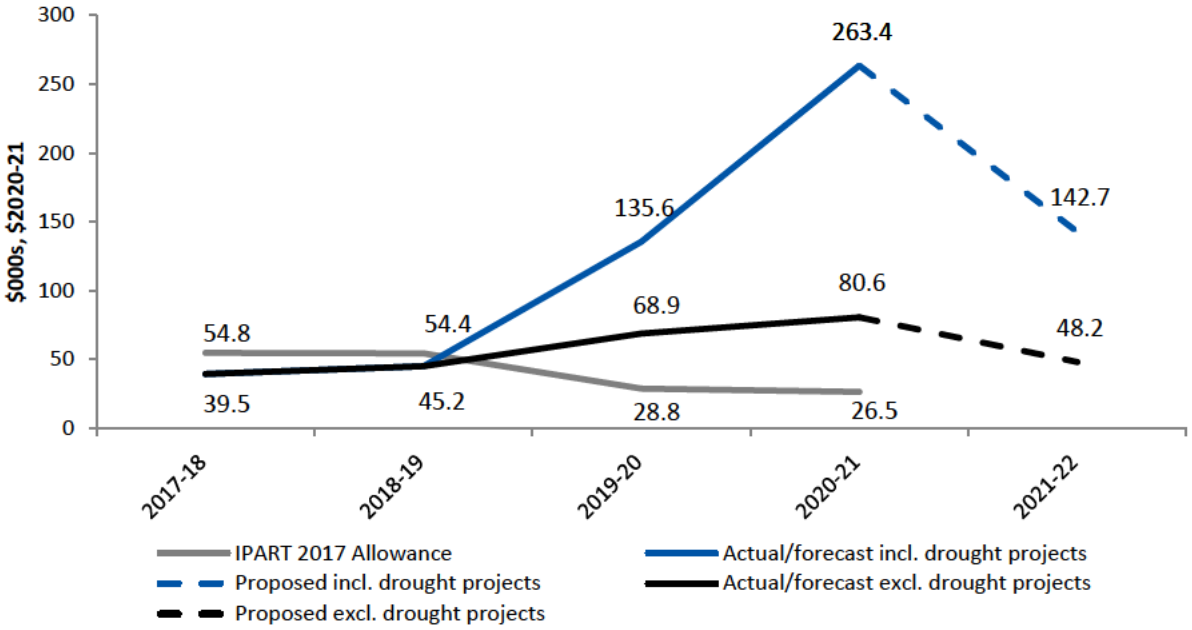
Capital expenditures

Our capital expenditure program over the current regulatory period has been characterised by:

- Ongoing business as usual capital expenditure to maintain and replace our existing assets; and
- Unforeseen capital expenditure on drought-related projects which was undertaken at the request of the NSW Government to respond to worsening drought conditions.

As illustrated in Figure 2 below and excluding the impact of drought projects, actual and forecast capital expenditure over the 2017 Determination period is $234.2 million, $69.7 million (42%) higher than IPART's allowance of $164.4 million ($2020-21) over the four years of the 2017 Determination. The main driver for this increase has been the reprioritisation of our renewals program.

Figure 2 – Capital expenditure allowed vs proposed ($millions, $2020-21)



WaterNSW has also undertaken extensive drought-related activities at the direction of the NSW Government. If the costs of these activities are included, our expenditure over the 2017 Determination period is $483.7 million, or an increase of $319.1 million (194%) compared with the IPART allowance of $164.4 million over the four years.

The regulatory allowances in 2019-20 and 2020-21 were based on a significant (almost 50%) reduction from the 2018-19 allowance, which has proven to be well below a long-term sustainable level to service assets valued at approximately $950 million across all valleys. This shortfall is exacerbated when investment in drought-related activities is considered.

Our proposed capital program for 2021-22 is **$142.7 million** ($2020-21), which includes the costs of a number of drought-related projects that WaterNSW is undertaking to ensure water supply for rural customers. We propose, however, to **exclude the costs of drought-related projects in our customer charges** for the 2021 Determination period. Our capital program for 2021-22 excluding the impact of drought-related expenditure is **$48.2 million** ($2020-21), which is proposed to be included in customers charges. The customer funded program is aimed at the renewal and replacement of assets that are used to collect, store and deliver raw water to customers in line with current service and expenditure levels. This will ensure asset reliability and capability are properly maintained.

The difference between our total proposed capital expenditures and the capital charges to be recovered from customers in 2021-22 is proposed to be recovered through the Government portion of IPART's cost sharing arrangements. We note that some user allocation of these costs may be appropriate over the four-year 2022 Determination and or beyond 2026 – this is a matter for the subsequent determination and is not considered further in this pricing proposal.

Lower WACC

The return on capital building block component, calculated using our regulated asset base (RAB) multiplied by the WACC, makes up approximately one-third of the revenue allowance that we need to provide bulk water services to Rural Valley customers.

The WACC has fallen significantly over the current regulatory period, with the placeholder WACC falling from 4.7% down to **3.2%** in the IPART valleys and from 3.1% down to **1.7%** in the

MDB valleys, reflecting lower interest rates in the financial market and the application of different methodologies between State and Commonwealth regulatory frameworks. While these lower WACCs (in particular the WACC for the MDB valleys) are a good outcome for customers in the short term as they put downward pressure on prices, they are not conducive to attracting capital to the sector for the longer term, particularly during uncertain economic times.

Revenue requirement

Our proposed total revenue requirement is based on IPART's building block methodology, and the user share revenue requirement applies IPART's costs shares to establish the proportion that customers pay through IPART's approved regulated charges. WaterNSW proposes to maintain the user share revenue requirement from the 2017 Determination for the 2021 Determination period, adjusted for inflation.

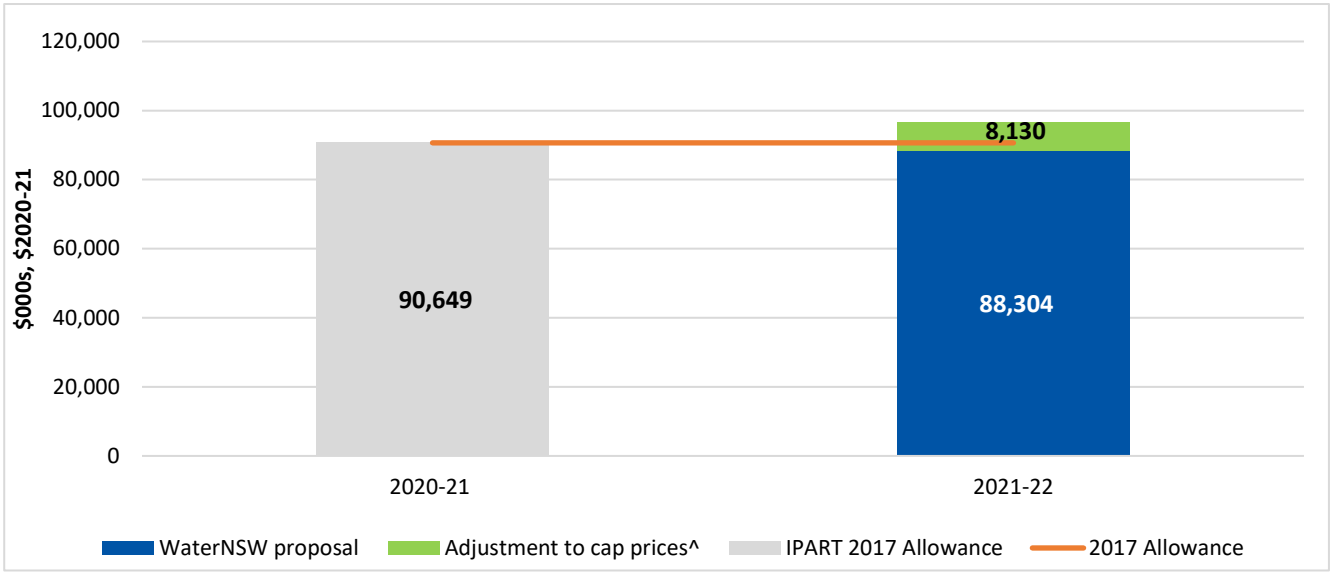
Other changes outside of WaterNSW's direct control are proposed to be passed through and separately charged to customers (i.e. IPART's 20-year rolling average of water usage and changes to IPART's cost share arrangements). We also propose to maintain the approach from the 2017 Determination of passing through Government charges for MDBA and BRC costs.

WaterNSW proposes keeping revenues constant in real terms for factors within our control (i.e. the revenue requirement) and adjusting prices only for factors outside of our control.

Figure 3 below provides our proposed total revenue requirement, excluding the impact of drought projects. The figure compares the revenue allowance for the last year of the 2017 Determination period (2020-21) (grey column) with our proposed cost reflective revenue requirement for the 2021 Determination period (2021-22) (blue column).

Our proposed revenue requirement reflects that the lower revenues associated with a falling WACC do not fully offset the effects of higher operating and capital costs.

Figure 3 - Total Revenue Requirement allowed vs proposed ($000s, $2020-21)



We have calculated a cost reflective total revenue requirement of **$96.4 million** for 2021-22 (the sum of the blue and green columns in Figure 3 above) that is $5.8 million, or 6% above the proposed smoothed revenue allowance of $90.6 million for the last year of the 2017 Determination period (the blue column in Figure 3 above).

As outlined above, to achieve a revenue outcome that results in no real increase in revenue in 2021-22, WaterNSW proposes that **$8.1 million** is removed from the cost reflective total revenue requirement as an '**efficiency dividend**' and not included in customer prices. This includes the $5.8 million in total revenue requirement outlined above plus $2.3 million that is required to maintain the total revenue requirement constant in real terms on a valley-by-valley basis.

Table 1 below presents WaterNSW's proposed total revenue requirement by building block component compared to the 2020-21 allowance, following the application of the efficiency dividend. These figures exclude the costs associated with drought projects and inflation.

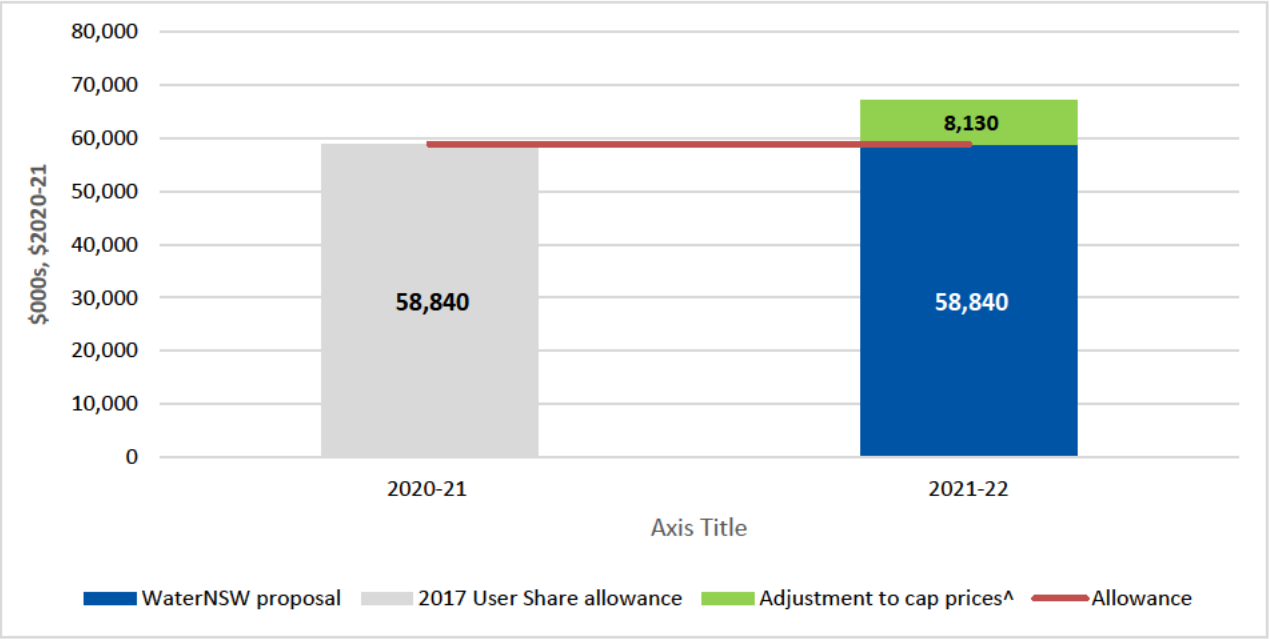
Table 1 – Proposed total revenue requirement 2020-21 ($000s, $2020-21)

Item	2020-21*	2021-22
Operating costs**	37,473	53,387
Return of capital (depreciation)	18,618	21,167
Return on capital	29,617	17,697
Working capital allowance	258	24
Tax allowance	1,146	502
Other allowances**	3,874	3,657
Total revenue requirement	**90,986**	**96,434**
Efficiency dividend	0	-8,130
Smoothed post-efficiency revenue requirement^	**90,649**	**88,304**
Revenue for ring-fenced drought projects	**0**	**8,541**

* 2020-21 is the last year of the 2017 Determination period.
**Operating costs include operating expenditure and volatility allowance. Other allowances include UOM allowance, ICD rebates, and debt raising costs. ^For 2020-21 this includes full cost recovery revenues for North Coast and South Coast, and unsmoothed Government share revenues

The user share revenue requirement – based on IPART's cost shares and representing the basis on which customer prices are set – is illustrated in Figure 4 below.

Figure 4 – User share revenue requirement ($'000s, $2020-21)



As illustrated above, the total cost reflective user share revenue requirement – that is, the revenue requirement based on a detailed build-up of our costs – is $67 million (the sum of the blue and green columns above). WaterNSW proposes a user share revenue requirement of **$58.8 million** per annum ($2020-21) for the 2021 determination period in order to maintain the user share revenue requirement in real terms. Everything else being equal, and excluding other changes due to volumes and IPART's cost shares, this would keep prices constant in real terms in 2021-22.

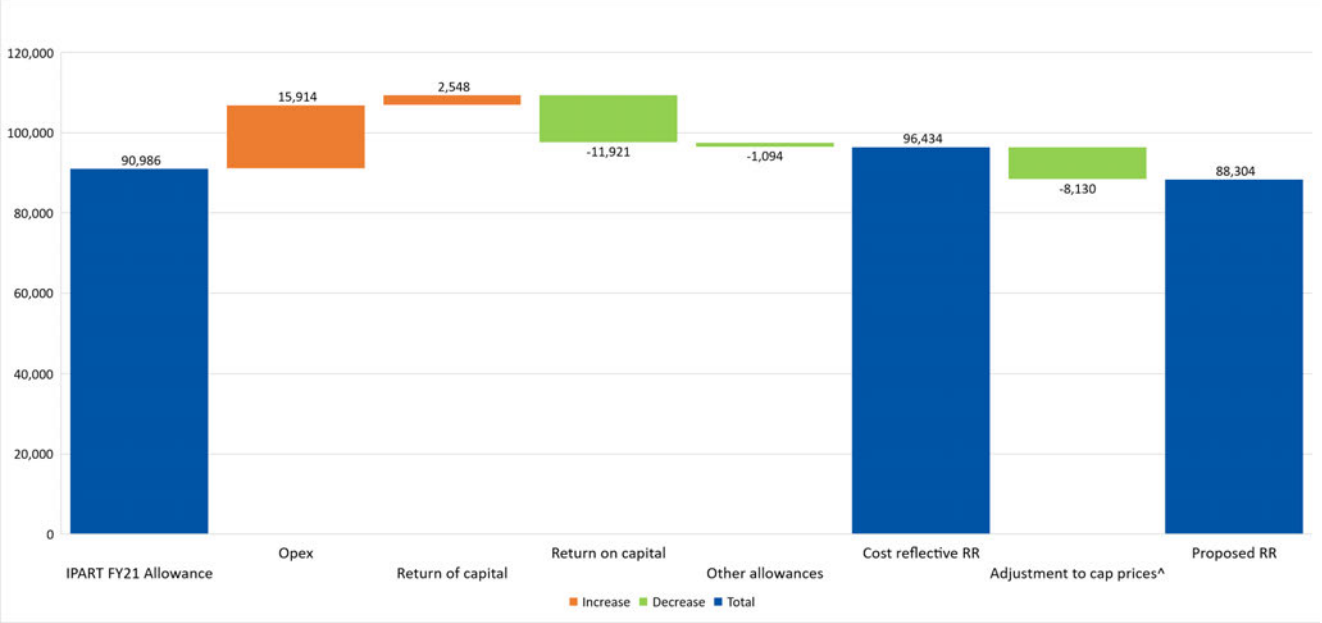
Our proposed user share revenue requirement has, by design, been calculated to equal the user share revenue requirement from the last year of the 2017 Determination period (in $2020-21) and gives effect to our intent of mirroring a 'deferral' of our current prices for Rural Valley customers when excluding factors outside of our control.

Drivers of revenue changes

This increase in the cost reflective revenue requirement is due to higher operating and capital costs to meet our legislative and customer service obligations in the majority of valleys. This is only partially offset by lower interest rates (and a lower rate of return on capital) from the financial markets.

In particular, the increase in revenue required due to higher operating costs of $15.9 million and an increased in the return of capital (i.e. depreciation) of $2.5 million due to higher capital expenditure is partially offset by the decrease related to a lower return on capital component (from the WACC) of $11.9 million, resulting in a net increase above the requirement of $5.4 million (difference between first blue column and the second blue column). Figure 5 below is a 'waterfall' chart identifying the changes in cost inputs driving our proposed total revenue requirement.

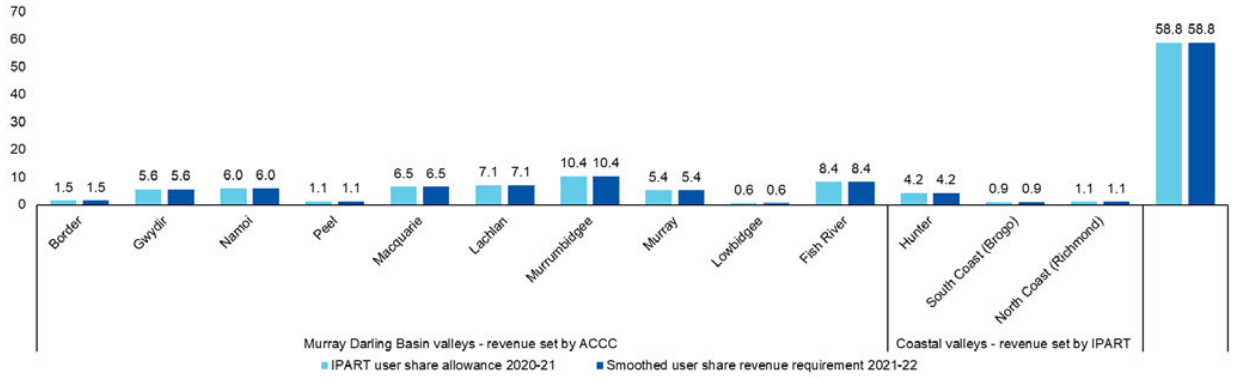
Figure 5 – Total revenue requirement variance by building block component ($2020-21)



*Note the $90,986 IPART FY21 allowance is unsmoothed revenue. It differs from the $90,649 IPART FY21 allowance presented in table 1 and figure 3 above which is smoothed revenue for all valleys except North and South Coast for which it is unsmoothed revenue.

Figure 6 below compares the smoothed user share allowance for 2020-21 (the last year of the 2017 Determination period) with the proposed smoothed user share revenue for the 2021 Determination period.

Figure 6 - Comparison of smoothed user revenue for 2020-21 (2017 Determination) and 2021-22 (proposed) ($millions, $2020-21)



As illustrated above, excluding the impact of inflation, the proposed smoothed user share revenue is unchanged ($2020-21) across the valleys. This contributes to prices held constant in real terms for the factors within where WaterNSW has some degree of control as reflected in our proposed revenue requirement.

The impact on prices of external costs outside of our control that we are proposing to pass through is discussed below.

Pass through of external costs

While we are aiming to minimise impacts on WaterNSW customer prices by maintaining the revenue requirement from 2020-21, there are some changes impacting our costs which are outside our control that we are seeking to pass through in bulk water services for the 2021 Determination period. These external factors are either related to IPART or NSW Government decisions.

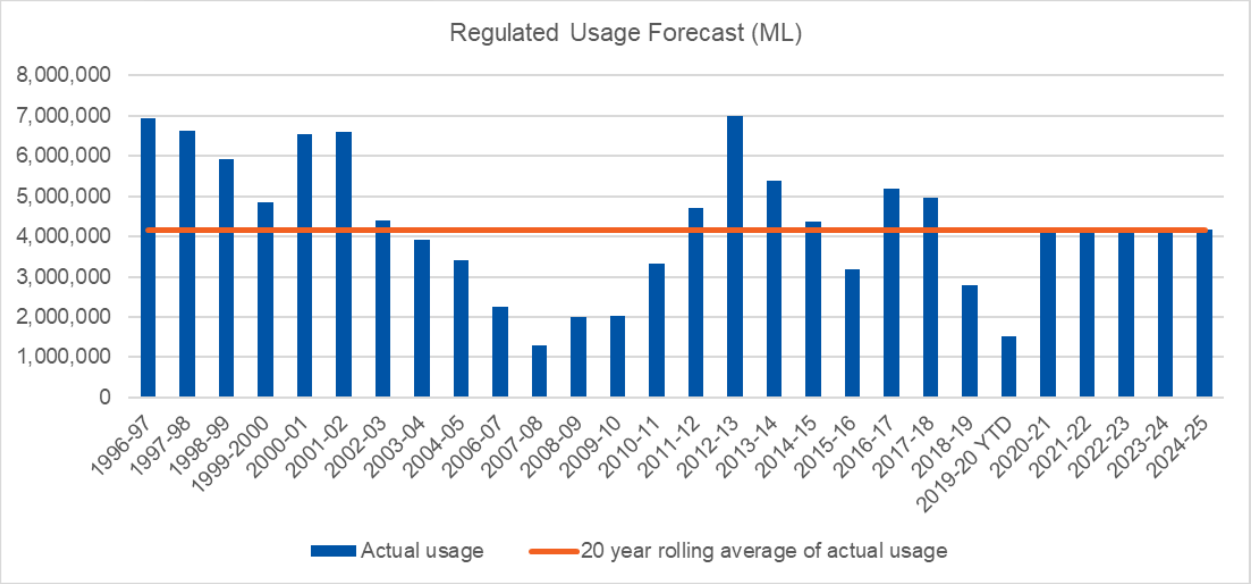
There are three external changes that WaterNSW is proposing to include in customer prices:

- Reduced volumes from the drought as reflected in the 20-year rolling average;
- IPART's updated cost share arrangement; and
- The pass through costs of intergovernmental agencies such as the MDBA and the BRC.

Updated 20-year rolling average of sales

The 20-year rolling average has been used for both the WaterNSW Rural Valleys and Water Administration Ministerial Corporation ("**WAMC**") Determinations. In this Rural Valley pricing proposal, the proportion of variable charges can be as high as 60%. The 20-year rolling average is shown below.

Figure 7 – 20-year rolling average of water sales



Drought has led to reduced volumes compared with regulatory allowances, with the 20-year rolling average for water usage **falling by 7.4%** since the 2017 Determination (4,165 GL vs 4,473 GL set by IPART)**,** with actual / forecast volumes being significantly below the average in 2018-19 and 2019-20 as illustrated in Figure 7 above. When constant revenues are applied to a lower volume base, this results in a higher price in order to recover our efficient costs. The impact of lower sales volumes varies valley-by-valley, but on average results in a **4% uplift in prices**.

WaterNSW considers it would be unreasonable if we are not able to recover our efficient costs as determined by IPART if the lower volumes from the 20-year rolling average methodology are not reset in the 2021 Determination. As IPART did not update prices to reflect the lower 20-year rolling average within the 2017 Determination period, we request IPART to now do so in the 2021 Determination to give WaterNSW the reasonable opportunity to recover efficient costs in an environment of falling water usage.

IPART's cost sharing arrangements

IPART has also changed its cost sharing arrangements to increase the share of costs incurred by customers. Since the IPART 2001 Bulk Water Price Determination, a framework has been in place for the allocation of costs between users (customers) and the Government. The underlying principle is to allocate costs in relation to the contribution that groups make towards different types of costs.

IPART conducted a review of the cost sharing ratios in 2019 and proposed that customers should pay a higher share of total costs. The impact of IPART's changes to its cost share assumptions in 2019 has resulted in a **1% increase** in the amount users are asked to pay via the user share revenue requirement. As this change is outside of WaterNSW's control, the impact on customer prices is being passed through to prices and separately identified.

Murray-Darling Basin Authority and Dumaresq-Barwon Border River Commission costs

In the 2017 Determination, IPART set separate prices for licence holders in the MDBA and BRC valleys to recover the costs of services delivered by the MDBA and BRC. These were levied as a two-part tariff, comprising entitlement and usage charges[1].

[1] See Table 1.3 and 1.4 from the IPART 2017 Rural Valleys Determination on page 11.

WaterNSW proposes to continue to pass through the costs of the MDBA and BRC and to maintain the structure of the MDBA and BRC charges from the 2017 Determination. We will update the proposed charges for the advice received from the NSW Government on the amounts to be collected.

As discussed in Section 3.6, in its advice to WaterNSW, the Department has advised that it has reallocated how it wants these charges to be recovered, leading to an increase in MDBA and BRC pass through charges.

Regulatory framework

IPART can approve a one-year determination period

A one-year determination is consistent with section 24 of the WCIR that allows a rural determination of less than four years to be approved by the regulator if it aligns with the determination period of a water supply determination of the same organisation (in this circumstance the Murray River to Broken Hill Pipeline) in order to reduce regulatory costs for the community.

Maintain key elements of the 2017 Determination

We are seeking to maintain as many elements from the 2017 Determination as practicable. This includes maintaining the Efficiency Carryover Mechanism ("**ECM**"), maintaining the fixed:variable tariff proportions by valley and the approach for managing revenue volatility as included in the 2017 Determination, updated to reflect the efficient costs of sourcing the risk transfer product.

Impact of inflation on financeability

WaterNSW is also proposing a solution to address the inflation forecasting risk that arises as a result of IPART's inflation estimates used for converting a nominal WACC to a real WACC, which results in artificially low prices and revenues insufficient to recover our efficient costs.

As underlying inflation is forecast to be between 1% to 1.5% per year over the next four years,[2] this asymmetric forecasting risk has placed significant pressure on our credit ratings and the financeability of our investment programs. WaterNSW has proposed a number of mechanisms to address the risk associated with IPART's forecasting of inflation, which we set out in Appendix 3.

Reforms in the water sector

The NSW Government is implementing a new metering framework for non-urban water take in NSW. The key objectives of the metering framework are that:

- The vast majority of licensed water take is accurately metered;
- Meters are accurate, tamper proof and auditable;
- Undue costs on smaller water users are minimised; and
- Metering requirements are practical and can be implemented effectively.

The major element of this framework is the introduction of a mandatory metering condition in licences requiring metering equipment that meets specified standards plus telemetry (or

[2] While there may be some upward adjustment of inflation in FY21 due to the unwinding of the social distancing restrictions associated with COVID-19 (including the impacts of the Government providing free childcare in the June 2020 quarter), most forecasters are predicting underlying inflation to be around 1%-1.5% over the next four years. This is discussed in Appendix 3 (Financeability) and Appendix 5 (COVID-19).

'telemetry ready' data loggers) to be installed, used and properly maintained on all water supply work approvals above a certain threshold.

Given the uncertainty around the policy and operational landscape and the associated costs of metering reform, WaterNSW has **excluded** the costs of non-urban metering reform from this pricing proposal. WaterNSW will provide cost forecasts to IPART during the review process as relevant, by end December 2020, for IPART's consideration and inclusion in the Final Determination.

Our proposed prices and bill impacts

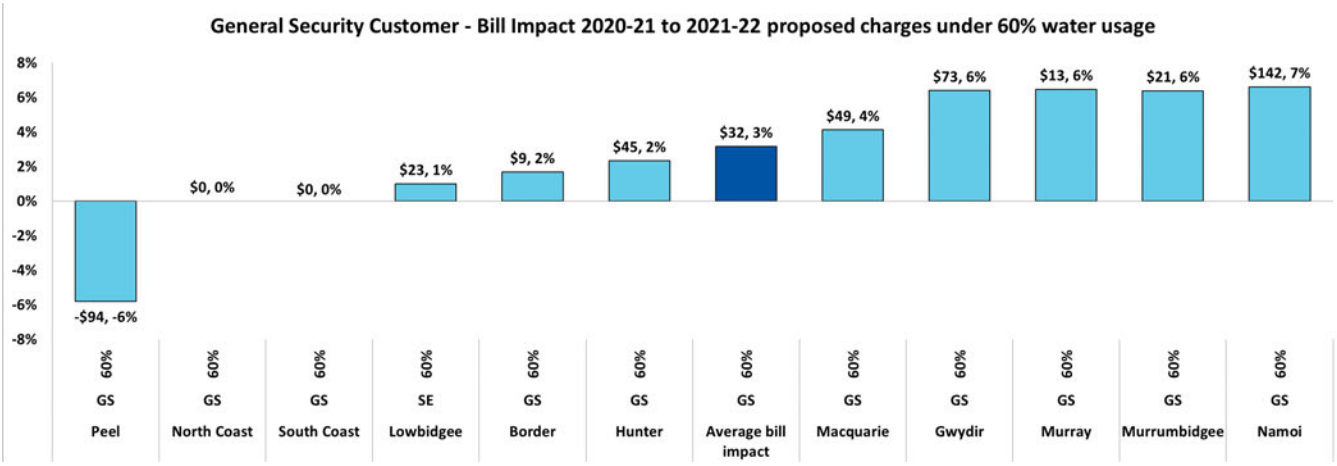
As a result of maintaining our revenue requirement in real terms and passing through costs outside of our control as identified above, we have calculated proposed prices and bill impacts by valley. These are provided in Section 12. In calculating our proposed prices and bill impacts, WaterNSW has maintained the existing proportion of fixed and variable charges as per the 2017 Determination. For most customers, this means 40% fixed charges and 60% variable charges.

The customer bill impacts of our pricing proposal[3] for general security ("**GS**") and high security ("**HS**") entitlement customers are set out in Figure 8 and Figure 9,[4] respectively, which reflects the application of the updated 20-year rolling average and IPART's updated cost share allocations. The charges exclude the impact of Government pass through charges.

There is no change in price or bill impact in real terms due to WaterNSW's proposed revenue requirement.

On average across all customers, our proposal results in an average bill increase from 2020-21 to 2021-22 of 5%. This is due to a 4% increase arising from changes in forecast volumes using the 20-year rolling average and an additional 1% due to IPART's updated cost shares. This translates to a 3% increase on average for GS entitlement customers and an 8% increase on average for HS entitlement customers. The valley-by-valley bill impacts for general and high security customers are presented below. The impact of the MDBA and BRC pass through charges has been excluded from the bill impact analysis presented below.

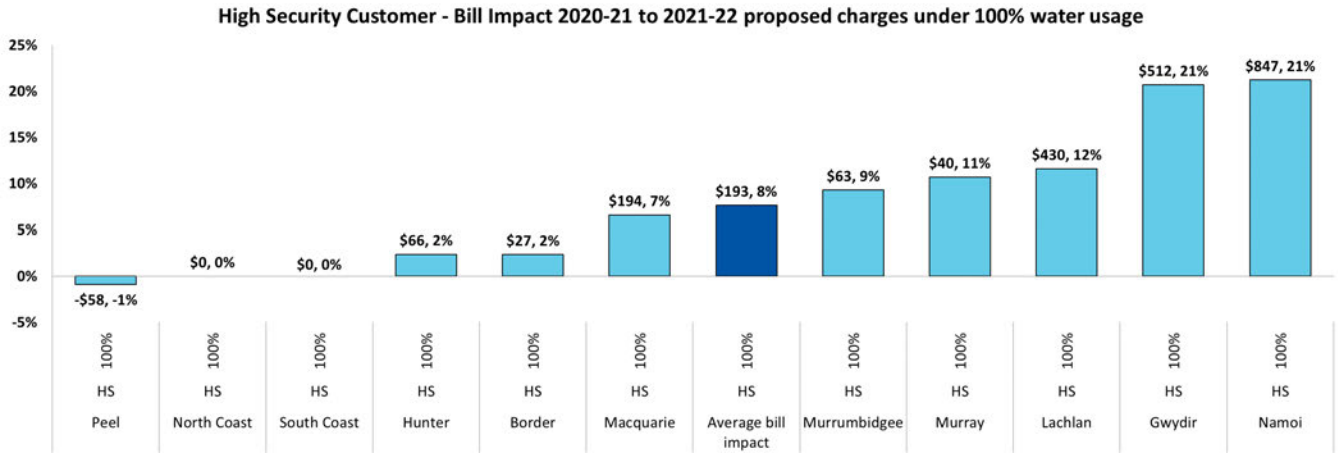
Figure 8 - Bill impact for general security entitlement customers ($ and % change from 2020-21)



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

[3] Excluding the impact of Government pass through charges.
[4] Average bill impact is calculated using a simple average. This excludes the impact of the meter service charge and excludes Lowbidgee. The charges in the North Coast and South Coast valleys are below cost recovery. For these valleys, we have proposed no price increases while we pursue long term strategies and solutions with our customers to alleviate the pricing pressures in these valleys.

Figure 9 - Bill impact for high security entitlement customers ($ and % change from 2020-21)



Impact of external factors

External events, including a lower interest rate environment due to financial market uncertainty, weather events including drought and the recent COVID-19 pandemic and associated economic and employment impacts have all impacted on our (and our customers') activities. The potential impacts of COVID-19 on our pricing proposal are discussed in Appendix 5.

A lower interest rate environment and COVID-19

Due to financial market movements, lower interest rates continue to place downward pressure on water prices. This is a good outcome for customer prices in the short term. However, the onset of COVID-19 has led to unprecedented measures implemented by Governments and significant financial impacts for many businesses and water customers due to higher unemployment rates and other economic impacts resulting from social distancing.

This has reinforced the need for proposed charges in rural valleys to be as low as possible.

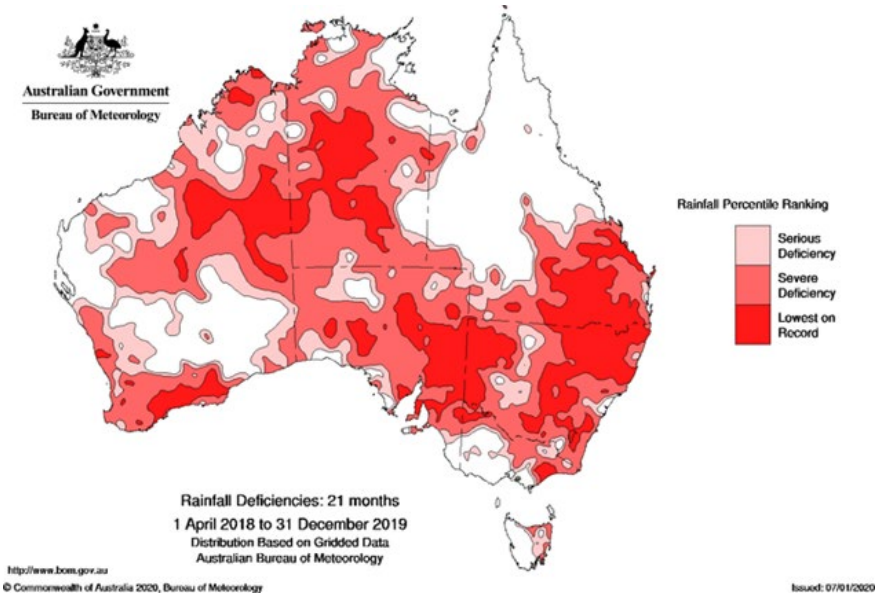
Drought

At the time of writing, parts of NSW are experiencing one of the worst droughts on record. Storage levels have been depleting over the past two years at rates not seen since the 1940s (World War II) and the Millennium droughts. Many rural areas are at critical levels of water supply, in large part due to the current climate, increasing population and higher than normal temperatures (leading to increased demand).

The period from January 2017 to December 2019 was the driest on record for any equivalent 36-month period, when averaged over the MDB and NSW. Average rainfall for the MDB was 918.0 mm over the 36 month period, which is more than 100 mm lower than the second-driest (1037.5 mm from January 1965 to December 1967), whilst NSW received around 170 mm less rainfall than the next driest period, the 36 months from January 1900 to December 1902 during the Federation Drought.[5] Figure 10 below illustrates that NSW has recently suffered its lowest rainfall on record.

[5] See http://www.bom.gov.au/climate/drought/

Figure 10 – NSW suffered its lowest rainfall in 2019



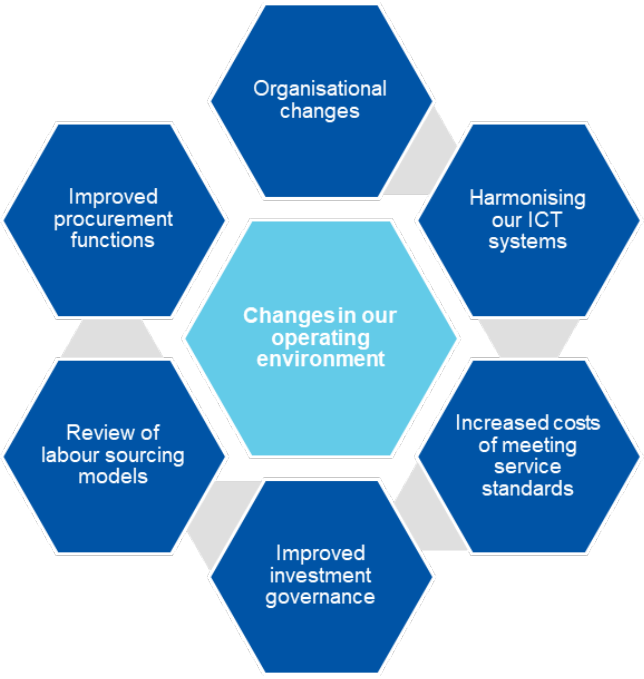
The prolonged drought has significantly impacted agricultural production and the surrounding regional communities across NSW. The NSW valleys are some of the worst affected regions in Australia, with water storage at critically low levels causing significant social, economic and environmental impacts. This hardship has been exacerbated by COVID-19.

WaterNSW continues to devote considerable resources to secure the State's water in the light of the ongoing effects of drought.

Current period outcomes

Over the 2017 Determination period, in addition to drought and a low interest rate environment, a number of events and internal initiatives have significantly impacted on the costs of providing Rural Valley Bulk Water services as illustrated in the figure below:

Figure 11 – Changes in our operating environment



- **Organisational changes**

  In early 2019, WaterNSW moved to a single Enterprise Agreement for our Award staff, leading to greater efficiency and consistency across our business.

- **Harmonising our Information and Communications Technology systems**

  WaterNSW is continuing to harmonise and update our Information and Communications Technology (ICT) systems to drive efficiency and provide improvements to customer interfaces

  Our Customer Information Management System (CIMS) (an ERP solution using Microsoft Dynamics D365 as the foundation) has been successfully launched, leading to a significant consolidation of our information and communications systems to replace the fragmented systems that supported processes within SCA, State Water and DPIE-W and the retirement of outdated legacy ICT systems.

- **Increased costs of meeting service standards**

  The costs of complying with our legislative obligations and maintaining customer service standards have increased in many valleys.

- **Improved investment governance**

  WaterNSW has reviewed and enhanced our investment governance, asset management and delivery strategies to ensure they are best practice and deliver targeted outcomes for customers at least cost. Our asset maintenance has improved over the 2017 Determination period and we are well placed to provide more targeted condition-based maintenance in the 2021 Determination period and beyond.

- **Review of labour sourcing models**

  We have undertaken a comprehensive review of our labour sourcing with a view to 'insource' strategic water management activities to leverage our expertise while looking to 'outsource' non-strategic activities that can be provided at lower cost by the market. This is resulting in improved stewardship of our assets, including more targeted maintenance based on condition assessments and improved delivery models, while continuing to ensure value for money for our customers.

  For example, our water monitoring review considered the most optimal insource and outsource mix, resourcing levels and structure realignment opportunities to ensure the efficient delivery of water monitoring activities across the WaterNSW customer base encompassing Greater Sydney, Rural Valley and WAMC. This resulted in a greater share of insourcing, but a cost reduction at the whole-of-activity level.

- **Improved procurement functions**

  Our approach to procurement has undergone a fundamental shift to ensure we achieve value for money when procuring goods and services from the market. These procurement savings lead to downward pressure on costs for our customers.

We have also worked closely with our customers and the community in providing support during the current drought. Our operations management has been stretched and we have responded by continuing to provide water security during one of the most severe droughts on record.

Customer engagement

WaterNSW is committed to meaningful engagement with its customers and stakeholders. In considering whether customers were supportive of the key elements of our Rural Valleys pricing proposal, we consulted with customers primarily through the Customer Advisory Groups ("**CAG**") process. The support from these groups for our proposal has been strong in recognition of the impacts of drought on the community. Our consultation on Rural Valleys

activities commenced as part of the February 2019 CAGs round presentations, totalling forty meetings (four meeting rounds with ten valleys per round).

We consulted with the CAGs on whether customers were supportive of a one-year determination period. The support from the CAGs for our proposal has been strong in recognition of the impacts of drought on the community.

Through our "Voice of Customer" research, customers have told us that they have an increased awareness of the activities WaterNSW provides for regulated river customers. Increased customer service is also perceived by Rural Valley regulated users.

Our preparations for this pricing proposal have 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 subsequent (i.e. 2022 Determination period).

Financial Risk and Financeability

WaterNSW's Rural Valley business is likely to experience significant financial stress in 2021-22 and beyond as:

- The placeholder WACC falls from 3.1% to 1.7% (45%) for the MDBA valleys;
- IPART's expected use of its approach to forecasting inflation (2.3%[6] using its current methodology) as opposed to the market's expectation of actual inflation (1.25% to 1.5% on average) further exacerbates the impact of a lower WACC. If the market's inflation expectations materialise, the effective WACC provided by IPART would be below 1%. This would not be sufficient to cover the efficient cost of debt or to attract capital to the sector by infrastructure investors; and
- We have assumed a volume forecast based on IPART's 20-year rolling average from the 2017 Determination. However, should this not arise and the drought continues, there is the potential for a significant shortfall in revenue in 2021-22 as has occurred in 2018-19 and 2019-20 (and expected for 2020-21). We are looking to extend our risk transfer product for one year to align to the 2021 Determination period to hedge against this risk and have included our forecast costs of the product in this proposal. However, it is likely that given the product has enabled WaterNSW to recover significant revenue shortfalls over the two previous financial years, which is expected to continue in 2020-21, it is entirely possible that the product may be prohibitively expensive moving forward.

As discussed in Section 16, even under the best case scenario, i.e. inflation in-line with IPART's forecast and our volume assumptions perfectly match the 20-year rolling average, the credit rating metrics are already constrained.
While Water NSW may be able to maintain its financeability requirements in the 2021 Determination period, there is no doubt that the need for revenue protection, should the continuation of the risk transfer produce be uneconomic, will be a key consideration in our next pricing proposal.

WaterNSW seeks revenue and pricing outcomes from the 2021 Determination that will enable our Rural Valleys operations to maintain appropriate financeability and a credit rating of Baa2 or above.

Our pricing proposal

Our pricing proposal comprises this main submission document including Appendices 1 to 6 and the attachments listed below as submitted by WaterNSW to IPART on 30 June 2020:

[6] See IPART's 2020 Greater Sydney bulk water determination. Page 163.

Reference no.	Supporting document
Attachment 1	Cost Allocation Manual
Attachment 2	CEG Report *WACC, inflation and financeability for WaterNSW*
Attachment 3	Letter from NSW Government on MDBA and BRC cost pass through
Attachment 4	Annual Information Return (AIR) / Special Information Return (SIR)
Attachment 5	Populated IPART Building Block Model

This pricing proposal sets out our forecast revenue requirements and prices for Bulk Water Services in the Rural Valleys from 1 July 2021 to 30 June 2022. All dollar values in this pricing proposal are expressed in real $2020-21 dollars unless otherwise stated.[7]

We urge IPART to review our pricing proposal in the light of providing a significant efficiency dividend to customers while also acknowledging that we have met our legislative obligation to prepare a pricing proposal based on efficient costs.

[7] Tables may not add due to rounding.

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 be 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. We will continue to be a fit-for-purpose organisation with the best structure, systems, people, processes and culture to meet our customers' needs and expectations.

1.2 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 12 below shows our area of operation.

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.

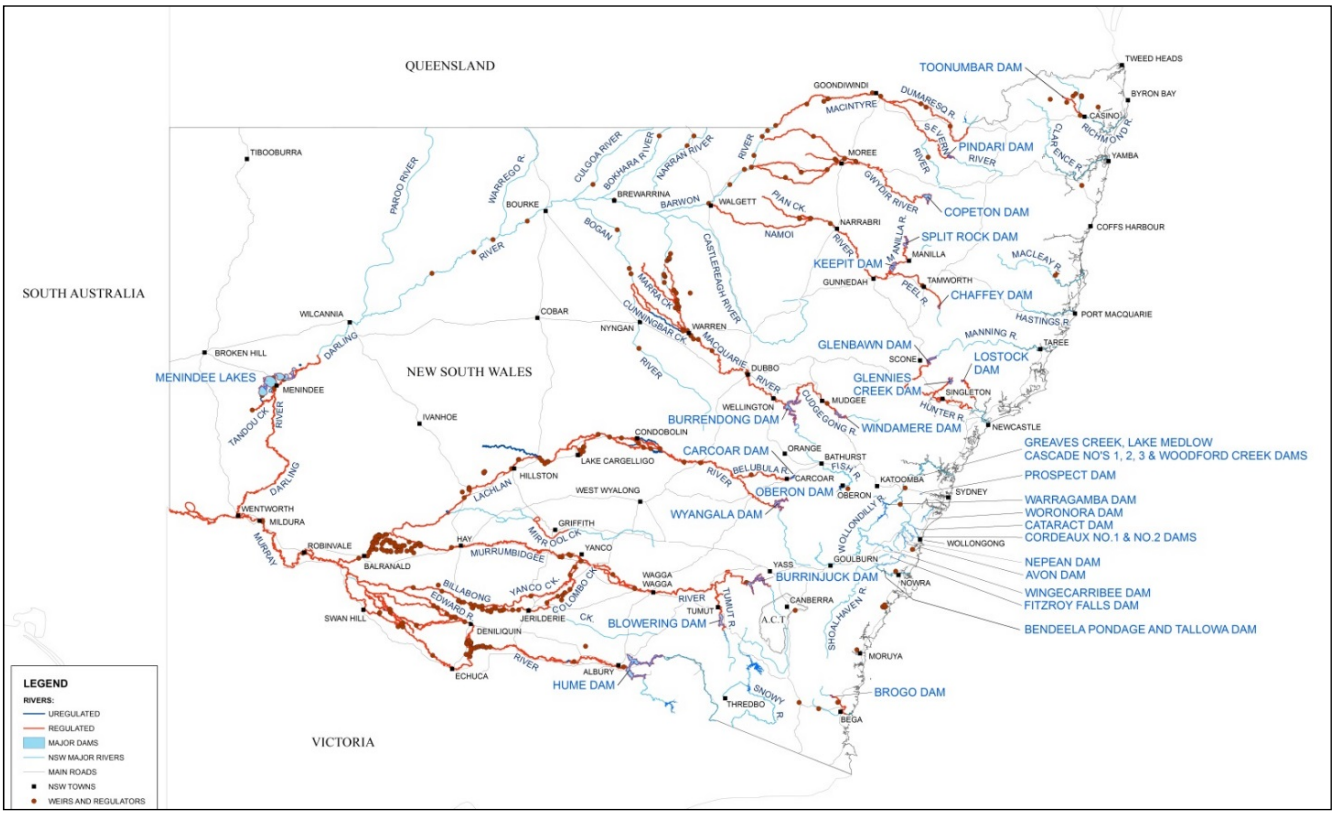
WaterNSW is also responsible for the Fish River Water Supply Scheme (Fish River Scheme) which previously was a Government Trading Enterprise that operated as a bulk water supplier on the Fish River until 2005. The Fish River Scheme[8] is a pipe and pump scheme (distribution network) which sources water 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 that includes 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.

[8] The Fish River Scheme is not subject to a WSP 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.

Figure 12 - Map of WaterNSW area of operations



1.3 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 and environmental water holders are increasingly becoming a major customer segment for WaterNSW; and
- 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.

The NSW Government plays a considerable role in funding (in whole or in part) the costs of providing bulk water services to our rural customers.

1.4 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:

Figure 13 – Our rural valleys

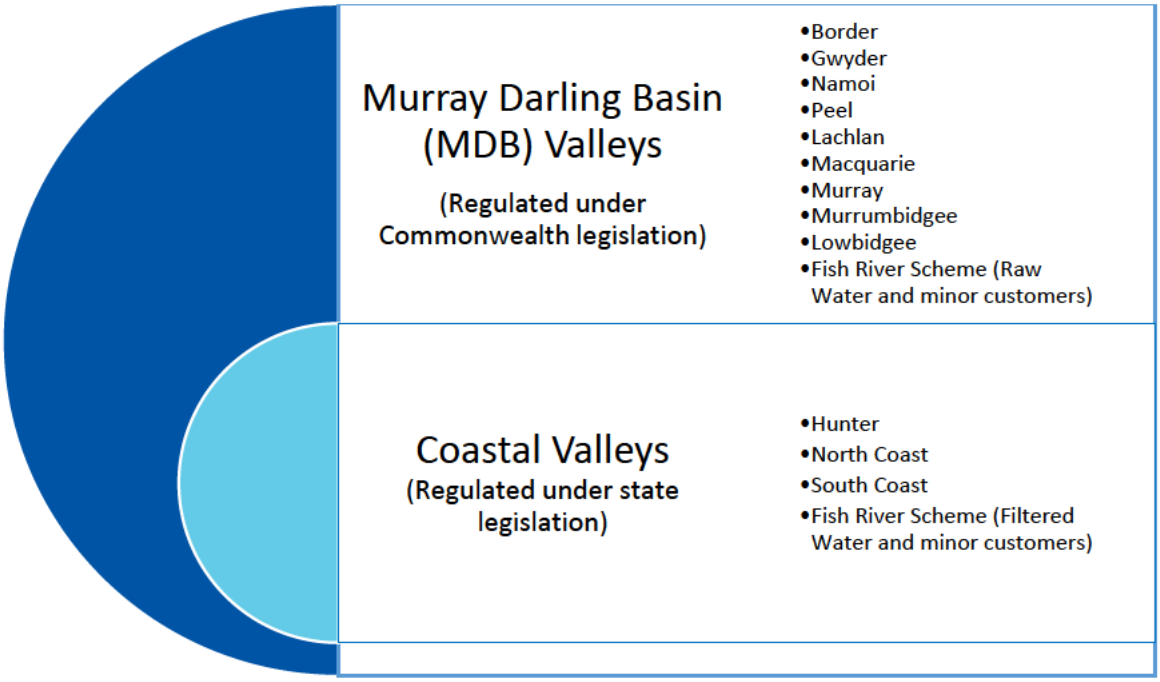


Figure 14 – Rural valley locations

1.5 Our legislative framework

WaterNSW is obliged to 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.

In the heavy regulated water management landscape in NSW our role is operator of the delivery system. Our main functions are:

- **Source water protection**: protection of the Greater Sydney drinking water catchment to ensure safe water is supplied to Sydney Water, local councils and other distributors for treatment and distribution to their customers.

- **Bulk water supply**: supplying water from our storages to customers in the Greater Sydney drinking water catchment and in the State's regulated surface water systems.

- **System operator**: efficient management of the State's surface and groundwater resources to maximise reliability for users through the operation of the State's river systems and bulk water supply systems, in collaboration with the MDBA which directs operations of the River Murray system.

- **Infrastructure planning**, **delivery and operation**: meeting customer-defined levels of service consistent with NSW Government policy and priorities to increase the security and reliability of water supplies to our customers and the communities of NSW.

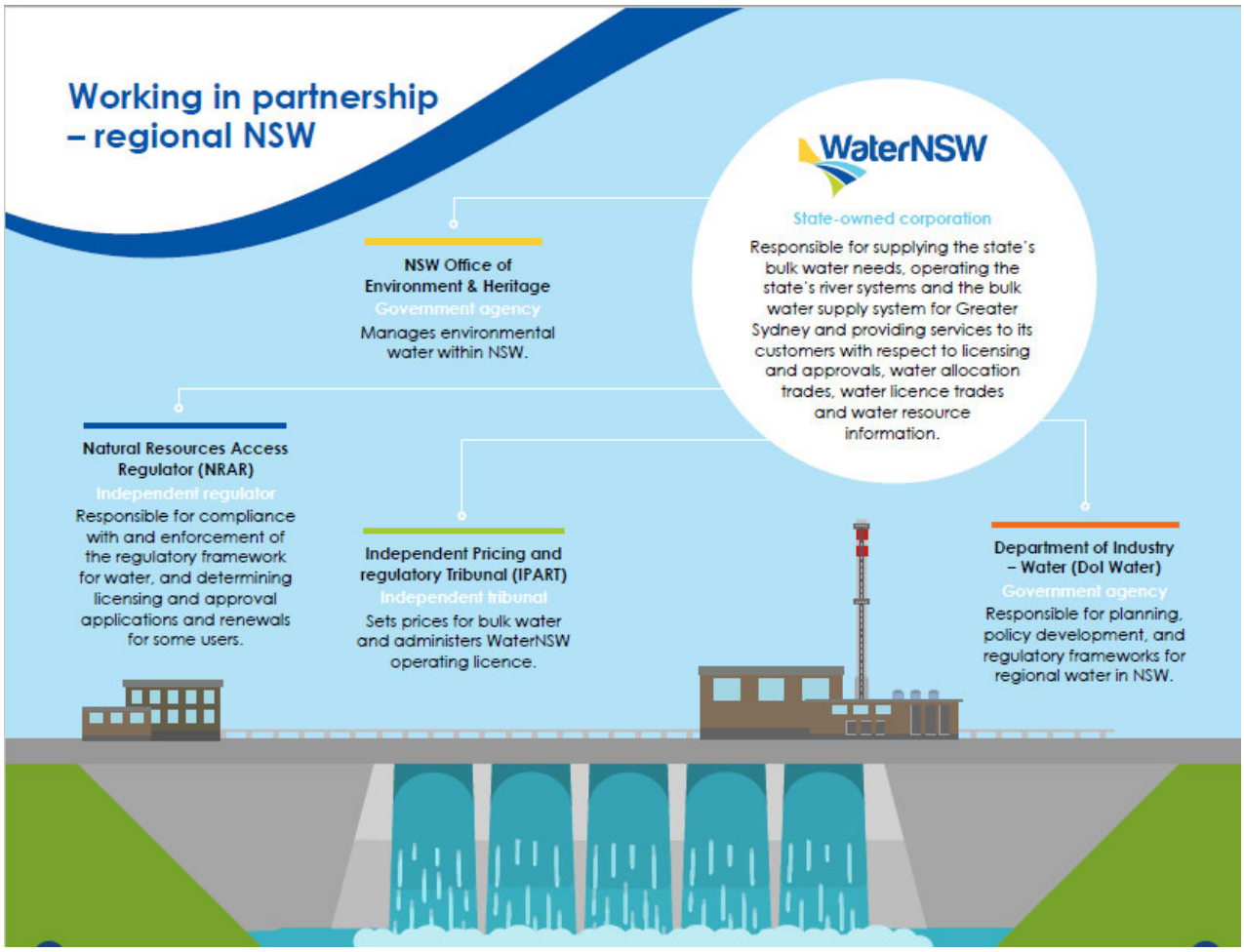
- **Customer water transaction and information services**: providing efficient and timely services to our customers for water licensing and approvals, water trades, billing and meet their water resource information needs for surface and groundwater quantity and quality.

Other participants in the water management landscape in NSW include:

- The rule maker – NSW Department of Planning, Industry and the Environment - Water (DPIE-W);
- The compliance office – Natural resources Access Regulator (NRAR);
- The environmental water agencies – Commonwealth Environmental Water Holder (CEWH) and the NSW Office of the Environment and Heritage (OEH); and
- The price setter - IPART.

Figure 15 sets out the relationship between the main NSW Government entities involved in regional water supply.

Figure 15 - NSW Government entitles working in partnership in regional NSW



A detailed discussion of our legislative framework is provided in Appendix 1.

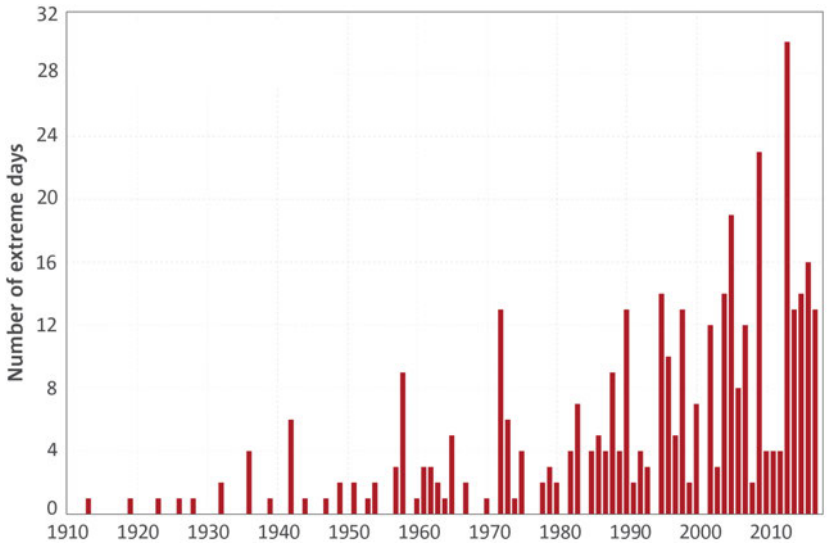
1.6 Impact of drought

1.6.1 Climate change and drought indicators

According to the CSIRO's and the Australian Bureau of Meteorology's (BOM) *State of the Climate 2018*, Australia's weather and climate continues to change in response to a warming global climate. Australia has warmed by just over 1° Celsius since 1910, with most warming since 1950. As illustrated in Figure 16, this warming has seen an increase in the frequency of extreme heat events and increased the severity of drought conditions during periods of below-average rainfall. [9] Eight of Australia's top ten warmest years on record have occurred since 2005.

[9] See CSIRO / BOM *State of the Climate 2018*, page 4. Extreme days are those above the 99th percentile of each month from the years 1910–2017. These extreme daily events typically occur over a large area, with generally more than 40 per cent of Australia experiencing temperatures in the warmest 10 per cent for that month. The very high monthly maximum temperatures that occurred around 2 per cent of the time in the past (1951–1980) now occur around 12 per cent of the time (2003–2017). Very warm monthly minimum, or night-time, temperatures that occurred around 2 per cent of the time in the past (1951–1980) now also occur around 12 per cent of the time (2003–2017). The number of days each year where the Australian area-averaged daily mean temperature is extreme.

Figure 16 – Frequency of extreme heat events has increased



Source: BOM and CSIRO State of the Climate 2018

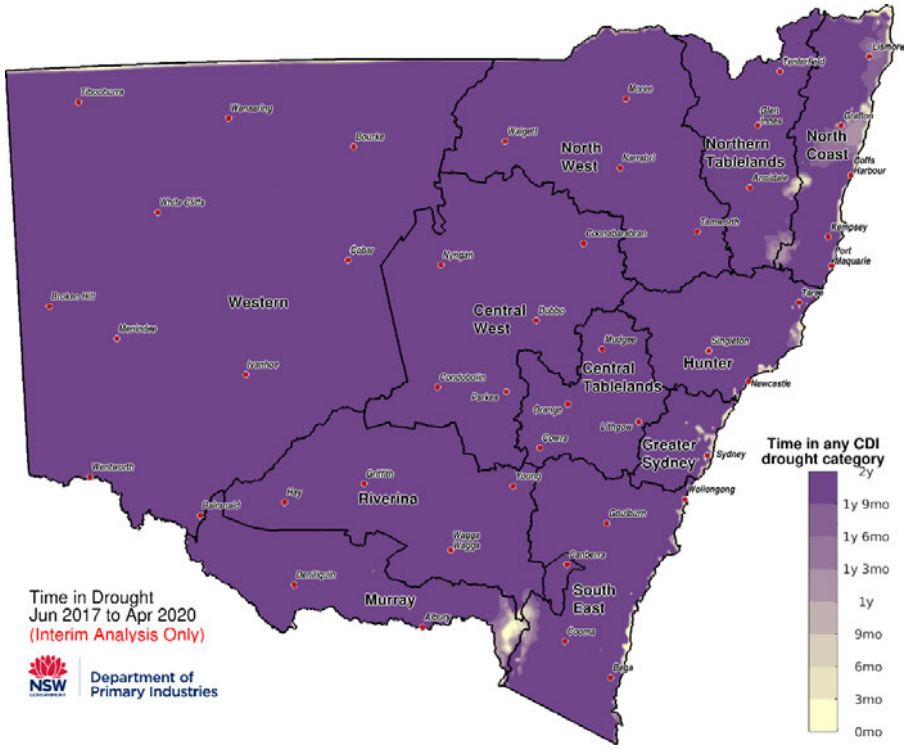
NSW is currently experiencing one of the worst droughts on record. Storage levels have been depleting over the past two years at rates not seen since the 1940s and the Millennium droughts. Many rural areas are at critical levels of water supply, in large part due to the climatic conditions, increasing population and higher than normal temperatures (leading to increased demand).

While some rainfall has occurred in early 2020, recent climate forecasts[10] by the BOM indicate that many valleys in NSW remain drought affected, with the road to recovery expected to be slow. There may be no lasting reprieve to current drought conditions in some valleys, including those in the far west and south east of NSW, which remain drier than average despite April rainfall.

The figure below demonstrates the long-term drought conditions currently being experienced in NSW. Nearly every area of NSW has been in drought for over two years. At the end of April 2020, 91.4% of the state remained in one of the three Combined Drought Indicator (CDI) categories used by the NSW Government.[11]

[10] NSW Government, DPI Seasonal Outlook, 2020, https://www.dpi.nsw.gov.au/climate-and-emergencies/seasonal-conditions/ssu/nsw-state-seasonal-update-april-2020.
[11] NSW Government, DPI Seasonal Outlook, 2020, https://www.dpi.nsw.gov.au/climate-and-emergencies/seasonal-conditions/ssu/nsw-state-seasonal-update-april-2020.

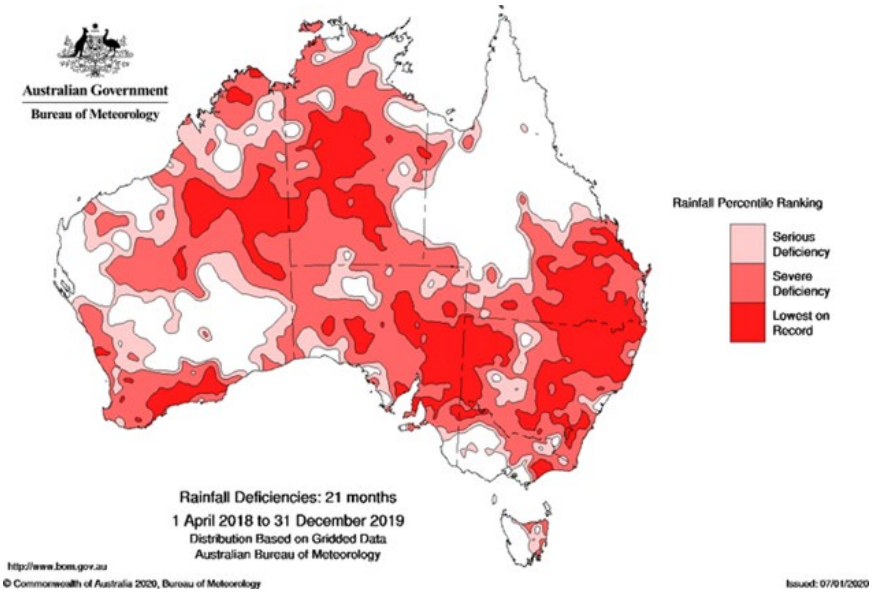
Figure 17 – Drought duration from June 2017 to April 2020, for all CDI categories



Source: NSW Government, DPI Seasonal Outlook

Climatic conditions have also been hotter and drier than long-term averages. The three years from January 2017 to December 2019 were the driest on record for any 36-month period starting in January, when averaged over the MDB and New South Wales. Average rainfall for the MDB was 918.0 mm over the 36 month period, which is more than 100 mm lower than the second-driest period (1037.5 mm from January 1965 to December 1967). New South Wales received around 170 mm less rainfall than the next driest period, which was the 36 months from January 1900 to December 1902 during the Federation Drought.[12] The figure below illustrates that NSW has recently suffered its lowest rainfall on record.

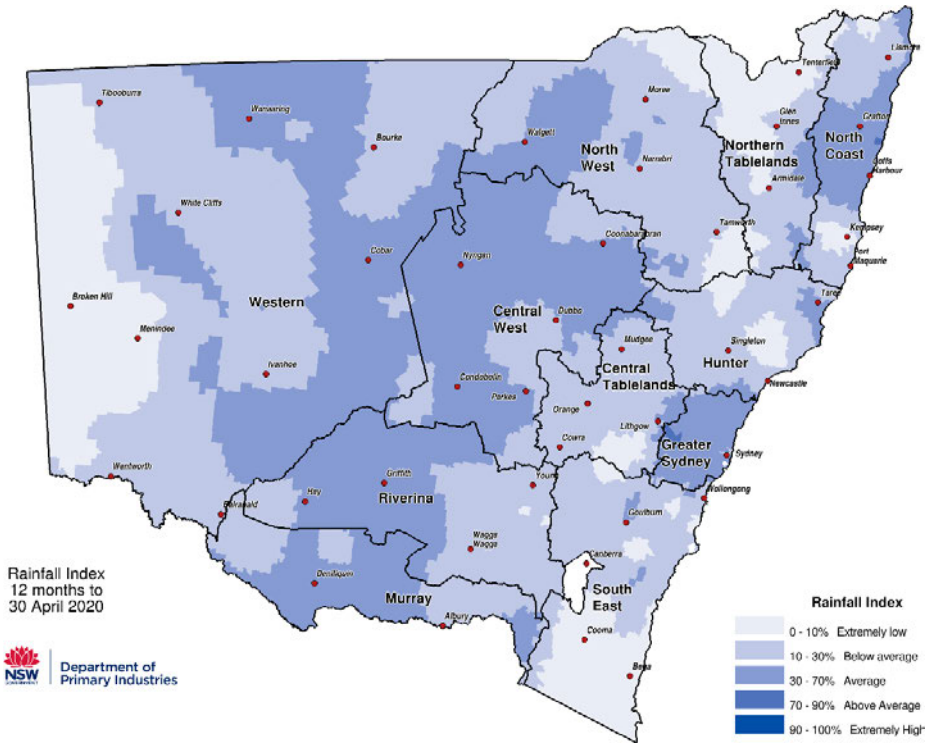
Figure 18 – NSW suffered its lowest rainfall in 2019



[12] See http://www.bom.gov.au/climate/drought/

While rainfall accumulation has begun to improve across NSW, inflows have been below historic levels over the last year. The following figure presents rainfall accumulation over the past year.

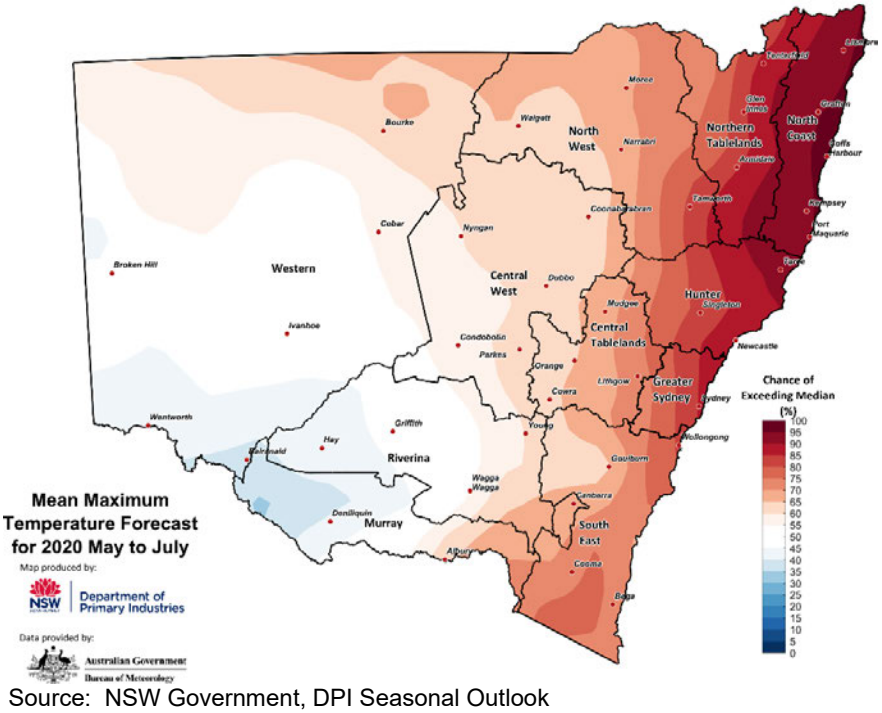
Figure 19 – Rainfall accumulation index for the 12 months to 30 April 2020



Source: NSW Government, DPI Seasonal Outlook

Figure 20 demonstrates that there is a strong likelihood that a significant portion of NSW will experience daytime temperatures above the median over May to July 2020. The Hunter region and coastal valleys in particular are expected to experience higher than average temperatures.

Figure 20 – Mean Maximum Temperature Forecast for May to July 2020



Source: NSW Government, DPI Seasonal Outlook

The combination of low rainfall, low inflows and high median temperatures, is expected to continue in many areas of the state.

While drought and bushfires are traditional climate hazards in NSW, a large number of extreme heat events have contributed to the severity of the recent bushfire crisis, with drought compounding the severity of the bushfires. This has compounded the social, economic and environmental challenges being faced by NSW water customers.

1.6.2 Addressing the impacts of drought on NSW communities

The prolonged drought has significantly impacted agricultural production and the surrounding regional communities across NSW. The NSW valleys are some of the worst affected regions in Australia, with water storage at critically low levels, causing significant social, economic and environmental impacts.

Management of NSW's water resources relies on a range of legislation, initiatives and cooperative arrangements with the Commonwealth and other state governments. In addition to the NSW Government committing $3 billion toward drought support and water security since 2017, formal agreements between NSW and the Commonwealth are critical in delivering long term, large-scale infrastructure projects.

Drought-related joint funding initiatives between the NSW and Commonwealth Governments includes the $1.1 billion water infrastructure package for rural and regional communities.[13] This funding covers the $650 million upgrade of Wyangala Dam (Central West), the construction of the new $480 million Dungowan Dam near Tamworth and an initial $24 million for the preliminary planning costs for the Border Rivers project on the Mole River near the Queensland border.

While these joint initiatives enable NSW to address the immediate impacts of climate events, such as critical town water projects across the state, it is imperative that WaterNSW continues to focus on securing the State's water in light of the ongoing effects of drought. We will continue to work with customers and the NSW Government to address the State's water needs and to minimise the impact of drought on customers by providing least cost solutions and to offer support where needed. Our proposal for a one-year regulatory period, keeping the user share revenue requirement constant in real terms, is designed to further assist our customers to manage the current challenges.

[13] A 50:50 sharing arrangement announced in October 2019.

2. Our pricing proposal

2.1 Application of our pricing proposal

2.1.1 State Owned Corporation Act 1989

This pricing proposal for maximum prices from 1 July 2021 to 30 June 2022 covers bulk water services to our customers in:

- The nine valleys in the MDB (referred to as the "**MDB valleys**");
- The three coastal valleys (Hunter, North Coast and South Coast) (referred to as the "**coastal valleys"** or the "**IPART valleys**"); 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*; and
- 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(the "**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 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).[14]

In June 2017, IPART issued its determination for rural valley Bulk Water Services from 1 July 2017 to 20 June 2021.

In February 2020 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 WCIR and the ACCC Pricing Principles as appropriate.[15,16]

[14] 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).

[15] 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 IPART SUP letter.

[16] In some cases, we have deviated from IPART's pricing submission checklist, for example:

* this submission outlines 1 year 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.

Pricing for MDB valleys

WaterNSW's pricing proposal for the MDB valleys is a transitional application made under clause 24 of the Water Charge (Infrastructure) Rules 2010 and the transitional provisions of Part 11 of the Water Charge Amendment Rules 2019

WaterNSW is lodging a transitional application under the WCIR. A transitional application is one that is lodged prior to 1 July 2020 under clause 24 of the WCIR and Part 11 of the *Water Charge Amendment Rules 2019* for the next regulatory period.

In September 2016, the ACCC provided advice to the then Minister for Agriculture and Water Resources on amendments to the Water Charge (Infrastructure) Rules 2010. The ACCC's advice included proposed amendments to the water charge rules to simplify the regulatory arrangements. Based on this advice, the Minister for Agriculture and Water Resources amended the WCIR under the *Water Charge Amendment Rules 2019.*

The amendments are intended to simplify the regulatory framework by handing back to the Basin States the regulation of water infrastructure charges levied by on-river infrastructure operators such as WaterNSW provided the relevant state law meets the regulatory test in paragraph 29(2)(b) regarding cost reflective charging consistent with (not exceeding) the recovery of prudent and efficient costs.

The changes will commence on 1 July 2020.

As part of the amendments, transitional arrangements were enacted under Part 11 of the Water Charge Amendment Rules 2019 allowing IPART to continue to regulate Part 6 infrastructure operators such as WaterNSW under the WCIR accreditation arrangements until the end of a transition period provided:

1) The regulated entity lodges a transitional application under the WCIR prior to 1 July 2020 pursuant to clause 24 of the WCIR; and
2) IPART remains accredited under the WCIR for the relevant transitional period.

The transitional arrangements enable IPART to continue to regulate WaterNSW during the transition period and apply the existing pricing rules in the interest of regulatory certainty. At the end of the transition period, IPART may set the infrastructure charges for WaterNSW's MDB valleys in accordance with the IPART Act provided the NSW law meets the requirements of the new water charge rules as described above (otherwise the ACCC will be the regulator).

Regulatory period under clause 24 of the WCIR

This pricing proposal is an application with IPART under clause 24 of the WCIR in which WaterNSW proposes a one-year regulatory period for MDB valleys (from 1 July 2021 to 30 June 2022). Clause 24 of the WCIR states:

(1) A Part 6 operator that is also a supplier of urban water services the charges for which are determined by an agency of a State, under a law of the State, in respect of a period other than a period referred to in paragraph (a) or (b) of the definition of regulatory period, may make an application in writing to the Regulator for that other period, or a part of that other period, to be a regulatory period in relation to that operator for the purposes of an application under Rule 25.

(2) The Regulator, having regard to the circumstances, may approve the application.

WaterNSW considers that it can apply under clause 24 of the WCIR for the following reasons:

- WaterNSW operates the water transportation services provided by the Murray River to Broken Hill Pipeline (BHP). In 2019, IPART set the maximum prices WaterNSW can charge for the water transportation services provided by the BHP from 1 July 2019 to 30 June 2022 under the IPART Act;
- The BHP is an urban water service because it is a water service supplying an urban centre beyond the point at which the water has been removed from a Basin water resource (the Murray river). Section 91(3) of the Water Act therefore excludes the BHP from regulation under the WCIR; and
- The administrative efficiency of having the charges for BHP and the MDB valleys determined at the same time (for example, they are in similar areas, which has the potential to reduce the consultation costs for WaterNSW and its customers) as well as the desire to minimise consultation in the short term for customers suffering from drought.

We consider that the use of clause 24 of the WCIR to align the regulatory period of the MDB valleys and the BHP is consistent with the intention of clause 24 of the WCIR. The Explanatory Statement for the WCIR comments (at 15):

> *The purpose of this rule is to allow operators subject to approvals or determinations in respect of their charges for urban water services to apply to have the timing of the approval or determination of charges under the Rules aligned with the urban water pricing process. Aligning the timing of these processes seeks to minimise costs arising from having separate approval or determination processes for an operator's rural and urban charges.*

The WCIR Amendment maintains this rationale in regard to the amended clause 24, commenting:

> *…. in order to align the regulatory period with, for example, a regulatory period that applies to the Part 6 operator in relation to a State-based regulatory period, for example for urban water services. The ACCC noted that this would reduce the regulatory burden associated with non-alignment of these services.*

Therefore, WaterNSW's application under clause 24 of the WCIR, which will seek to align the regulatory periods of the MDB valleys with the BHP, is wholly consistent with the intention of the WCIR and WCIR Amendment.

Pricing for coastal valleys

Maximum prices for Coastal Valley customers and Fish River Urban Water Supply Customers are made under the IPART Act 1992.

Section 11 of the IPART Act gives IPART a standing reference to conduct investigations and make reports to the Minister on the determination of the pricing for a government monopoly services supplied by a government agency specified in schedule 1 of the IPART Act. WaterNSW is listed as a government agency in schedule of the IPART Act.

Charges for services supplied to coastal valley and Fish River Urban Water Supply Customers are determined by IPART in accordance with the *Independent Pricing and Regulatory Tribunal (Water Services Order 2004),* which declares certain services provided by the now-abolished State Water Corporation to be a government monopoly service. In accordance with clause 24(2)(c)(ii) of schedule 2 of the *Water NSW Act 2014*, references in the Order to State Water are to be read as references to WaterNSW.

The Order applies only to those government monopoly services which are not regulated under the WCIR, such as the Coastal Valley Bulk Water Services and Fish River Urban Supply Services)[17].

2.1.2 ACCC Pricing Principles

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.[18] These include:

- Having regard to whether the regulated charges would contribute to achieving the Basin water charging objectives and principles set out in Schedule 2 of the Commonwealth Water Act;
- Setting the RAB in accordance with the requirements of the WCIR;
- Costs of bearing the risk of revenue volatility over the period; and
- The likely cost of purchasing insurance to manage revenue volatility.

WaterNSW's pricing proposal has been prepared to be consistent with the requirements of the ACCC's pricing principles, which are required to be considered by IPART, as outlined in Box 1 below.

Box 1 - WCIR mechanisms for managing revenue volatility

Extracts from ACCC Pricing Principles

In approving or determining a Part 6 operator's charges under Division 2 of Part 6, the regulator must also (under rule 29(4)): … have regard to whether the regulated charges would contribute to achieving the Basin water charging objectives and principles set out in Schedule 2 of the [Water] Act. The water charging objectives are:

- to promote the economically efficient and sustainable use of:
  - water resources; and
  - water infrastructure assets; and
- government resources devoted to the management of water resources; and
- to ensure sufficient revenue streams to allow efficient delivery of the required services; and
- to facilitate the efficient functioning of water markets (including inter-jurisdictional water markets, and in both rural and urban settings); and
- to give effect to the principles of user-pays and achieve pricing transparency in respect of water storage and delivery in irrigation systems and cost recovery for water planning and management; and
- to avoid perverse or unintended pricing outcomes.

For example, charges 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. Charges must also be sufficient to ensure that the required infrastructure services continue to be efficiently delivered. That is, charges must be designed so that businesses earn a sufficient revenue stream in order to meet their regulatory, legal and other obligations.

It will also be important that customers can readily understand the tariffs they are likely to face and the amount they would pay under different scenarios. Therefore charges should be clear to customers and promote pricing transparency.

In the case of Part 6 operators that have already had their opening RAB value set by an independent regulator prior to the WCIR commencing, Schedule 2 sets the methodology to be used to roll forward the RAB for the purposes of the first regulatory period in which charges are approved or determined under the WCIR.

Under Schedule 2(1) the RAB for the first regulatory period must be rolled forward in accordance with the formula {(A-B)+C}-(D+E) where:

- A is the value of the operator's assets that were used for the preceding period;

[17] The order does not apply to services provided by WaterNSW that are regulated under the WCIR as per the exclusions in Schedule 1 of the IPART Act.

[18] 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

- B is the value of those assets that were not used by the operator to provide infrastructure services during the preceding period and any assets contributed by customers or government;
- C is the actual (or, in the case of the last year of the preceding 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 preceding period; and
- D is the regulatory depreciation in respect of assets used to provide infrastructure services (as determined for each year of the preceding period) • E is the actual (or, in the case of the last year of the preceding period, forecast) revenue received by the operator from disposal of assets used to provide infrastructure services in the preceding period.

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); and
- changing charges during a regulatory period to reflect changes in forecast demand or consumption (see section 2.2).

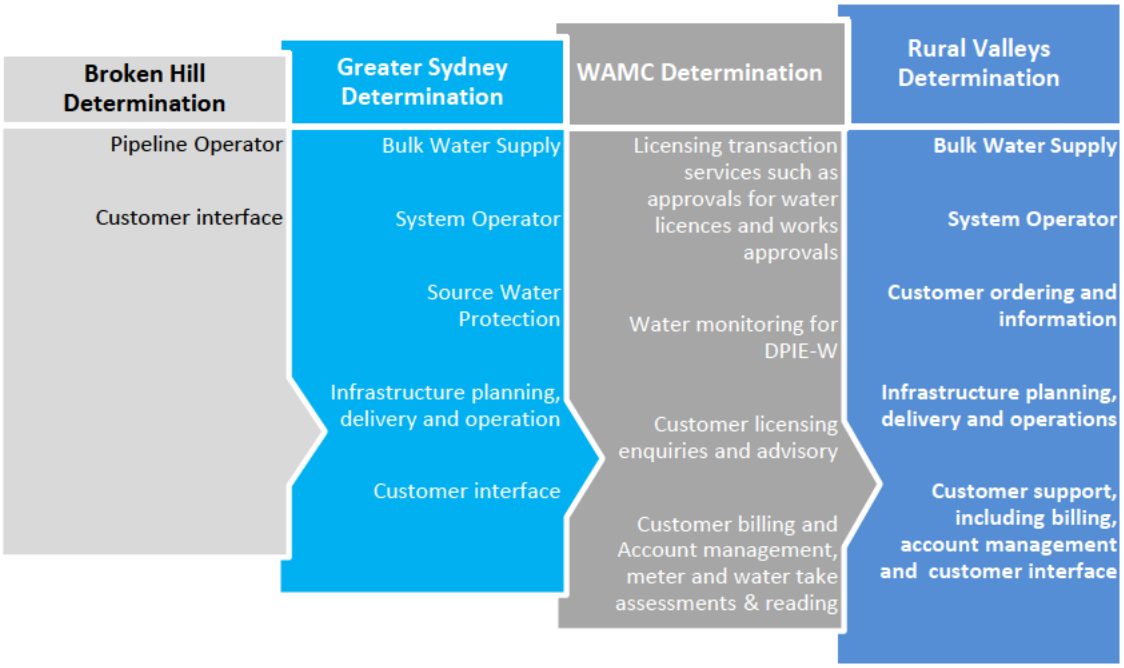
However, in some circumstances a regulator may wish to introduce other mechanisms to manage likely revenue volatility over the regulatory period. For instance, a regulator could estimate the opportunity costs associated with bearing the risk of revenue volatility over the period, or could estimate the 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.

2.2 What our pricing proposal does not apply to

The following figure sets out the regulated and unregulated functions carried out by WaterNSW, including those contained in the four determinations to which WaterNSW is subject.

Figure 21 - WaterNSW functions



This proposal covers the services contained in our Rural Valley 2017 Determination. It does not cover pricing for the provision of services to Greater Sydney, Pipeline Services under the Broken Hill Pipeline determination, or WAMC functions conferred on 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 2020 to 30 June 2024. IPART's Final Report, *Review of prices for WaterNSW*, was released on 16 June 2020.

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*" [19], has determined prices that WAMC can charge for water management services which are currently delivered on its behalf by DPI Water for the four year period commencing on 1 July 2016.

We bill our customers for all WAMC functions (including those still to be supplied by DPIE-W) at the IPART determined prices. However, to provide greater transparency to our customers, we will request IPART to endorse separate prices for WaterNSW, DPIE-W and NRAR for the provision of WAMC functions for the upcoming WAMC 2020 Price Submission.

2.2.3 Broken Hill Pipeline

The Murray River to Broken Hill Pipeline consists of a 270km subterranean pipeline, pumping stations and bulk water storage facility for transporting, storing and delivering bulk water from the Murray River at Wentworth to Broken Hill and surrounding communities.

IPART determined the maximum prices that WaterNSW can charge for the water transportation services provided by the pipeline for the three year period from 1 July 2019 to 30 June 2022 in its May 2019 *Prices for water transportation services provided by the Murray River to Broken Hill Pipeline from 1 July 2019 Final Determination*.

2.3 Regulatory determination period

Under the ACCC Pricing Principles for infrastructure operators when the rules commence, the first regulatory period is three years and all subsequent regulatory periods are four years.[20]

In accordance with clause 24 of the WCIR, WaterNSW proposes a **one-year regulatory period** for the nine valleys in the MDB, and customers in the Fish River Scheme (other than Oberon and Lithgow councils) in recognition of the impact that drought is having on our customers and the relief that a one-year determination with no, or minimal, price changes would provide.

For the coastal valleys, 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;

[19] IPART, Review of prices for the Water Administration Ministerial Corporation from 1 July 2016, Final Report, June 2016.
[20] ACCC 2011, WCIR pricing principles— July 2011, p. 12.

- 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.

We are also proposing a one-year regulatory period for the three coastal valleys and Oberon and Lithgow councils. Aligning the regulatory period for all the rural valleys will allow for synergies and economies in producing operating and capital forecasts, consumption forecasts and other information required by IPART.

As WaterNSW is working with the community and the NSW Government in addressing the impact of drought across the rural valleys, and businesses and customers alike are facing unprecedented challenges with COVID-19, a one-year determination offers a reasonable period to mitigate the impact for customers of drought and provide additional time to undertake detailed engagement with our customers on their water supply needs.

WaterNSW is proposing no change to its proposed revenue requirement in real terms for 2020-21 and to update prices only to reflect changes in externally driven factors (e.g. updating the 20-year rolling average, the application of IPART's February 2019 updated costs share report for rural customers and costs as advised to WaterNSW relating to the NSW Government's contributions to MDBA and BRC costs).

We believe that a one-year regulatory determination period for the provision of rural water services complies with the applicable legislation and would achieve a reasonable balance between providing incentives to pursue and pass on efficiency gains while considering the over-riding impacts of drought on our customers.

2.4 Annual price review process

WaterNSW acknowledges the need to continue 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); and
- It is reasonably necessary to vary the charges, having regard to price stability (the 'price stability' test).

The current approach provides a balance between managing changes in the 20-year rolling average of usage (see Section 9.1 below) and price stability for customers. WaterNSW has used the volumes from the 20-year rolling average when calculating its proposed prices.

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). They also include services 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 12 of this pricing submission.

The regulated charges also include separate charges to access WaterNSW's water service infrastructure such as metering service charges and the following miscellaneous charges (discussed in Section 14):

- 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; and
- Fish River connection and disconnection charges.

We have proposed maintaining the above charges in real terms ($2020-21) in this pricing proposal.

2.6 Murray-Darling Basin Authority and Border Rivers Commission charges

The MDBA and the 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. As part of the 2017 Determination, we were advised by DPI Water of the maximum charges the NSW Government required us to collect during the 2017-2021 determination period.

In the Murray and Murrumbidgee valleys, customers also pay MDBA pass-through charges to recover the costs of WaterNSW's payments in relation to the MDBA. The MDBA undertakes activities related to bulk water infrastructure services in these valleys. The NSW Government pays for the NSW share of MDBA costs. WaterNSW collects revenue from customers for the NSW Government's MDBA payments. The NSW Government has typically directed WaterNSW to collect a certain proportion of the charges from our customers, which we have done.

2.6.1 MDBA pass through charges

In the 2017 Determination, IPART set separate prices for licence holders in the Murray and Murrumbidgee (MDBA) and Dumaresq-Barwon Border River Commission (BRC) valleys to recover the costs of services delivered by the MDBA and BRC. These were levied as a two-part tariff, comprising entitlement and usage charges[21]. **WaterNSW proposes to continue to pass through the costs of the MDBA and BRC** and to maintain the structure of the MDBA and BRC charges. We will update the proposed charges for the advice received from the NSW Government on the amounts to be collected.

For 2021-22 (the 2021 Determination period), WaterNSW has been requested by DPIE-W to include in its IPART submission the amounts that should be recovered from bulk water users to contribute to the costs of the NSW MDBA and BRC obligations. This letter is shown at Appendix 7.

In March 2020, DPIE advised WaterNSW that it requires a 58% increase or $9.2 million p.a. in additional contributions from users to be recovered from WaterNSW bulk water charges from the period 2022 to 2026. The additional funding request is based on the Joint Program budget forecasts included in MDBA 2019-20 to 2022-23 Work Plan and Budget (Amended 17 December 2019).

Because of DPIE's funding request from March 2020, WaterNSW estimates that customers' bills in the Border Rivers, Murray and Murrumbidgee valleys will rise by the amounts illustrated in Table 2 below.

Table 2 - MDBA pass through charges ($millions, $2020-21)

	2020-21	2021-22	Change (%)
Total NSW Contribution to MDBA costs*	31.97	30.86	-3%
Total NSW Contribution to BRC costs*	1.19	1.90	60%
Murray Valley bulk water user share MDBA*	12.58	18.47	47%
Murrumbidgee bulk water user share MDBA*	2.81	4.10	46%
Total Water NSW bulk water user share of MDBA	15.39	22.57	47%
Water NSW bulk water user share of BRC	0.63	1.04	66%
WaterNSW bulk water total user share of NSW BRC & MDBA costs	**16.02**	**23.61**	47%
WaterNSW bulk water user share of total NSW Government contribution*	**48%**	**72%**	**49%**

* 2020-21 is the last year of the 2017 Determination period.

WaterNSW proposes to maintain the existing 80:20 fixed to variable tariff structure to recover the cost of the MDBA and BRC from customers.

The indicative charges for the pass through charges are shown in the tables below, together with a bill impact comparison from the current pass through charges set by IPART.

[21] See Table 1.3 and 1.4 from the IPART 2017 Rural Valleys Determination on page 11.

Table 3 - Border Valley BRC pass through charges ($2020-21)

Border			
	2020-21	2021-22	Change (%)
HS Fixed Charge	$4.97	$8.39	68.8%
GS Fixed Charge	$1.85	$3.07	65.9%
Variable Usage Charge	$0.84	$1.41	67.9%

* 2020-21 is the last year of the 2017 Determination period.

Table 4 - Murray Valley MDBA pass through charges ($2020-21)

Murray			
	2020-21	2021-22	Change (%)
HS Fixed Charge	$7.83	$12.51	59.8%
GS Fixed Charge	$3.83	$5.51	43.9%
Variable Usage Charge	$1.61	$2.60	61.5%

* 2020-21 is the last year of the 2017 Determination period.

Table 5 Murrumbidgee Valley MDBA pass through charges ($2020-21)

Murrumbidgee			
	2020-21	2021-22	Change (%)
HS Fixed Charge	$1.73	$2.71	56.6%
GS Fixed Charge	$0.65	$0.93	43.1%
Variable Usage Charge	$0.33	$0.51	54.5%

* 2020-21 is the last year of the 2017 Determination period.

Table 6 - Border Valley BRC pass through bill ($2020-21)

Border				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$235	$392	$156	66.4%
Medium Customer	$1,177	$1,958	$781	66.4%
Large Customer	$2,354	$3,916	$1,562	66.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$581	$980	$399	68.7%
Medium Customer	$2,905	$4,900	$1,995	68.7%
Large Customer	$5,810	$9,800	$3,990	68.7%

* 2020-21 is the last year of the 2017 Determination period.

Table 7 - Murray Valley MDBA pass through bill ($2020-21)

Murray				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$480	$707	$227	47.4%
Medium Customer	$2,398	$3,535	$1,137	47.4%
Large Customer	$4,796	$7,070	$2,274	47.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$944	$1,511	$567	60.1%
Medium Customer	$4,720	$7,555	$2,835	60.1%
Large Customer	$9,440	$15,110	$5,670	60.1%

* 2020-21 is the last year of the 2017 Determination period.

Table 8 Murrumbidgee Valley MDBA pass through bill ($2020-21)

Murrumbidgee				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$85	$124	$39	45.8%
Medium Customer	$424	$618	$194	45.8%
Large Customer	$848	$1,236	$388	45.8%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$206	$322	$116	56.3%
Medium Customer	$1,030	$1,610	$580	56.3%
Large Customer	$2,060	$3,220	$1,160	56.3%

* 2020-21 is the last year of the 2017 Determination period.
* 2021-22 MDBA&BRC charges calculated based on forecast volumes. Small HS customer is assumed to hold 100ML of HS entitlements with 100% utilisation. Small GS customer is assumed to hold 100ML of GS entitlements with 60% utilisation. Bill impacts consider MDBA and BRC charges only.

2.7 Consultation

WaterNSW is committed to meaningful engagement with its customers and stakeholders. In considering whether customers were supportive of the key elements of our Rural Valleys pricing proposal, we consulted with customers primarily through the Customer Advisory Groups (CAG) process. The support from these groups for our proposal has been strong in recognition of the impacts of drought on the community. Our consultation on Rural Valley activities commenced as part of the February 2019 CAGs round presentations, totalling forty meetings (four meeting rounds with ten valleys per round).

We consulted with the CAGs on a number of issues, including whether customers were supportive of a one-year determination period. The support from these groups for our proposal has been strong in recognition of the impacts of drought on the community.

Through our "Voice of Customer" research, customers have told us that they have an increased awareness of the activities WaterNSW provides for regulated river users. Increased customer service is also perceived by rural customers.

WaterNSW notes that we are embarking on a detailed customer engagement process to inform the development of our future rural valley proposals. The one-year determination would allow engagement process to be undertaken and the insights are to be incorporated in our 2022 and subsequent Determinations.

2.8 Long-term levels of service

WaterNSW has developed a 20 Year Infrastructure Options Study[22] which provides a strategic level qualitative assessment of potential infrastructure options to meet long-term level of service (LOS) objectives in regulated river water supply areas (valleys) across NSW (excluding Greater Sydney).

This options study identifies infrastructure options that were considered successful in qualitatively addressing our perceived LOS gaps within a valley. Should customers or Government wish to explore the opportunities to close the identified LOS gaps, then we recommend the identified options be investigated in more detail. This options study will be further developed with appropriate customer input, technical assessment and cost-benefit analysis. Customers will be consulted about their long-term LOS priorities and the infrastructure options they will support to meet those needs.

[22] See https://www.waternsw.com.au/projects/infrastructure-studies/20-year-infrastructure-options-study

The cost estimates presented in this document are strategic (pre-feasibility) level estimates, and so carry inherent uncertainty commensurate with the level of detail of this work. The cost estimates were prepared for options comparison only. The infrastructure sizes and costs will be further reviewed in future studies. This options study is not a capital investment plan for WaterNSW, but rather a baseline to guide future decision making and benchmark future investments.

This options study does not address the potential operational or regulatory options that need to be considered when making investment decisions. These options are being developed by WaterNSW in parallel and will come together prior to WaterNSW's 2022 Determination. This study fulfils the target setup by Infrastructure New South Wales' 2014 State Infrastructure Strategy Update and NSW Government's election commitment.

3. Regulatory framework

3.1 Form of price control

WaterNSW proposes to maintain the current form of price control.

The form of price control in the 2017 Determination applying to MDB valleys infrastructure charges is a price cap that modified the hybrid price and revenue cap initially introduced by the ACCC in the *ACCC Final Decision on State Water Pricing Application: 2014-15 – 2016-17, June 2014* (the ACCC 2014 Decision).

In 2014, the ACCC determined that for most of the valleys, WaterNSW would recover 40% of its revenue from fixed charges and 60% 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*."[23]

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.

In its 2017 Determination, IPART decided to discontinue the UOM, as it considered that a revenue volatility allowance is a better approach to mitigating revenue volatility risk. To address the existing UOM balance, IPART incorporated a UOM payback amount in prices so that the balances can be recovered over a 12-year period (potentially three determination periods).

WaterNSW proposes maintaining the following mechanisms from the 2017 Determination for the 2021 Determination:

- The current approach of setting maximum prices as the form of control for the Rural Valleys;
- The approach to paying back to the UOM adopted by IPART whereby the UOM balance is recovered over a 12-year period; and
- IPART's approach to managing revenue volatility through a 'risk transfer product' as discussed in Section 3.5.

3.2 Building block approach

WaterNSW supports the continued use of the building block approach to develop our target revenue allowance.

In its 2017 Determination, IPART applied the following building block framework to calculate WaterNSW's notional revenue requirement over the determination period. To apply this approach, IPART made decisions on the revenue WaterNSW would require in each year of the regulatory period, based on the following building blocks:

- The revenue required for **operating expenditure** over the period. This amount represented IPART's estimate of WaterNSW's forecast efficient operating, maintenance and administration costs;
- An allowance for a **return on the assets** used to provide the regulated services. This amount represented IPART's assessment of the opportunity cost of the capital invested in WaterNSW by its owner and debt providers to ensure that it can continue to make

[23] The ACCC 2014 Decision, page 22.

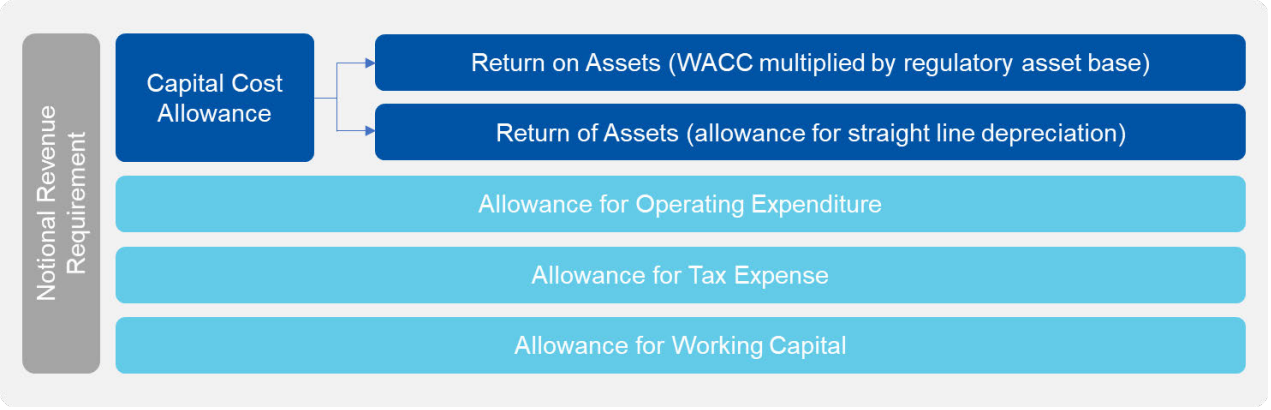
efficient investments in capital in the future. The return on capital was calculated by multiplying an inflation indexed RAB by a rate of return on capital that excluded the impact of inflation, or a 'real' framework, so as to not double count the impact of inflation;

- An allowance for a **return of assets** (depreciation). This allowance recognises that through the provision of services to customers, a water utility's capital infrastructure will wear out over time and therefore revenue is required to recover the cost of maintaining the RAB;
- An allowance for meeting **tax obligations**. As part of its 2017 Determination, IPART adopted a post-tax real WACC and calculated WaterNSW's tax liability as a separate cost building block as IPART considered this method more accurately estimates the tax liability for a comparable commercial business; and
- An allowance for **working capital**. This allowance represents the holding cost of net current assets, such as receivables and payables.

The total revenue requirement represents the efficient costs that can be recovered by WaterNSW for the provision of monopoly services. The revenue requirement is set by IPART at efficient levels to ensure that WaterNSW can meet its legislative and regulatory obligations as well as any service standards and customer driven discretionary requirements.

A diagram of IPART's building block revenue requirement approach is shown below:

Figure 22 - Total 'building block' revenue requirement approach



The sum of the above building blocks represented IPART's view of our total efficient costs over the determination period, or the total revenue requirement as discussed in Section 12.

To promote certainty and transparency in the regulatory framework, WaterNSW proposes that IPART continue to use its current 'building block' approach applied for the 2021 Determination period.

In addition to these costs, we propose to continue the following adjustments to the building blocks for the 2021 Determination:

- The amortisation of the UOM allowance as per IPART's methodology from the 2017 Determination;
- The efficient cost of the risk transfer mechanism to manage revenue volatility as discussed in Section 3.5 below, and
- Irrigation corporations and districts (ICD) rebates.

Our proposed allowances for the building block components are presented in Sections 5 to 10.

3.3 Approach for converting the revenue requirement into prices

Having calculated WaterNSW's notional revenue requirement for the 2021 Determination period, IPART then converts the notional revenue requirement into prices. To do this, IPART makes a number of decisions, including the following:

- The target revenue for each year;
- The revenue expected from other sources;
- Forecast water sales and customer numbers over the determination period;
- The structure of WaterNSW's prices, and the revenue to be generated from various charges; and
- The level of prices.

WaterNSW considers that IPART's approach for converting the notional revenue requirement into prices for the 2017 Determination was appropriate and proposes that the approach is continued for the 2021 Determination period.

3.4 Efficiency carryover mechanism

In its Final Decision for the 2017-21 Determination, IPART stated that it intended to implement an ECM at WaterNSW's 2021 price review to apply to operating expenditure (i.e. the ECM did not apply to capital expenditure). This was consistent with its decision to introduce an ECM for Sydney Water and Hunter Water Corporation.

The ECM is intended to provide a regulated business with an incentive to be efficient and find permanent operating expenditure savings consistently throughout the regulatory period, thereby removing the inherent bias to cut costs in the early years and ramp up costs in the later years of a regulatory period.

The ECM is intended to reward businesses by allowing permanent cost savings to be retained by the business for four years, regardless of the year in which the saving occurs.

While WaterNSW proposes that the ECM forms part of the 2021 Determination, WaterNSW is not proposing to include an ECM carry forward amount in our proposed 2021 Determination period revenues on the basis that:

- WaterNSW's motivation to achieve efficiency gains is not driven by the ECM *per se*; rather we seek to provide secure, high quality water at the lowest price for our customers consistent with our statutory obligations; and
- In recognition of the impact of water prices on customers, we do not consider that carrying forward additional costs to the 2021 Determination period arising from efficiency savings in the current period is appropriate in time of drought.

Application of the ECM to capital expenditure

WaterNSW has also considered the merits of extending the ECM to capital expenditure. On balance we suggest that the ECM not be extended to capital expenditure on the basis that:

- A capital ECM would presumably (at best) be applicable to recurrent capital expenditure or approximately 25% of our overall capital expenditure program;
- The 'lumpy' nature of the WaterNSW capital expenditure program means that there can be significant shifts from year to year. The factors for swings can be related to the stage of the investment asset life-cycle and government-directed investment, rather than efficiency;

- We query the scope for efficiency savings in capital expenditure given that:
  - Capital expenditure construction is procured from third parties
  - The market-testing of procurement results in the most efficient provider delivering the works. This reduces the need for extending the ECM to capital expenditure as it is already market tested and efficient; and
- The ECM does not help to demonstrate whether a capital expenditure project/program is prudent. This is demonstrated by our governance, decision-making and planning processes. Therefore, an ECM for capital expenditure will not improve the prudency of the investment or remove the need for regulatory scrutiny of the capital expenditure program at each reset.

From our analysis, we do not consider that extending the ECM to include capital or advocating an alternative capital incentive scheme (such as the AER's Capital Expenditure Sharing Scheme), would improve incentives for capital efficiency or result in improved outcomes for the organisation and its customers.

On this basis, WaterNSW proposes that the ECM not be extended to capital expenditure.

3.5 Managing revenue and volume volatility

In the 2017 Determination, IPART approved the inclusion of a risk transfer product ("**RTP**") to manage revenue volatility as outlined below:

> *WaterNSW originally proposed to include $3.6 million per year to manage its revenue volatility risk through its proposed risk transfer product (RTP). Our decision is to allow a volatility allowance of about $1.3 million per year, which is consistent with WaterNSW's revised proposal in its submission to our Draft Report. This recognises that WaterNSW is subject to revenue volatility risk, which arises from the difference between its largely fixed cost structure and its price structure (which is 40:60 fixed to variable in many valleys).*
>
> *We have also decided to discontinue the unders and overs mechanism (UOM), as we consider that a revenue volatility allowance is a better approach to mitigating revenue volatility risk. To address the existing UOM balance, we have incorporated a UOM payback amount in prices so that the balances can be recovered over a 12-year period (potentially three determination periods). This UOM payback puts upward pressure on bills for some customers, namely for GS customers in the Macquarie, Lachlan, Gwydir and Namoi valleys. This is an increase, applicable until the UOM balance in each valley is returned to zero.*[24]

WaterNSW proposes to maintain the current approach from the 2017 Determination to managing revenue volatility for the 2021 Determination. This consists of:

- Maintaining the RTP in the cash flows, noting that we have proposed an increase to reflect the efficient cost of sourcing the product from the market that is higher than IPART's allowance of $1.3 million per year to $2.3 million to reflect our current premiums; and
- Continuing to pay back the UOM over the remainder of the 12 year amortisation period in line with IPART's previously determined approach.

This position is subject to the insurance market pricing being economically viable and/or the market continuing to want to support the product. This may be at risk given WaterNSW has received significant insurance proceeds over the last two financial years which is expected to continue in 2020-21.

[24] See IPART's June 2017 Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021. Page 6.

These matters are discussed in the sections below.

3.5.1 Risk transfer product

At the 2017 Determination, and consistent with the ACCC Pricing Principles, WaterNSW 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; and
- A third-party: by using an RTP (similar to insurance) to transfer some of the revenue stream to a third party to reduce the volatility borne by WaterNSW.

WaterNSW's preferred approach to managing the revenue volatility was 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; and
- 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.

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. [25]

At the time of the 2017 Determination, through the RTP, WaterNSW proposed to swap funds with a third-party to mimic an 80:20 fixed to variable tariff structure as this structure largely reflected our underlying cost structure, while not eliminating all business risk. WaterNSW obtained an initial quote of an RTP on this basis.

IPART decided that the volatility allowance to be incorporated into prices over the 2017 Determination ($2015-16) was $1.3 million in 2017-18 and then $1.274 million each year thereafter. This amount was based on WaterNSW's market quote provided at the time, adjusted for IPART's decision to adopt an 80:20 tariff structure in the Peel valley from the second year of the determination period (i.e., in 2017-18 the tariff structure in the Peel valley was maintained at 40:60, but from 2018-19 onwards the tariff structure would be 80:20 fixed to variable).[26]

Costs of the RTP have increased

WaterNSW entered into arrangements with a third party provider through a competitive procurement process, facilitated by the NSW Government's self-insurance entity, icare, and its specialist reinsurance market advisors. WaterNSW notes that the costs of securing the RTP have been significantly higher than IPART's $1.3 million allowance since the product's inception. WaterNSW will provide information to IPART on a confidential basis on the costs of obtaining the RTP.

Placing greater upward pressure on the cost of the product, WaterNSW lodged a claim in 2018-19 to recoup the revenue shortfall associated with sales volumes being materially below the 20-

[25] 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.
[26] See IPART's June 2017 Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021. Page 94.

year rolling average – the denominator in the price setting formula in the 2017 Determination. We also anticipate a larger claim will be lodged for 2019-20.

Based on our market sounding, WaterNSW proposes an RTP premium of $2.3 million for the 2021 Determination consistent with the 2018-19 actuals ($nominal). We note that our proposed RTP premium, while higher than IPART's allowance at the 2017 Determination, is not inconsistent with the previous volatility allowance of $2.2 million ($2009-10) set by IPART at the 2010 Determination.[27]

While the RTP 'did its job' in mitigating the costs of the revenue shortfall in 2018-19, the market may be unwilling to continue to offer an RTP based on the current annual premium and the likelihood that sales volumes will continue to be below the 20-year rolling average due to the continuing effects of drought.

WaterNSW requests that IPART consider the outcomes of the market-source final costs for the RTP for 2021-22, prior to finalising the 2021 Determination.

In the final 2017 Determination, IPART allocated the volatility allowance to each valley based on the relative sum insured for each valley, on the basis that the cost of the RTP was expected to broadly move in line with the sum insured for each valley.[28]

WaterNSW proposes to maintain the allocation allowance to each valley based on the approach set out in the 2017 Determination.

3.5.2 Unders and overs mechanism payback

In the 2017 Determination, IPART decided to discontinue the UOM as IPART considered that a revenue volatility allowance is a better approach to mitigating revenue volatility risk. The UOM introduced by the ACCC in the 2014 Determination was replaced by the 'volatility allowance' that IPART previously included in the 2010 Determination. The replacement of the volatility allowance by the ACCC with an 'unders and overs account' was introduced to address the revenue volatility in the following manner:

> *The ACCC's decision addresses revenue volatility by establishing an 'unders' and 'overs' account. An unders and overs account allows State Water to adjust its charges annually to recover a portion of the revenue not recovered because water usage is lower than forecast, or to return a portion of revenue to customers if water usage is higher than forecast.*
>
> *The approach reduces price volatility for customers while allowing State Water to recover all of its costs over time.*[29]

In the 2017 Determination, and as discussed in the previous section, IPART decided to move away from the ACCC's unders and overs account and introduce an RTP. In moving away from the unders and overs account, IPART decided to 'payback' and unwind the UOM over time based on the following:

> *We have also decided to discontinue the unders and overs mechanism (UOM) as we consider that a revenue volatility allowance is a better approach to mitigating revenue volatility risk. To address the existing UOM balance, we have incorporated a UOM payback amount in prices so that the balances can be recovered over a 12-year period (potentially three determination periods). This UOM payback puts upward pressure on bills for some customers, namely for GS customers in the Macquarie, Lachlan, Gwydir*

[27] See IPART's Review of bulk water charges for State Water Corporation From 1 July 2010 to 30 June 2014 Water — Final Report, June 2010. Table 1.7, page 11.
[28] See IPART's 2017 Rural Valleys Determination, Table 8.5, column 'Final Decision 2018-19 to 2020-21', page 95.
[29] See ACCC Final decision on State Water Pricing Application: 2014-15 – 2016-17, page 11.

and Namoi valleys. This is an increase, applicable until the UOM balance in each valley is returned to zero.

This is because the NSW Government has resumed paying its historical share of the MDBA's costs. Our decision of about $1.3 million per year is based on WaterNSW's efficient cost of insuring its revenue volatility risk with a third party. We have decided to set prices at a level which pays back the UOM over 12 years, to ameliorate impacts on customers' bills.[30]

For the 2021 Determination period, WaterNSW proposes to continue to payback the UOM in the manner specified by IPART in the 2017 Determination, i.e. 1/12th of the UOM balance to be paid back during 2021-22.

3.5.3 Managing volume risk moving forward

WaterNSW's current RTP is a scheduled to expire at the end date of the 2017 Determination period. Given the significant volume risk associated with potential volume shortfalls relative to IPART's 20-year rolling average across the valleys, as we are currently experiencing due to ongoing drought, managing volume risk will be a key element of our 2021 and 2022 Determinations.

WaterNSW intends on seeking to extend or replace the RTP for the 2021 Determination and beyond. However, given that we have successfully claimed on the policy for material revenue shortfalls in 2018-19, and are likely to seek a further claim for 2019-20, it may be that we are unable to secure another RTP at an acceptable price (if a product will be offered at all) as the current provider seeks to recover its short-term losses.

WaterNSW will therefore keep IPART abreast of our efforts to obtain an RTP from the market for the 2021 Determination period and beyond. However, given the possibility that a product either won't be available or will be available but at an unacceptable price for customers, alternative approaches to managing volume risk (e.g. potentially reintroducing a UOM or revisiting fixed and variable tariff structures) will need to from part of the 2021 and 2022 Determination processes.

3.6 Government and user share calculation

Traditionally, IPART has applied the share ratios to allocate the efficient costs of regulated services between customers and the Government using the 'impactor pays' principle. The impactor pays principle, as described by IPART, 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).

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[31]). IPART's methodology evolved over several price determinations and was applied by the ACCC in its 2014 Determination and by IPART in its 2017 Determination.

IPART, in its 2018 Final Report on the Review of its Rural Water Cost Share Framework (the "**IPART Cost Share Report**"), revised a number of cost share percentages under its activity-based cost sharing framework. The IPART activity-based framework assigns a cost share ratio to each 'W code' in the WAMC Determination.

[30] See IPART's June 2017 Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021. Page 6.
[31] The IPART regulatory model provided to WaterNSW in April 2016 states that Fish River Scheme and Lowbidgee costs are allocated 100% to the user.

Changes in the 2018 IPART Cost Share Report result in an increase the share of costs incurred by customers. IPART's underlying principle is to allocate costs in relation to the contribution that groups make towards different types of costs. The major changes made by IPART to the cost sharing arrangements that are relevant for this review include:

- Water delivery and other operations, corrective maintenance, routine maintenance, asset management planning: IPART reduced the customer cost share from 100% to 95%;
- Renewals and replacement: IPART reduced the customer cost share from 100% to 90%; and
- Flood operations, dam safety and compliance, environmental planning and protection: IPART increased the customer cost share from 50% to 80%.

The IPART Cost Share Report concluded that the incremental increase from the change in the cost sharing ratios in 2018 was an increase in customer prices of about 1%. We note that this analysis was conducted using operating and capital expenditure allowances in the 2017 Determination.

The true incremental impact of the change in the cost share ratios will depend on the revised efficient operating and capital expenditure allowances factoring in the inclusion of a Fishway Construction Program among other legislative and regulatory cost drivers such as dam safety compliance.

Nevertheless, although the incremental impact of the change in the cost share ratios is expected to be much higher than the 1% estimated by IPART in 2018, WaterNSW proposes to increase the user share revenue requirement by IPART's estimate of 1% over the 2021 Determination period as this is a result of IPART's decision to increase the user share and is independent of any actions within the control of WaterNSW. This represents a lower bound estimate of the incremental impact of the change in the IPART cost shares in 2018.

The user shares of cost drivers for operating and capital expenditures arising from the 2018 IPART Cost Share Report are shown in Table 9 below. Under these new arrangements, the majority of costs are allocated to customers. The key exceptions 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) and dam safety costs, which are split between customers (80%) and the Government (20%).

Table 9 New cost sharing arrangements between NSW Government and customers

Cost driver	Cost driver descriptions	Customer share[32]
Operating expenditure		
Customer Support	Management and administration of the CAGs, customer education and support materials and call centre support.	100%
Customer Billing	Customer enquiries related to billing, transaction and complaints services related to billing, invoicing, receipting, debtor management, system administration, postage to collect regulated revenue.	100%
Metering & Compliance	Customer water ordering, customer water accounting management, 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	95%

[32] Percentages are based on IPART's 2018 Cost Share Report.

Cost driver	Cost driver descriptions	Customer share[32]
	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.	
Flood Operations	Flood operations/ Flood training/Onsite works required flood operations.	80%
Hydrometric Monitoring	This service was purchased from DPI Water prior to 2016-17 but since 2016-17 has been provided by WaterNSW	90%
Water Quality Monitoring	Storage water quality monitoring and reporting Fish River water quality management plan	80%
Corrective Maintenance	Breakdown maintenance of assets which provide services to customers and other water users.	95%
Routine Maintenance	Planned or condition based maintenance of assets which provide services to customers and other water users.	95%
Asset Management Planning	Asset planning and safety/Maintenance planning/Asset condition auditing/Operational risk and incident management. Procurement/Dam safety/compliance/Operations.	95%
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	80%
Environmental Planning & Protection	Environmental management – strategic and specific planning and assessment, Fish passage, Carbon neutrality Cold water pollution	80%
Insurance	Insurance such as public liability and building, Risk Transfer Product premiums, 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.	95%
Routine Maintenance	Planned or condition based maintenance of assets which provide services to customers and other water users.	95%
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	80%
Renewal & Replacement	Expected wear and tear and usage of water infrastructure	95%
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.	80%
Environment Planning and Protection	Environmental management – strategic and specific planning and assessment, Fish passage, Carbon neutrality, Cold water pollution.	80%
Flood operations	Flood operations Flood training Onsite works required flood operations.	80%
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.	95%

Source: WaterNSW

Over the current and future determination period, we are proposing to introduce a cost driver category to identify WaterNSW's actual and forecast cost of responding to drought. This will allow IPART to apply the rural valley cost share framework and allocate the efficient costs of drought between users and the Government.

As prolonged periods of drought are expected to become increasingly commonplace, we consider it appropriate to expand the application of the IPART cost share regime to the costs incurred by WaterNSW for the delivery and successful implementation of drought response projects initiated by Government. As drought expenditure has been incurred based on a direction from Government, we submit that it is the Government, as the impactor who should contribute to the cost of the works.

Table 10 - Proposed cost sharing arrangements for specified drought-related works

Cost driver	Cost driver descriptions	Customer
Drought Response (as discussed in Section 5)	Cost incurred in relation to the delivery of works for the NSW Government's Critical Drought Initiative and other initiatives/drought projects to deliver critical infrastructure to address the prolonged risk of drought. Projects are typically initiated by Government in response to critical water shortages in regional areas. Works may be required to strengthen water supply for critical needs, industrial, irrigation and/or stock and domestic purposes. This category includes operating and capital expenses, planning costs, project management costs and overhead allocations.	0%

3.7 NSW Government's non-urban metering reform program

The NSW Government is implementing a new metering framework for non-urban water take in NSW. The key objectives of the metering framework are that:

- The vast majority of licensed water take is accurately metered;
- Meters are accurate, tamper proof and auditable;
- Undue costs for smaller water users are minimised; and
- Metering requirements are practical and can be implemented effectively.

The major element of this framework is the introduction of a mandatory metering condition in licences requiring metering equipment that meets specified standards plus telemetry (or 'telemetry ready' data loggers) to be installed, used and properly maintained on all water supply work approvals above a certain threshold.

Under the new framework, water users with works that meet one or more of the metering thresholds will be required to have a meter:

- Those that are already required to have a meter or measure water take;
- Those that meet a particular infrastructure size ;
- Users with multiple works; or
- Users drawing from an at-risk groundwater source.

The *Water Management (General) Regulation (2018)* (Regulation) sets out the requirements that must be complied with by all holders of approvals, licences and entitlements who are subject to the mandatory metering condition. It also prescribes which approval holders are exempted from the mandatory metering condition, based on thresholds. The regulation contains new record-keeping rules for holders of approvals, licences and entitlements, and a new process for faulty meters.

The new metering framework has commenced and will be rolled out over a five-year period, starting with the largest consumers of water (i.e. the largest works) and then rolling out on a region-by-region basis. The remaining transition to the new metering requirements is as follows and as illustrated below:

Figure 23 - Non-urban metering reform implementation timeline[33]

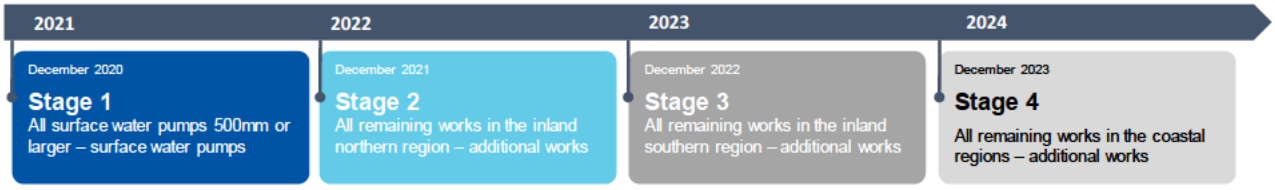
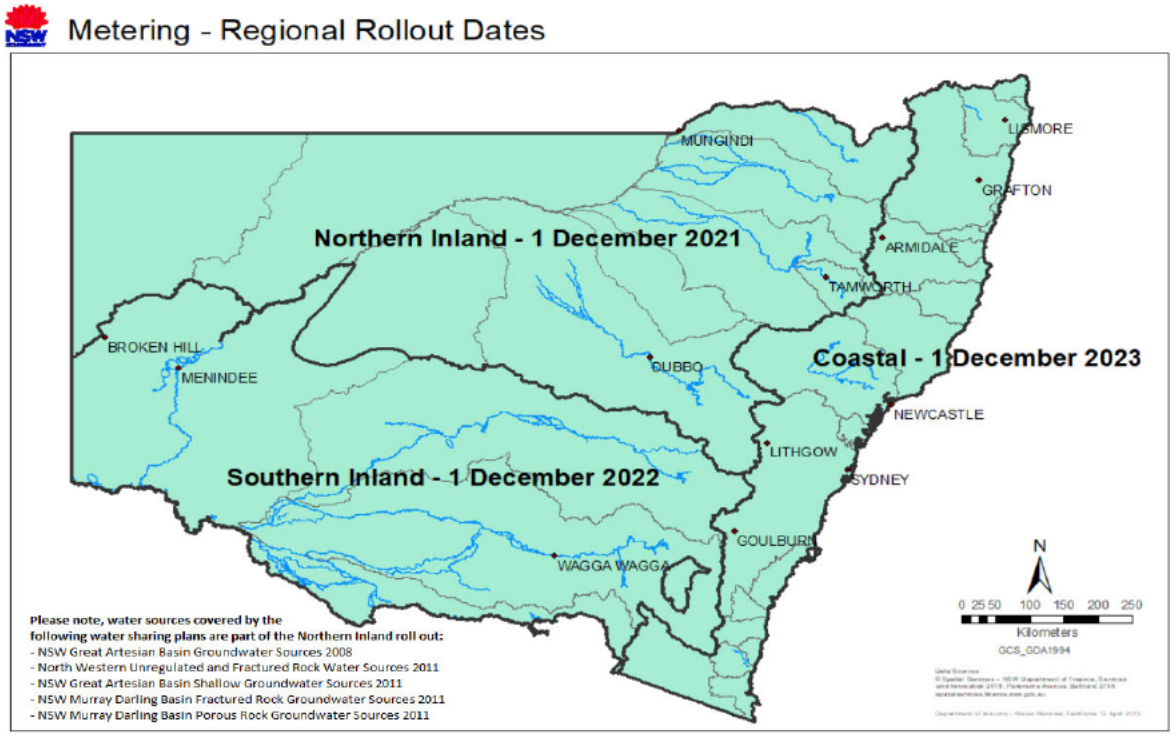


Figure 24 - Non-urban metering – regional rollout dates



Source: DPIE-W website

We note that the current timelines are subject to change by Government.

The non-urban metering framework will have a significant impact on WaterNSW, including current services related to metering and integration of new systems and data to carry out existing functions. A project is in place to determine that impact, identify what needs to be done for implementation and then how it will be managed on an ongoing basis.

[33] These numbers are taken from the DPIE-water website.

As part of the reforms, it is proposed that existing metering functions conferred on WaterNSW are amended and some new functions will be conferred. In addition, some new licence conditions are also proposed.

The background to the metering reforms and the likely impacts on WaterNSW, including for the Rural Valleys, is discussed in detail in Appendix 2 'Impact of non-urban metering reform'.

Given the uncertainty around the policy and operational landscape and the associated costs of metering reform, WaterNSW has **excluded** the costs of non-urban metering reform from this pricing proposal. **WaterNSW will provide cost forecasts to IPART during the review process, by end December 2020, for IPART's consideration and inclusion in the Final Determination.**

3.7.1 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, 2014 ACCC price review and the 2017 IPART Determination.

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.

While WaterNSW is proposing the continuation of the Yanco Creek levy and will continue to remit the revenue from the levy to the Yanco Creek and Tributaries Advisory Council, we are not in a position to provide IPART with any indication of the level of customer support for the charge. On that basis, we recommend that IPART seek feedback from affected customers to determine whether there is support for the charges in the 2021 Determination period.

4. Proposed capital expenditure

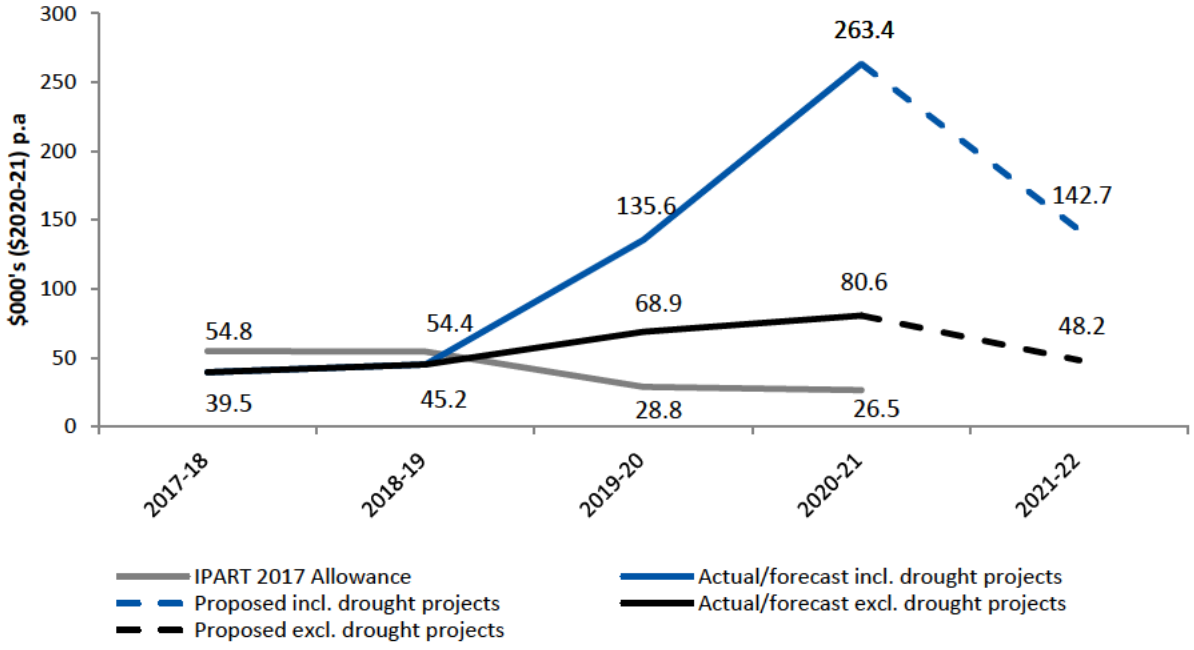
*We propose to invest **$48.2 million** in capital expenditure in the 2021 Determination period, excluding drought projects, so that we can continue to ensure the availability of water resources that are essential for our Rural Valley customers.*

4.1 Overview of proposed capital expenditure requirements

As illustrated in Figure 25 below, actual and forecast capital expenditure over the four years of the 2017 Determination period, excluding our investment in drought projects, is $234.2 million, $69.9 million (42%) higher than IPART's allowance of $164.4 million ($2020-21) from the 2017 Determination, with the main driver being the reprioritisation of our renewals program.

In addition to delivering our core capital expenditure activities, WaterNSW has also undertaken extensive drought-related activities at the request of the NSW Government. If the costs of these activities are included, our expenditure over the four years of the 2017 Determination period is $483.7 million, or an increase of $319.1 million (194%) compared with the IPART allowance over the four years. This demonstrates our ability to efficiently deliver a large and varied capital program.

Figure 25 – Actual, allowed and proposed capital expenditure ($2020-21)



IPART's regulatory allowances in 2019-20 and 2020-21 were based on a significant (i.e. almost 50%) reduction from the 2018-19 allowance, which has proven to be unsustainable and well below a level required to efficiently service assets valued with a RAB value of approximately $950 million across all valleys. This shortfall is exacerbated when investment in drought-related activities is considered.

Our proposed capital program for 2021-22 is **$142.7 million** ($2020-21), which includes the costs of a number of drought-related projects that WaterNSW is undertaking to ensure water

supply for rural customers. We propose to **exclude the costs of drought-related projects** in our customer charges for the 2021 Determination period, resulting in a proposed capital expenditure program of **$48.2 million** ($2020-21). The capital program is aimed at the renewal and replacement of assets that are used to collect, store and deliver raw water to customers in line with current service and expenditure levels. This will ensure asset reliability and capability are properly maintained.

The difference between our total proposed capital expenditures and the capital charges to be recovered from customers in 2021-22 is proposed to be recovered through the Government portion of IPART's cost sharing arrangements. We note that some further user allocation of these costs may be appropriate over the four-year 2022 Determination – this is a matter for the subsequent determination and is not considered further in this pricing proposal.[34]

Our forecast of capital expenditure has been developed to ensure that we meet our legislative obligations and the needs of customers, and to align with effective and efficient management of risks and benefits for our customers.

Consistent with IPART's regulatory framework, in this pricing proposal, WaterNSW seeks 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. The forecast has also been developed with regard to the current uncertainties our customers are facing due to drought, and now COVID-19. It reflects our proposal to hold our 2020-21 revenue requirement constant in real terms for the 2021 Determination period, updating prices to reflect external factors only, as noted throughout this pricing proposal.

The total capital expenditure has been allocated between user and Government shares applying the IPART cost share ratios (as discussed in Section 3.7). A summary of the total capital expenditure, user share and Government share is shown in Table 11 below.

Table 11 - Summary of total proposed capital expenditure ($000s, $2020-21)

Revenue Requirement		
Revenue Category	**2021-22**	**% of total**
User share	42,758	89%
Government share	5,434	11%
Total capital expenditure	**48,192**	**100%**

Our capital expenditure requirements in the 2021 Determination period comprise four high level categories which reflect "capability" drivers. The four investment categories are:

- Maintaining capability – Renewals and replacement, corporate systems and asset management and planning;
- Augmenting capability – Dam expansions and corporate systems improvements;
- New capability – Water delivery and other operations and drought response projects (e.g. new dams); and
- Regulatory compliance activities – Dam safety compliance and environmental planning and protection.

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

4.2 Capital expenditure forecasting methodology

WaterNSW's capital expenditure is based upon the assessed requirement to meet customer service levels at an acceptable level of reliability, whilst maintaining compliance with our regulatory obligations.

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.

WaterNSW's approach to funding for various drought-related projects, including our approach to funding major dam projects, is provided in Section 5.

4.2.1 Prioritisation and justification

WaterNSW prioritises capital works according to a number of core principles to ensure the effective and efficient management of risks and benefits for customers and community. The intent is to ensure that WaterNSW has the right asset capability to meet our obligations to customers, delivering service at the required level.

These core principles apply to the identification, prioritisation and scheduling of capital works:

- All investment is justified against 'do nothing' and alternative options. 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 responsible intervention" whilst being sensitive to asset criticality, regulatory compliance requirements, and life-cycle costing considerations; and
- Customer interests are always considered - 'should our customers be paying for this?' and 'what is the likely bill impact of this decision?' are both core considerations in 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.

4.2.2 Cost allocation methodology

WaterNSW's regulated charges are set according to four IPART pricing determinations: Greater Sydney Determination, Rural Valleys Determination, WAMC Determination and the Murray River to Broken Hill Pipeline Determination. Our approach for allocating direct and indirect costs is set out in our Cost Allocation Manual (CAM) which has been prepared in line with the IPART Cost Allocation Guide. Our CAM is provided as Attachment 2.

Throughout the 2017 Determination period there were a number of changes to how corporate capital expenditure was allocated to Rural Valleys:

- In 2015-16 and 2016-17, IPART allocated corporate capital expenditure based on the RAB. That is, 33% of corporate capital expenditure was allocated to Rural Valleys. This approach was approved by IPART in its 2017 Determination and extended to the value of each Rural Valley RAB.

- In 2017-18 and 2018-19 we changed the cost allocation method, as approved by IPART, by:
    - Taking the total corporate capital expenditure across the Greater Sydney, Rural Valleys and WAMC businesses and subtracting the WAMC component; and
    - Dividing the remaining corporate capital expenditure between Greater Sydney and Rural Valleys.

Under this method, the value of the RAB was, 66% to Greater Sydney, 33% to Rural Valleys. Since 2019-20, WaterNSW allocated the total cost of corporate capital projects, using salary and wages.

Regulatory cycles for each of our determinations are not aligned and the pricing issues concerning our customers will differ depending on the customer base, determination specific issues, the context and any bill impact considerations. Therefore, IPART should consider the allocation of corporate capital expenditure holistically, taking into account the Greater Sydney and WAMC determinations.

Consistent with our CAM, we allocate shared corporate capital expenditure using salary and wages (excluding lumpy, one-off capital expenditure) as an allocator. While WaterNSW explored the use total expenditure ('totex') as an allocator in the Greater Sydney review, we have not adopted this approach for Rural Valleys based on IPART not accepting this allocator for the 2020 review.

The effect of the revised proposal was to allocate to the Rural Valleys a percentage of corporate capex that is consistent with the allocation rate adopted in the 2017-21 Rural Valley Determination[35]. The proposed change to totex would have resulted in greater consistency with our overhead allocation methodology and an allocation to Rural Valleys that is better aligned with the allocations from the 2017 Determination.

4.3 Capital expenditure by category

The following sections discuss our performance in the current regulatory period for capital expenditure, providing justification for current and future period spends.

4.3.1 Capital expenditure over the current regulatory period

In developing this regulatory proposal, we have reviewed the allowances approved by IPART for the current 2017 Determination and compared it with our actual capital expenditure for the four-year period starting in 2017-18. This section will:

- Explain any key variances between the IPART allowance for Rural Valleys and actual capital expenditure, by category; and
- Highlight any significant deferment of projects, cost savings or cost increases experienced over the 2017 Determination period.

The total capital expenditure allowance set by IPART for Rural Valleys for the 2017 Determination period was $164.6 million ($2020-21). WaterNSW anticipates actual / forecast capital expenditure over the 2017 Determination period to be $234.2 million ($2020-21), $69.6 million (42%) higher than the IPART allowance over the four years.

[35] The 2017-21 IPART determination allocated corporate capex between Greater Sydney and Rural Valley determinations using the proportional value of the RAB. That is 33% of corporate capex was allocated to Rural Valleys while 67% was allocated to Greater Sydney. An allocation to WAMC was not anticipated at the 2017-21 IPART Determination.

Table 12 – Comparison of actual and IPART allowed capex across all valleys ($millions, $2020-21)

	2017-18	2018-19	2019-20	2020-21	Total
IPART 2017 Allowance	54.8	54.4	28.8	26.5	164.6
Actual/forecast	39.5	45.2	68.9	80.6	234.2
Variance ($)	-15.3	-9.2	40.1	54.1	69.6
Variance (%)	-28%	-17%	139%	204%	42%

Actual and forecast capital expenditure (user and government share) in the current regulatory period is compared to the IPART allowance by capital expenditure category in Table 13 below.

Table 13 – Actual and allowed capital expenditure in the 2017 Determination period ($000s, $2020-21) – FY20 estimates

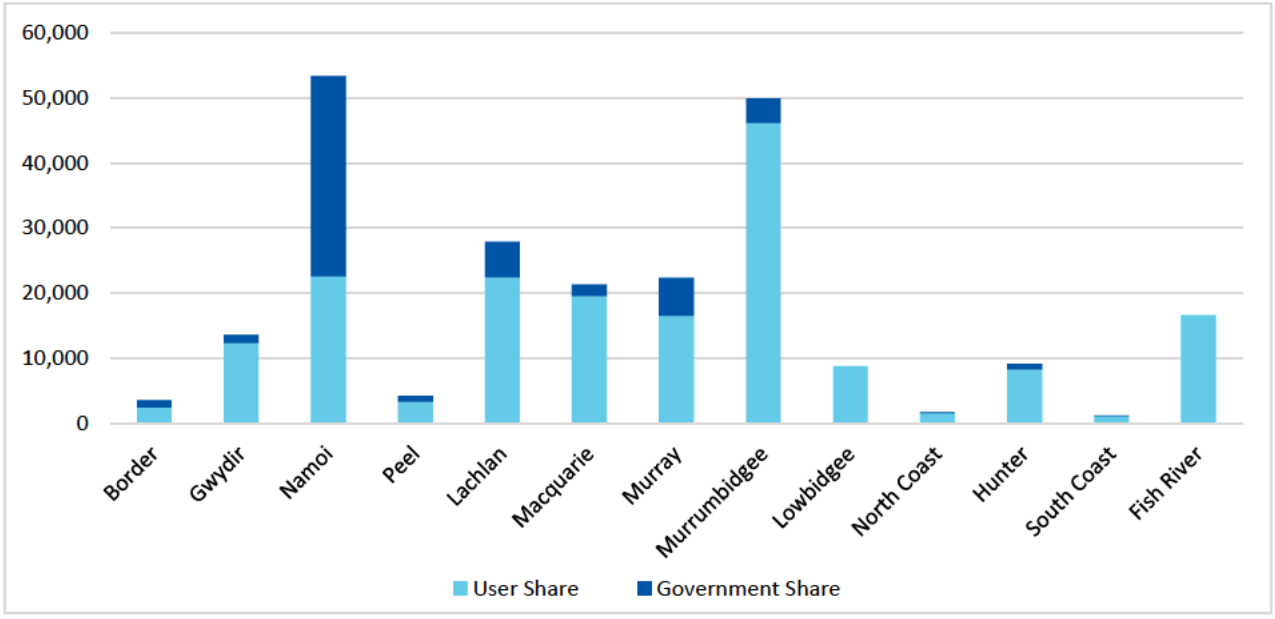
	2017-18	2018-19	2019-20	2020-21	Total
Renewals and Replacement					
Allowed	24,639.1	27,410.8	23,194.9	21,117.3	96,362.0
Actual / Estimate	15,665.2	16,689.3	24,609.3	44,577.3	101,541.2
Difference	**-8,973.8**	**-10,721.5**	**1,414.4**	**23,460.0**	**5,179.2**
Corporate Systems					
Allowed	7,778.1	9,311.0	4,867.7	5,255.5	27,212.3
Actual / Estimate	6,596.5	259.1	12,754.4	17,010.6	36,620.6
Difference	**-1,181.6**	**-9,051.8**	**7,886.7**	**11,755.1**	**9,408.3**
Environmental Planning & Protection					
Allowed	519.7	237.6	0.0	0.0	757.3
Actual / Estimate	150.5	92.3	2,713.6	491.5	3,447.9
Difference	**-369.3**	**-145.3**	**2,713.6**	**491.5**	**2,690.5**
Water Delivery & Other Operations					
Allowed	6,756.4	3,714.2	743.1	133.9	11,347.6
Actual / Estimate	26.4	10,994.2	4,852.1	903.5	16,776.2
Difference	**-6,730.0**	**7,280.0**	**4,109.0**	**769.6**	**5,428.6**
Water Quality Monitoring					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	0.0	0.0	801.0	0.0	801.0
Difference	**0.0**	**0.0**	**801.0**	**0.0**	**801.0**
Flood operations					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	0.0	0.0	0.0	64.3	64.3
Difference	**0.0**	**0.0**	**0.0**	**64.3**	64.3
Hydrometric Monitoring					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	25.7	165.7	89.5	0.0	280.9
Difference	**25.7**	**165.7**	**89.5**	**0.0**	280.9
Corrective Maintenance					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	1,510.3	325.2	325.1	180.7	**2,341.2**
Difference	**1,510.3**	**325.2**	**325.1**	**180.7**	**2,341.2**
Routine Maintenance					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate			89.7	496.6	586.3
Difference	**0.0**	**0.0**	**89.7**	**496.6**	**586.3**
Asset Management and Planning					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	4,503.0	1,087.0	2,520.3	1,097.4	9,207.7
Difference	**4,503.0**	**1,087.0**	**2,520.3**	**1,097.4**	**9,207.7**
Dam safety compliance on pre 1997 capital projects					
Allowed	15,138.1	13,754.6	0.0	0.0	28,892.7

	2017-18	2018-19	2019-20	2020-21	Total
Actual / Estimate	10,678.7	13,993.5	19,066.8	15,554.4	59,293.4
Difference	**-4,459.4**	**238.9**	**19,066.8**	**15,554.4**	**30,400.7**
Structural Support and other enhancements					
Allowed	0.0	0.0	0.0	0.0	0.0
Actual / Estimate	331.7	1,600.1	1,093.1	227.1	3,252.0
Difference	**331.7**	**1,600.1**	**1,093.1**	**227.1**	**3,252.0**
Total					
Allowed	54,831.3	54,428.2	28,805.7	26,506.6	164,571.9
Actual / Estimate	39,488.0	45,206.6	68,914.7	80,603.4	234,212.6
Difference	**-15,343.3**	**-9,221.7**	**40,109.0**	**54,096.7**	**69,640.7**

The major variances in the table above are discussed in the sections below.

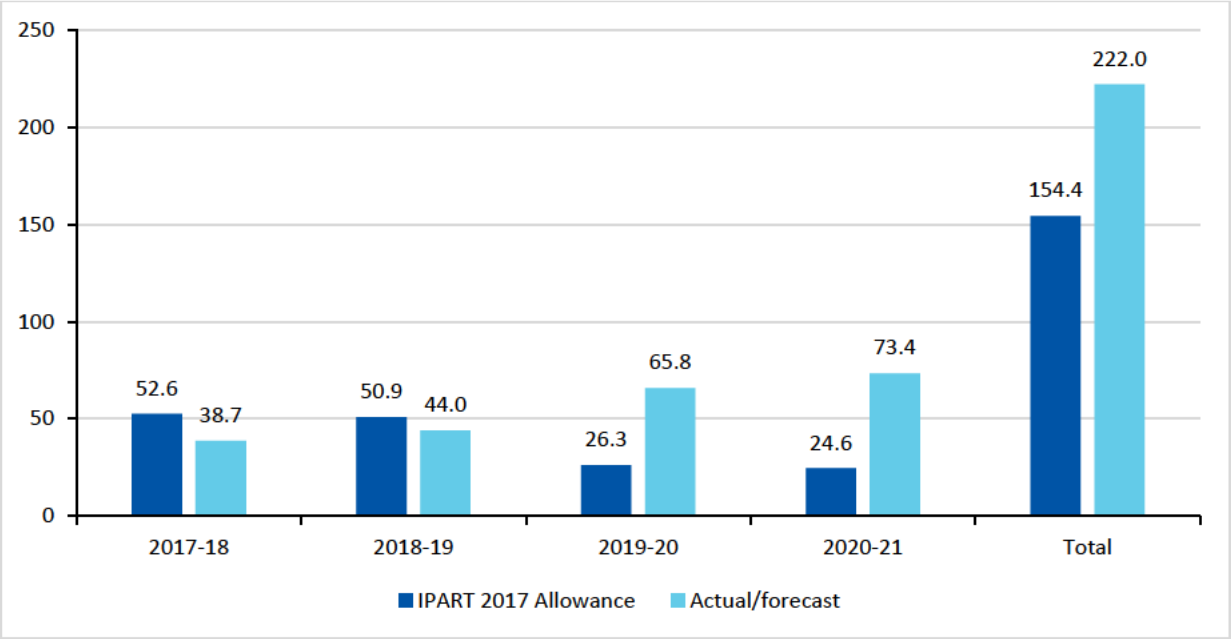
The figure below shows the allocation of actual and forecast capital expenditure in the 2017 Determination period between user and Government funding. Consistent with the IPART cost share ratios, users provide the most significant contribution to capital expenditure, with the exception of the Namoi valley due to the NSW Government's contribution to the Keepit Dam Safety Upgrade. More detail about this project is provided in Section 4.3.3.

Figure 26 - Allocation of total capital expenditure between users and Government in the 2017 Determination period ($000s, $2020-21)



The following Figure 27 compares the capital expenditure forecast and allowances from the 2017 Determination period for the MDB valleys (i.e. excludes the coastal valleys). Actual / forecast capital expenditure in the MDB valleys is $222 million ($2020-21), which is $67.6 million (44%) higher than IPART's allowances.

Figure 27 – Capital expenditure over the 2017-21 Determination period for MDB valleys – forecast and allowed ($millions, $2020-21)



Capital expenditure is primarily driven by requirements in legislation and our operating licence. In the current and upcoming determination periods, WaterNSW's capital expenditure can be largely attributed to five categories:

1. Renewal and replacement of assets;
2. Dam safety compliance;
3. Corporate systems;
4. Environmental planning and protection; and
5. Water delivery and operations

Our forecast capital expenditure in the 2021 Determination period in shown below by activity.

Table 14 - Proposed capital expenditure for the 2021 Determination period by activity ($000s, $2020-21)

	2021-22
Renewals and Replacement	19,800.3
Corporate Systems	7,872.5
Environmental Planning & Protection	3,311.6
Water Delivery & Other Operations	2,384.2
Corrective Maintenance	1,069.7
Routine Maintenance	229.2
Asset Management and Planning	1,224.4
Dam safety compliance on pre 1997 capital projects	12,299.9
Total	**48,191.9**

In the following sections we describe past capital expenditure in these categories, the reasons for any variances, and major activities/programs forecast for the 2021 Determination period.

4.3.2 Renewal and replacement of assets

Our renewal and replacement program includes capital expenditure on interventions to restore the capability of WaterNSW assets (e.g. 20 dams in the rural valleys). It comprises mostly of works on Water Infrastructure Assets using tailored service potential and condition assessment methodologies.

Operating conditions in the 2017 Determination period resulted in an underspend of $9.0 million and $10.7 million on renewal and replacements in 2017-18 and 2018-19, respectively, compared to the IPART allowance.

The underspend in 2017-18 was primarily caused by the increased planning and review activity that was required to account for the integration of new employees and assets following the merger. This was a necessary process to ensure our future expenditures are prudent, efficient and aligned to the priorities of the new WaterNSW business. It resulted in some delayed project timelines, thereby reducing capital expenditure relative to our IPART allowance.

In 2018-19, a further shift in our capital priorities occurred, as WaterNSW acted to address immediate drought related issues. In particular, a number of project management resources were shifted from 'business as usual' activities to drought related activities.

We are therefore planning an increase in renewals capital expenditure in 2020-21, 'catching up' on the delayed expenditure from 2017-18 and 2018-19. This includes asset renewals and life extension works in categories including roads, bridges and access improvements.

Overall, WaterNSW is forecasting to exceed its capital allowance for renewals by $5.2 million in the 2017 Determination period. This higher expenditure reflects our view that the historical allowance from IPART for Renewals and Replacements capital expenditure is insufficient to allow us to appropriately replace our assets and meet our regulatory and customer obligations.

4.3.3 Dam safety compliance

WaterNSW owns, operates and maintains 20 prescribed dams in the rural areas of NSW (formerly under State Water Corporation). Capital expenditure on Dam Safety Compliance incorporates programs to design and implement measures to ensure the safety compliance of our prescribed dams.

Dam Safety NSW, as the dam regulator, ensures the safety of all declared dams in NSW. They administers the legislation to ensure that any risks to public safety or environmental and economic assets are of a level that is acceptable to the community. . As the owner of prescribed Dams WaterNSW is required to adhere to the *Dam Safety Regulation 2019*.

WaterNSW has adopted a robust risk management approach, which is reflected in our Dam Safety Compliance program through application of the Dam Safety Management System (DSMS). The DSMS is designed to meet our 'duty of care' obligations to the community, manage risks to the business and ensure we operate efficiently for our customers.

Broadly, capital expenditure on dam safety compliance is driven by the following objectives:

- Ensure compliance with regulatory and legal requirements;
- Protect the public from the adverse consequences associated with a potential dam failure; and
- Provide asset stewardship to WaterNSW's dam assets, which involves ensuring the ongoing performance of our dam assets over the longer term.

2017 Determination period allowance for dam safety

During the 2017 Determination period, a significant driver of capital expenditure was work undertaken to support commencement of the *Dam Safety Regulations 2019*, in November 2019. This new regulation required WaterNSW to undertake a comprehensive review of our regulatory obligations whilst developing and implementing a change management plan to ensure compliance. Further, the operational model for dam safety was reassessed and subsequently modified. This resulted in a restructure which required a number of new staff to be integrated into the team. As it takes time to appropriately integrate new staff, in 2017-18 WaterNSW did not incur its forecast capital expenditure allowance, as several projects were delayed to allow for this adjustment.

From 2017-18 to 2018-19, there was an underspend of $4.2 million in capital expenditure attributable to construction delays in the Keepit Dam upgrade. This upgrade was originally scheduled for completion in 2018-19 but was delayed due to construction challenges and complexity. It is now scheduled for completion in 2020-21.

Despite lower spending in the first years of the current regulatory period, as review outcomes are implemented and expenditure is increasing, there is expected to be an overspend of $30.4 million in our dam safety compliance program overall. This overspend is driven primarily by capital expenditure in 2020-21 to address and reduce risk through dam safety upgrades, which is necessary under the new regulation framework which requires WaterNSW to demonstrate that 'all reasonable measures have been undertaken' to reduce risk.

Additionally, WaterNSW will incur capital expenditure on Dam Site Security Safety Studies in 2020-21. This expenditure is necessary for WaterNSW to meet our regulatory obligations, manage risks to the community and maintain our assets so that we can deliver quality services to our customers.

Dam safety capital expenditure for the 2021 Determination period

Maintaining dam safety and managing associated risks remains a priority.

In the 2021 Determination period, we anticipate that dam safety compliance will revert to a lower baseline annual amount compared to the 2017 Determination period, of approximately $12.3 million in 2021-22. This is driven by fewer dam safety upgrades scheduled during this period. The majority of forecast capital expenditure for the 2021 Determination period is attributed to Dam Safety Upgrades.

Throughout 2021-22 it is forecast that our dams will require safety upgrades in order for WaterNSW to maintain compliance with its regulatory and legal requirements. Further, under the risk management approach in our DSMS, we have allocated expenditure to address immediate but unforeseen risks, such as sudden failures to any of our dam assets.

Additional expenditure will be required for dam site security, five-yearly surveillance inspections and dam safety studies/investigations.

Finally, the new *Dam Safety Regulations 2019* includes a two year transition for compliance. It is therefore expected that some capital expenditure (e.g. dam safety studies/investigations) will be required in the 2021 Determination period in order to satisfy the new regulation requirements in line with the Dam Safety Regulations which outline that risks must be reduced so far as is reasonably practicable (SFAIRP).

In the upcoming period, we intend to do further work to gain a better understanding of the forward capital expenditure profile under the new regulations. This includes:

- Developing business risk criteria that meets new regulatory requirements;
- Determining the business position regarding the extent and timing of risk reduction measures; and
- Developing a 'Dam Safety Strategy' that includes a medium term profile of capital investment required.

4.3.4 Corporate systems

During the 2017 Determination period, our expected corporate systems capital expenditure is $0.6 million over the IPART allowance as illustrated in the table below.

Table 15 - Actual and allowed corporate capital expenditure over the 2017 Determination period (000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	Total
Actual / forecast	4,747	5,807	10,714	15,007	36,274
IPART Allowance*	13,433	12,090	4,868	5,255	35,646
Variance	-8,686	-6,283	5,846	9,752	629

*includes allowance for rewrite of the licensing system (water accounting system) which was allocated to the water delivery activity as part of the allowance and which should have been allocated to corporate systems.

Current period spend is mostly attributed to the implementation of CIMs, which is discussed in further detail below. Most of the underspend in 2017-18 and 2018-19 is due to the delay in the redevelopment of the Water Accounting System, which was deferred in the current period. This project has morphed over time to become larger in scope and has been developed into the WAVE program which we are forecasting to deliver over the next 3 years.

A significant driver of expenditure in 2016-17 and 2017-18 was the Consolidation of Information Management Systems (CIMS) Project. CIMS involved the implementation of Microsoft Dynamics 365 (software-as-a-service) for all core systems including Financial Reporting, Payroll, Human Resources Management, Billing and Customer Relationship Management, Asset Management, Project Management, Contract and Procurement Management and Risk Management, and the retirement of all current legacy systems.

CIMS has resulted in productivity gains through removing duplication, automating processes, removing manual workarounds and enabling more mobility.

During the implementation of CIMS, a number of business process changes were required in order to enhance the functionality of the system. These included process changes to address defects, drive increased innovation and ensure business units were comfortable using the new systems. These changes resulted in additional costs for the program during the current regulatory period.

As is common in implementing complex ICT programs, the implementation of CIMS has resulted in an overspend relative to the IPART allowance. The overspend can be attributed to the following factors:

- Delays in clarifying requirements or design decisions;
- Delays in entering the User Acceptance Testing phase, as when configurations were ready, the data was not available to migrate; and
- Changes in scope, which resulted in additional work effort to configure the solution to meet the changed needs.

WaterNSW's proposed ICT capital expenditure allowance, as allocated to Rural Valleys over the in the 2021 Determination period is $7.9 million. This will enable us to continue transforming our ICT environment to match the needs of our customers. This expenditure is necessary to continue transforming legacy ICT systems into a modern and fit-for-purpose architecture and improve our operating performance. A significant ICT capital outlay is forecast to renew and upgrade end of life legacy systems. Our WAVE program will significantly enhance our ability to serve our customers, providing for improvements to our customer interfaces and online licensing and transactions system (Customer, Stakeholder and Water Markets stream):

- Streamlining our delivery and operational decisions for our customer transactions (Water Delivery and Visualisation stream); and
- Enhancements to our ability to monitor and model our water system (Water Monitoring and Modelling stream).

The key objectives of the WAVE Program include:

- Service and efficiency improvement;
- Centralised management of water information;
- Consolidation of IT systems; and
- Mitigation of risks.

Further detail on our proposed ICT expenditure for the 2021 Determination period is outlined in Appendix 7.

Another significant driver of corporate (non-ICT) capital expenditure in the current regulatory period was the consolidation of WaterNSW's office locations into a single new major office 'hub' located in Parramatta. Given WaterNSW's employee base comprised ex SCA staff, ex State Water staff, ex DPI Water staff and staff who joined WaterNSW without any previous affiliation, management viewed it necessary to bring these teams together into one metropolitan Sydney location. This was done to help create a single WaterNSW "team" and contribute to the development of a high performance culture. Neither of the existing WaterNSW major locations (Sydney CBD or Penrith) was a viable site for a single WaterNSW office location due to the significant travel distances that would be required for those moving offices.

Overall this move presented an opportunity for increased productivity, arising from less inter-office travel, co-locations of teams, and overall increased interaction and collaboration across the business. It has facilitated a number of business improvements including:

- Organisational culture improvement toward a single "One WaterNSW" culture, which was considered to be particularly important with DPI Water staff joining the business; and
- Increased productivity, arising from less inter-office travel, co-locations of teams, and overall increased interaction and collaboration across the business.

The improvements achieved to date are aligned with the positive 10-year net present value relative to the 'base case' determined in the business case for office consolidation.

4.3.5 Environmental planning and protection

Environmental planning and protection is primarily related to expenditure on fishway passages and offsets. WaterNSW may be directed by NSW Fisheries to construct a fishway under section 218 of the NSW Fisheries Management Act (1994) when constructing or modifying a dam, weir or regulator.

WaterNSW is in the process of planning the construction of fishways in response to NSW Government directives in previous regulatory periods, which are 'offsets' to Dam Safety Upgrades in the Namoi, Gwydir, Macquarie and Lachlan Valleys.

Following growing customer concerns regarding funding arrangements and the escalating costs of fishway construction, the Minister for Water directed the former State Water and NSW Fisheries to suspend the Dam Safety Upgrade offset fishway program and investigate cost effective methods of fishway construction. As a result, in the 2017 Determination period minimal capital expenditure occurred on these fishway passages and offsets.

In the 2017 Determination period, WaterNSW initiated a fishway optimisation project, in which industry experts in fishways were engaged by WaterNSW. This project focused on the planning and development of alternative funding arrangements to deal with constructing fishways in 'high priority' sites whilst still appropriately covering existing obligations.

DPI Fisheries provides direct advice to WaterNSW with respect to the requirements for compliance for WaterNSW activities. These costs represent the minimum investment required to ensure we operate in a sustainable manner and are consistent with the legislative requirements outlined in the Fisheries Management Act. This cost of compliance was not included in the current allowance and therefore has been incorporated into the upcoming submission.

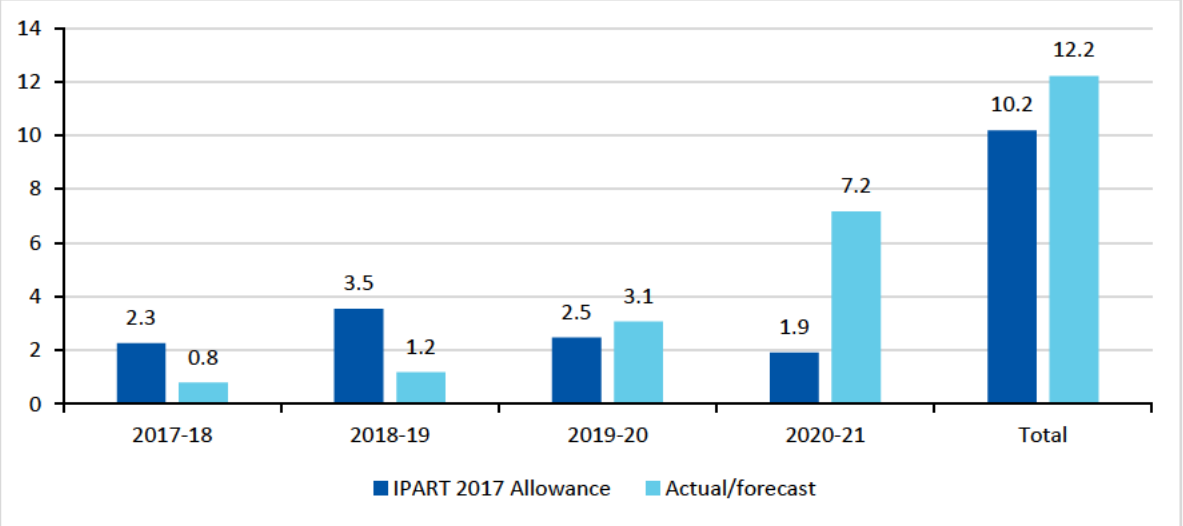
The result of this is that proposed capital expenditure in the one-year 2021 Determination period ($3.3 million) is similar than that incurred in the four years of the 2017 Determination period ($3.4 million) for this category.

4.4 Capital expenditure in the coastal valleys

In the coastal valleys, WaterNSW incurred capital expenditure comparable to the IPART capital allowance as determined under the IPART 2017 bulk water review for the 2017-18 to 2020-21 period.

Figure 28 below shows the actual capital expenditure in the coastal valleys against the IPART regulatory allowance.

Figure 28 Actuals and forecast capital expenditure in the coastal valleys against the IPART regulatory allowance 2017-18 to 2020-21 ($millions, $2020-21)



4.5 Proposed total capital expenditure by valley

The proposed capital expenditure for each of the valleys is shown in Table 16 below. These proposed amounts have been incorporated into our proposed bulk water services charges for each valley and exclude the drought-related expenditure outlined in Section 4.7 below.

Table 16 - Proposed total capital expenditure by valley for 2021-22 ($000s, $2020-21)

	2021-22	Key projects
Border	531	• Pindari facing seals replacement
Gwydir	7,356	• Renewals Provision • Copeton Fish Passage Offsets • Rural Electrical Renewals
Namoi	4,408	• Coatings Tranche 2
Peel	799	• Peel Renewals Provision • Dam Safety
Lachlan	12,175	• Renewals Provision • Lake Cargelligo Dam Safety Upgrade - Design and Delivery • Lachlan Coatings Project • Wyangala Fish Passage Offset
Macquarie	4,289	• Burrendong Fish Passage Offsets • Macquarie Renewals Provision
Murray	3,031	• Renewals Provision • Menindee Risk Assessment
Murrumbidgee	8,056	• Renewals Provision
Lowbidgee	1,078	• LOWB Renewals Provision
North Coast	271	○ NCST Renewals Provision
Hunter	1,620	○ Hunter MCP FY22 Renewals
South Coast	245	○ SCST Renewals Provision
Fish River	4,333	• Fish River Pipeline Renewals
Total	**48,192**	• Pindari facing seals replacement

Table 17 sets out the proposed user share of capital expenditure by valley and Table 18 below sets out the proposed government share of capital expenditure by valley.

Table 17 - Proposed user share of capital expenditure by valley for 2021-22 ($000s, $2020-21)

	2021-22
Border	449
Gwydir	6,068
Namoi	3,781
Peel	677
Lachlan	10,553
Macquarie	3,829
Murray	2,647
Murrumbidgee	7,395
Lowbidgee	1,078

	2021-22
North Coast	242
Hunter	1,489
South Coast	217
Fish River	4,333
Total	**42,758**

Table 18 - Proposed Government share of capital expenditure by valley for 2021-22 ($000s, $2020-21)

	2021-22
Border	83
Gwydir	1,288
Namoi	627
Peel	122
Lachlan	1,622
Macquarie	460
Murray	383
Murrumbidgee	661
Lowbidgee	0
North Coast	29
Hunter	132
South Coast	27
Fish River	0
Total	**5,434**

5. Dams and other drought-related projects

In addition to our proposed ongoing capital expenditures, WaterNSW incurs the costs of a number of dams and drought-related projects undertaken at the request of the NSW Government. The costs of these projects are 'ring fenced' in this pricing proposal and are proposed to be recovered via the Government cost share (i.e. not included in customer prices in 2021-22).

In addition to the core capital expenditures in Section 4, WaterNSW has been requested by Government in the 2016 Determination period to implement several drought relief dam projects, driven by the exceptional circumstances of the current drought. The projects currently underway include:

Wyangala Dam Wall Raising:

- The Wyangala Dam Wall Raising Project was identified in WaterNSW's 20-year Water Infrastructure Study and was selected for implementation due to its initial feasibility study and ability to provide the Lachlan Valley greater water security.
- The project has been classified as Critical State Significant Infrastructure and it will be delivered on an accelerated timeline while still meeting all the necessary planning requirements.
- Raising the Wyangala Dam wall by 10 metres would provide an extra 650GL of storage capacity in addition to the current storage level of 1,218GL and general security equivalent yield improvements of 21.05 GL per annum. It also anticipated that raising Wyangala Dam will contribute materially to achieving a 'step change' in water security, drought security and flood management capability.

Mole River Dam

- A new rockfill dam at Mole River will deliver improved water security and environmental benefits for NSW. Specifically, a new dam will have the potential to secure more water in flood sequences so that in drier times more water would be available to communities, agriculture, and the broader environment.

Dungowan Dam

- The principal objective of the Dungowan Dam project is to secure the long-term water supply security for the regional city of Tamworth. Further, the project will enable future population growth for Tamworth, which together with an already-augmented Chaffey Dam will maintain a productive level of general security reliability and water use for irrigation. Over time, this project is expected to underpin water affordability that will support broader agricultural productivity benefits for the region.

Burrendong Deep Storage Access

- This project will prolong the depletion curve for the Macquarie Valley by accessing the deep storage that sits below the level of the intake tower penstock in Burrendong Dam. Approximately 15GL of extra storage will be pumped downstream to extend the supply to Dubbo and Wellington by several months.

Drought Response – Aeration

- This project is in response to requirements under Reference of Environmental Factors approvals to mitigate impacts from drought projects in Macquarie Valley. It consists of aerating Burrendong Dam and a number of pools in the Macquarie River downstream of Warren Weir to maintain water quality for native species habitat.

Peel Drought Relief Works 2B (Dungowan temporary Weir and Pipeline)

- The objective of Dungowan Weir and Pipeline (temporary) is to rapidly implement a temporary solution to ensure a secure water supply for Tamworth until the Chaffey Dam Pipeline and Pump station (permanent) works have been completed. Dungowan temporary Weir and Pipeline will reduce transmission losses through the Peel River by diverting river flows into the existing Dungowan pipeline at Dungowan (about halfway between Chaffey dam and Tamworth).

Narromine to Nyngan pipeline

- This project aims to determine suitable and viable water supply to provide the critical human water needs of Nyngan and Cobar during periods of drought after zero flow condition in the Macquarie River. It will involve the construction and commission of a supply source and pipeline to Nyngan to meet the forecast depletion curve deadline.

Split Rock Deep Water Storage

- This project will prolong the depletion curve for the Upper Namoi Valley by accessing the deep storage that sits below the level of the intake tower penstock in Split Rock Dam. Approximately 3GL of storage sits below the intake tower penstock level. A portion of this will be pumped along the existing Barraba pipeline to Barraba and also to a truck stand for carting to Manilla.

Chaffey Dam DSA Investigation

- This project aims to prolong the depletion curve for the Peel Valley by accessing the deep storage that sits below the level of the intake tower in Chaffey Dam.

Warren Weir Raising

- The aim of the temporary drought relief works at Warren Weir is to enable supply of critical water to the towns of Nyngan and Cobar. This requires temporary barricades/structures to be installed at Warren Weir as well as at Crooked Creek and Duck Creek Regulators.

In addition to assisting with water security and supply issues associated with the drought, these projects will help to stimulate their local economies and provide jobs in the near future to aid the recovery following COVID-19.

5.1.1 Approach to the recovery dams and other drought-related project costs

WaterNSW is proposing to recover the 'net' costs of these dam projects (i.e. less any grant funding from Government) via the Government RAB for the 2021 Determination period and not through user charges.

As explained in Section 3.6, the cost share ratios, we are proposing to introduce a cost driver category to identify WaterNSW's actual and forecast cost of responding to drought. This will allow IPART to apply the rural valley cost share framework and allocate the efficient costs of drought between users and the Government.

As prolonged periods of drought are expected to become commonplace, we consider it appropriate to expand the application of the IPART cost share regime to the costs incurred by WaterNSW for the delivery and successful implementation of drought response projects initiated by Government. As drought expenditure has been incurred based on a direction from Government, we submit that it is the NSW Government, as the impactor that should contribute to the cost of the works.

Table 19 - Proposed Government share capital expenditure for dams and drought-related projects

Cost driver	Cost driver descriptions	Customer share
Drought Response	Cost incurred in relation to the delivery of works for the NSW Government's Critical Drought Initiative and other initiatives/drought projects to deliver critical infrastructure to address the prolonged risk of drought. Projects are typically initiated by Government in response to critical water shortages in regional areas. Works may be required to strengthen water supply for critical needs, industrial, irrigation and/or stock and domestic purposes. This category includes operating and capital expenses, planning costs, project management costs and overhead allocations.	0%

At the subsequent (i.e. 2022) Determination, we anticipate that there may be additional expenditures for a number of these projects, in particular the three major dam projects outlined above (i.e. Wyangala dam wall raising, Mole River dam and Dungowan dam) and that user sharing of these costs may appropriate in the 2022 Determination and beyond.

5.1.2 Drought-related capex in the 2017 and 2021 Determination periods

The capital expenditure shown in Table 19 below highlights that WaterNSW has and will continue to invest $249.5 million in drought-related projects in the 2017 Determination period and $94.5 million during the 2021 Determination period, for a total of $344 million across the two periods.

The capital expenditure is 'net' of any Government grant funding and has been included in our Government RAB roll-forward calculations when setting the opening RAB on a valley-by-valley basis for the 2021 Determination period and the annual RAB values in the 2021 Determination period used for calculating the return on capital and the return of capital (i.e. depreciation).

WaterNSW proposes to recover the 'net' costs of these dam projects from Government via the Government RAB for the 2021 Determination period and not through user charges.

The capital expenditures to date on these drought-related projects as outlined below are largely to support preliminary planning and feasibility studies.

Table 20 – Dams and drought-related capex in the 2017 Determination period ($millions, $2020-21)

	2017 Determination			Proposed	Future Period	Total
Confidential information omitted	2019-20	2020-21	Total FY20-21	2021-22	2022-23	Total FY20-23
						346.7

5.1.3 Proposed revenue requirement for dams and drought-related projects

As referenced above, we are proposing to introduce a cost driver category to identify WaterNSW's actual and forecast cost of responding to drought. This will allow IPART to apply the rural valley cost share framework and allocate the efficient costs of drought between users and the Government.

The following table provides the cost reflective total revenue requirement associated with the dams and drought-related projects. This revenue is proposed to be recovered via the Government share of IPART's cost sharing arrangements and would therefore not be included in customer charges in the 2021 Determination period. This is discussed further in Section 11.

Table 21 – Proposed revenue requirement for dams and drought-related projects ($000s, $2020-21)

Item	2020-21*	2021-22
Revenue for ring-fenced drought projects	**0**	**8,541**

* 2020-21 is the last year of the 2017 Determination period.

6. Proposed operating expenditure

*We propose an operating expenditure allowance of **$53.4 million** over the 2021 Determination period to enable WaterNSW to continue to operate and maintain our assets which are essential for the water services provided to our Rural Valley customers.*

WaterNSW is proposing an operating expenditure allowance for Rural Valleys of **$53.4 million** for the 2021 Determination period.

This forecast reflects our proposal to hold our user share revenue constant to address the current uncertainty being experienced by our customers due to drought, and now COVID-19. The additional operating expenditure will be allocated to the Government Share and as a 'deferred payment' in order to keep the user share revenue requirement constant over the 2021 Determination period.

6.1 Operating expenditure over the current regulatory period

For many of our valleys, the costs of complying with our legislative obligations and maintaining customer service standards have increased. Some of the key drivers of higher operating costs compared to the regulatory allowances over the current period include:

- Higher insurance costs, primarily due to the costs of the Risk Transfer Product premiums, which provided important fiscal certainty during recent drought conditions;
- No allowance in the current period for land tax and energy cost increases;
- Increased labour costs arising from EBA outcomes in 2018 and the associated impact on employee entitlements that were not reflected in the current regulatory allowances;
- Increased FTEs to maintain operating licence obligations and customer service standards, including additional staff required for dam safety and system operations;
- No allowance was provided for planned overtime costs;
- Marginal increases in operating costs to support a significantly higher capital program;
- Changes in cost allocation across various parts of the business;
- An operating cost allowance in the current regulatory period which was $3 million below our actual cost structure in 2016-17;
- Water management reforms resulting from a number of independent investigations into water management and compliance practices in New South Wales (e.g. the Ken Matthews Review) and
- Higher overheads being allocated to Rural Valleys due to an increase in the total overhead pool.

These factors have resulted in an increase in operating expenditure relative to IPART's allowance from the 2017 Determination, with these costs expected to continue into the 2021 Determination period. While we are proposing to lock in the revenue requirement for 2021-22 to keep prices constant for factors within our control, we fully expect underlying costs to increase for the subsequent (i.e. 2022) Determination.

As outlined in Table 22, over the 2017 Determination period we expect to spend $208.3 million in operating expenditure. This is $51.4 million (33%) above the IPART allowance of $156.9 million ($2020-21).

Table 22 – Comparison of actual and IPART allowed opex across all valleys ($millions, $2020-21)

	2017-18	2018-19	2019-20	2020-21	Total
IPART 2017 Allowance	41.2	39.4	38.8	37.5	156.9
Actual/forecast	46.1	48.9	55.2	58.0	208.3
Variance ($)	4.9	9.5	16.4	20.5	51.4
Variance (%)	12%	24%	42%	55%	33%

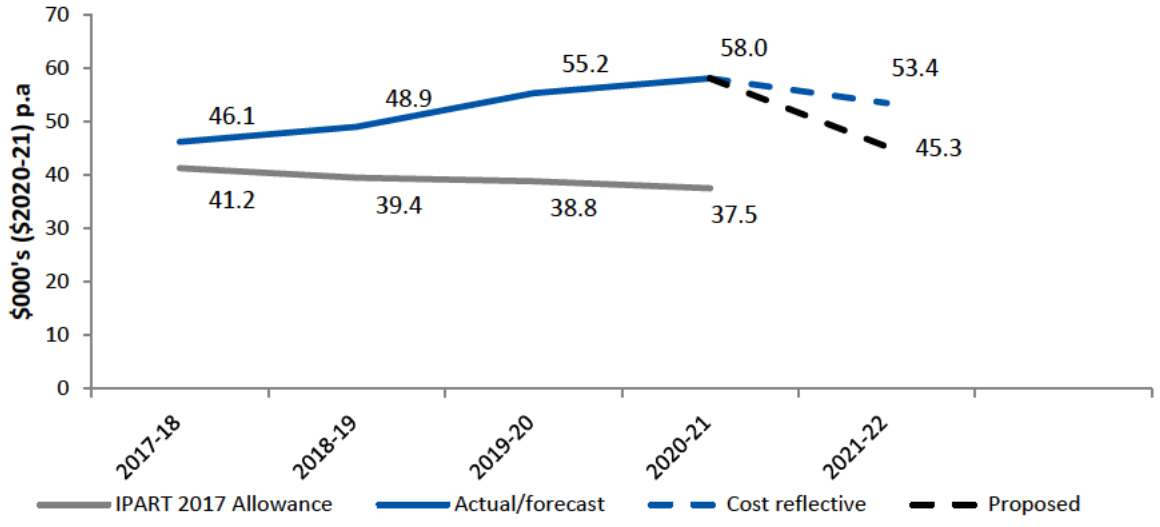
Table 23 below illustrates our actual / forecast operating expenditure over the 2017 Determination period allocated into the user and Government shares.

Table 23 – Operating expenditure over the 2017 Determination period ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	Total
User Share	42,624	46,050	52,085	54,207	194,966
Government Share	3,514	2,876	3,163	3,799	13,352
Total	46,139	48,926	55,248	58,005	208,317

Figure 29 below depicts the trend of operating expenditure into the 2021 Determination period.

Figure 29 – Allowed, actual/forecast and proposed operating expenditure ($millions, $2020-21)



WaterNSW's proposed operating expenditure of **$53.4 million** ($2020-21) for the 2021 Determination period is 3% below our forecast expenditure in 2019-20 and $1.3 million above our average actual/forecast expenditure over the four years of the current 2017 Determination period.

Our operating expenditure over the current regulatory period is discussed in detail in Section 5.4, noting both:

- Actual / forecast expenditure for the current regulatory period; and
- Proposed expenditure for the next regulatory period.

6.2 Our approach to forecasting operating expenditure

WaterNSW is proposing **$53.4 million** ($2020-21) of operating expenditure for the 2021 Determination period that is 10% below our forecast expenditure in 2019-20 and $1.3 million above our average actual/forecast expenditure over the four years of the current 2017 Determination period.

Our business forecasting method utilises a bottom up costs build up for the 2021-22 financial year taking into account anticipated changes in obligations, service delivery, additional functions, and operations. WaterNSW has been focused on establishing appropriate asset management and forecasting practices for our inherited assets and services.

Now five years into our established business, with five years of reform, integration and collection of data on our operating activities, we have significantly more confidence in our understanding of operating requirements and costs.

Using the existing user share revenue requirement as a base for setting customer charges, will reduce the potential for customer price shocks at the end of the 2021 Determination period, as the impact of higher ongoing operating costs are taken into account.

6.2.1 Approach to cost allocation

As outlined in our CAM (Attachment 1), overhead (i.e. costs that have not been directly charged to a project) is allocated evenly across all the projects covering WaterNSW's core regulatory activities and routine non-core activities, applying total expenditure on each project (capital and operating expenditure) as the allocator. In this way, net overhead is apportioned to each of WaterNSW's regulated business segments based on a mapping of projects to the respective determination.

Table 24 below sets out the annual changes to the proportion of overhead allocated to each WaterNSW business segment to 2018-19, including Rural Valleys.

Table 24 - Movement in allocated costs ($millions, $nominal)

Movement in allocated costs				
Segment	**Rural Valleys determination % (2017-18)**	**2016-17 (%)**	**2017-18 (%)**	**2018-19 (%)**
Allocation basis	55%:45%	55%:45%	TOTEX	TOTEX
Greater Sydney (%)	55%	55%	52%	58%
Rural Valleys (%)	45%	45%	37%	32%
WAMC (%)	N/A	N/A	11%	10%
Total allocated costs ($M)	43**	63	53	60

Notes: Analysis as presented in our GS Pricing Proposal (2018-19 represented year to date forecast at the time of the GS submission). Excludes Broken Hill Pipeline and non-core/regulated expenditure in FY18, FY19 and future years.[36]
* Approximately $31 million per annum on average, or $124 million in total, over the four years of the 2020-24 Determination period.
**includes an allocation to MDBA RV which is not regulated by the IPART Determination
Source: WaterNSW analysis

[36] In FY17 the overhead 45/55 split between Greater Sydney and Rural Valleys (as approved by IPART) was applied to Rural Valley and Greater Sydney expenditure including both regulated expenditure and non-regulated/core plus expenditure. This resulted in $32.5 million in core overhead allocated to Greater Sydney and $23.6M of core overhead allocated to Rural Valley. The balance of $6.8 million was allocated to non-core/non-price regulated RV and Greater Sydney functions such as MDBA constructing authority expenditure. In FY17 WAMC did not attract corporate overhead as WAMC corporate costs were ring fenced until WAMC functions and staff were fully integrated into WaterNSW's organisational structure.

WaterNSW has undertaken a focussed effort to improve the reporting of costs to individual projects (i.e. direct costs). This has resulted in the pool of overheads allocated to Rural Valleys reducing substantially since 2016-17, thereby improving the accuracy of our reporting at the project level.

We also note that offsetting the reduction in the portion of corporate costs allocated to Rural Valleys is an underlying increase in corporate costs. This has been driven by the fact that as part of the transfer of WAMC functions to WaterNSW in 2016, we were provided with insufficient allowance for corporate ICT systems, thereby placing additional pressure on our ability to reduce costs.

6.2.2 Accounting policies

We have applied our internal accounting policies to identify the forecast expenditures that are related to capital expenditure and those expenditures that should be expensed. Our capitalisation policy, as updated from time to time, sets out the criteria determining whether an asset is created and the materiality thresholds to assess whether an asset should be capitalised or expensed.

Appendix 6 provides further detail on our capitalisation policy.

6.3 Operating expenditure by category and valley

6.3.1 Overview of key expenditure categories

The following sections discuss our performance in the current regulatory period for operating expenditure, providing justification for the current and future periods.

We present our operating expenditure according to the following key expenditure categories:

- Asset Management Planning and Maintenance;
- Water Delivery and Other Operations;
- Direct Insurances;
- Hydrometric and Water Quality Monitoring;
- Dam Safety Compliance;
- Customer Support, Compliance and Other; and
- Environmental Planning, Protection and Delivery.

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

- Gross operating expenditure by key expenditure categories ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Asset Management Planning and Maintenance					
Routine Maintenance	15,190.8	16,133.1	19,186.6	17,171.8	16,891.9
Corrective Maintenance	3,745.7	3,707.6	4,722.4	4,184.8	4,108.4
Asset management planning	1,403.7	545.9	166.5	2,780.2	2,176.0

	2017-18	2018-19	2019-20	2020-21	2021-22
Renewal and Replacement	959.1	147.0	60.7	45.4	25.1
Total	**21,299.2**	**20,533.7**	**24,136.2**	**24,182.2**	**23,201.4**
Water Delivery and Other Operations					
Water Delivery and Other Operations	6,163.8	6,533.4	8,256.1	9,641.6	9,067.6
Flood Operations	299.1	383.0	6.3	1,000.3	920.9
Total	**6,462.9**	**6,916.4**	**8,262.4**	**10,641.9**	**9,988.5**
Direct Insurances					
Total	**2,663.3**	**6,402.2**	**7,294.1**	**5,937.1**	**3,622.1**
Hydrometric and Water Quality Monitoring					
Hydrometric Monitoring	6,669.9	5,790.4	5,445.2	4,334.9	4,214.5
Water Quality Monitoring	438.8	1,652.9	1,065.7	829.5	812.9
Total	**7,108.7**	**7,443.3**	**6,510.9**	**5,164.4**	**5,027.4**
Dam Safety Compliance					
Total	**4,179.5**	**3,255.7**	**4,201.6**	**4,426.8**	**4,128.4**
Customer Support, Compliance and Other					
Customer Support	511.7	577.5	832.9	2,131.2	2,095.4
Customer Billing	607.5	1,084.4	551.3	591.6	588.8
Metering and Compliance*	2,770.3	2,467.7	1,893.2	2,023.1	2,067.1
New Metering and Compliance	70.6	8.0	6.8	0.0	0.0
Corporate Systems	348.0	0.0	0.0	0.0	0.0
Internal	18.3	119.7	1,441.3	2,118.7	2,054.2
Structural and other enhancements	0.0	2.7	2.2	0.0	0.0
Total	**4,326.4**	**4,260.1**	**4,727.7**	**6,864.7**	**6,805.5**
Environmental Planning, Protection and Delivery					
Environmental Planning and Protection	13.7	28.0	82.8	694.6	535.9
Environmental Delivery	85.0	86.3	32.1	93.6	78.0
Total	98.7	114.4	114.9	788.1	613.9
Grand Total	**46,138.8**	**48,925.8**	**55,247.7**	**58,005.2**	**53,387.0**
User share	42,624.3	46,050.1	52,084.7	54,206.6	50,000.1
User share less Efficiency dividend	**42,624.3**	**46,050.1**	**52,084.7**	**54,206.6**	**41,869.9**

The compliance activities under the 'metering and compliance' IPART activity code does not include compliance functions undertaken by NRAR under the Natural Resources Act NSW 2017, such as monitoring, enforcement, inspections and auditing. It refers to activities that were undertaken by the former State Water that were typically referred to as 'compliance' activities' but are more accurately described as account management and water take assessment activities post the formation of NRAR.

These include activities include customer water ordering, customer water accounting management, reporting, meter reading, system management and usage apportionment, licensing issues resolution.

The additional cost of non-urban metering has not been included in the table above under the 'new metering and compliance' activity code (e.g. reported as nil on an indicative basis). This additional cost of reform will be provided to IPART as part of a supplementary submission in December 2020.

6.3.2 Operating expenditure by valley

The following tables show operating expenditure for the current and future period by valley according to gross expenditure (total user and government share), user share and government share.

Table 25 - Gross operating expenditure by valley for 2021-22 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Border	1,230.8	1,341.1	1,371.8	1,709.3	1,606.8
Gwydir	3,820.2	4,768.3	5,086.6	5,173.8	5,067.9
Namoi	4,589.6	4,721.6	5,108.9	5,972.4	5,042.9
Peel	1,238.8	1,128.2	1,679.6	1,387.1	1,366.1
Lachlan	5,692.5	6,294.3	7,542.0	7,611.9	7,423.6
Macquarie	4,890.6	6,174.4	7,059.6	6,842.9	6,282.0
Murray	3,785.6	3,659.8	4,629.1	5,338.4	4,137.2
Murrumbidgee	8,911.4	8,814.9	10,479.6	10,313.4	8,945.1
Lowbidgee	536.0	430.9	569.1	914.9	966.6
North Coast	1,024.3	924.0	1,070.1	1,108.0	1,100.0
Hunter	4,455.8	4,421.1	4,724.8	5,352.1	4,946.7
South Coast	749.8	776.2	838.7	1,116.1	1,075.3
Fish River	5,213.7	5,470.9	5,087.9	5,164.8	5,426.8
Total	**46,138.8**	**48,925.8**	**55,247.7**	**58,005.2**	**53,387.0**

Table 26 - User share of operating expenditure by valley for 2021-22 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Border	1,098.2	1,230.8	1,293.1	1,606.3	1,525.3
Gwydir	3,486.5	4,512.6	4,850.2	4,831.3	4,696.6
Namoi	4,181.5	4,408.9	4,841.9	5,465.5	4,620.5
Peel	1,091.1	1,008.2	1,521.5	1,266.2	1,268.8
Lachlan	5,190.7	5,782.6	6,998.2	7,009.3	6,864.9
Macquarie	4,420.5	5,769.0	6,531.5	6,356.4	5,806.2
Murray	3,615.7	3,527.6	4,306.8	5,065.3	3,893.4
Murrumbidgee	8,200.4	8,345.8	9,929.6	9,590.3	8,347.9
Lowbidgee	536.0	430.9	569.1	914.9	966.6
North Coast	889.2	807.4	999.8	1,008.7	1,014.7
Hunter	4,017.9	4,053.6	4,387.1	4,912.2	4,565.8
South Coast	682.9	701.7	767.8	1,015.4	1,002.6
Fish River	5,213.7	5,470.9	5,087.9	5,164.8	5,426.8
Total	**42,624.3**	**46,050.1**	**52,084.7**	**54,206.6**	**50,000.1**

Table 27 - Government share of operating expenditure by valley for 2021-22 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Border	132.6	110.3	78.7	102.9	81.6
Gwydir	333.7	255.7	236.3	342.5	371.3
Namoi	408.1	312.7	267.1	506.9	422.4
Peel	147.6	120.0	158.1	120.8	97.3
Lachlan	501.8	511.7	543.8	602.7	558.6
Macquarie	470.1	405.4	528.0	486.5	475.9
Murray	169.9	132.2	322.3	273.2	243.9
Murrumbidgee	711.0	469.1	550.0	723.1	597.2
Lowbidgee	0.0	0.0	0.0	0.0	0.0
North Coast	135.1	116.6	70.2	99.3	85.3
Hunter	437.9	367.4	337.6	439.9	380.9
South Coast	66.8	74.6	70.9	100.7	72.7
Fish River	0.0	0.0	0.0	0.0	0.0
Total	**3,514.5**	**2,875.7**	**3,163.0**	**3,798.6**	**3,387.0**

6.3.3 Operating expenditure by category

The following sections set out a description of each of the main operating expenditure categories, our current period expenditure and the basis of our proposed expenditure for each category.

Asset strategy

This section provides an overview of the Asset Strategy function and team within WaterNSW.

Over the past few years, the Asset Strategy team in WaterNSW has undertaken analysis and consultation with stakeholders throughout the State to determine the levels of service in terms of security, reliability, flow utilisation and water security that the vast majority of customers in regional and rural areas expect. This includes the 20-year strategic study, but also State infrastructure studies.

Taken together, these seminal pieces have provided a sound analytical and evidence-informed basis to identify priority areas and appropriate infrastructure solutions to meet defined levels of service and broader expectations. Major projects coming out of these studies which require ongoing support from the strategic asset planning team include:

- Macquarie – Wyangala Dam, Culcairn – Lake Rowlands Pipeline;
- Peel River – Dungowan Dam;
- Mole River Dam;
- Western Weirs;
- Burrendong Deepwater Access, Mid-Macquarie reregulating storage, and
- Lostock to Glennies Creek Dams pipeline in the Hunter

The three major infrastructure projects, known as the '3 Dams', require advice and support to the asset delivery team in a number of areas, including the concept design processes for Peel River - Dungowan Dam. Other resources are required to undertake similar work to address the Mole River and Wyangala dam needs.

Resources from the Asset Strategy also undertake key works on the Western Weirs program developing the Strategic Business Case for this project.

Supporting local regional and rural communities in drought conditions, the Strategic Asset Planning team continues to:

- Monitor water supplies for critical human needs in drought affected areas; and
- Advise on how to access alternative supplies of water for critical human needs.

Some examples include:

- **Peel River** - a temporary approach to support Tamworth in the short term;
- **Namoi River** - input re split rock in terms of whether we are doing deep water access or not. The issue is that there is currently two years supply with deep water access or less than 1 year with current losses;
- **Upper Macquarie** - Bathurst, Oberon and Lithgow communities are at risk. The Team's Macquarie Drought Relief Strategy is identifying short and long term options and recommending options to Government;
- **Lower Macquarie** - Nyngan Cobar mines require access to water – Where the new flows have removed the drought requirement the Macquarie Drought Relief Strategy and the ongoing studies will clarify what is possible to address this issue; and
- **Murrumbidgee and Hunter systems** - will require work as drought persists and water supplies for critical human needs are at risk. In these systems the team will need to advise DPIEW on what dam restriction levels will be needed to ensure urban water supplies.

The Asset Strategy team provides input to regulatory reform processes from the strategic asset planning perspective. For the upcoming 12 – 24 months the Government is proceeding with the development of a number of regional water strategies. WaterNSW's asset planning input is critical to these processes so that the strategies enable appropriate water solutions to be implemented. Following completion of the regional water strategies the team will also be required to contribute to amendments to various water sharing plans and other similar instruments.

The team continues to provide advice and input to the DPIE-W and other authorities on Sustainable Diversion Limit projects as required under the Murray Darling Basin Plan. These Sustainable Diversion Limit projects include the following projects where there is some uncertainty whether or not they will continue:

- **Yanco 1&2**
- **Menindee Lakes**
- **Perricoota escape with MIL in Murray**

  There is early work being undertaken that may result in considerable resources moving forward; and
- **Lachlan Plans**

  In the Lachlan valley, there are plans to build a transport hub at Parkes/Forbes.

Finally, the WaterNSW Asset Strategy team provides input and advice on a range of policy, planning and asset matters as required from time to time.

Asset Management, Planning and Maintenance

Overview of our Asset Management function

This section presents an overview of our asset management function, providing context for the following sections discussing the expenditure categories of asset management planning, asset renewal and replacement, and maintenance (routine and corrective).

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 Asset Management. The WaterNSW Operating Licence requires that the organisation maintain a management system for carrying out its authorised functions consistent with ISO 55001. WaterNSW is committed to maintaining an AMS that supports a structured, best practice approach to managing the lifecycle of assets, to deliver value to customers and support business objectives, in accordance with ISO55001. Since certification in 2017, WaterNSW has undergone a comprehensive continuous improvement plan to improve the AMS and underlying technology systems (see Box 2 below).

ISO55001 requires the organisation to have systems and processes in place that ensure that asset management is optimised while meeting organisational objectives including levels of service, safety and regulatory requirements. This requires a definition of asset related needs as an interpretation of organisational needs.

The AMS specifies how WaterNSW will deliver the appropriate level of service from its assets, providing a structured and systemic lifecycle approach to optimise value from assets to achieve organisational objectives. 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.

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 and meeting organisational objectives. Our Asset Management Policy, another part of the AMS, is directed at meeting our primary objectives and regulatory commitments as set out in the WaterNSW Act.

Box 2 Improvements to program planning and measurement through the AMS

On 10 January 2017, WaterNSW's AMS received ISO55001 certification, following a series of external audits in line with its operating licence requirements. Subsequent to the certification WaterNSW developed a comprehensive continuous improvement plan, and:

- Maintained certification in 2017 and 2018 through the successful completion of a number of surveillance audits by the certifying body;
- Improved the AMS to support its evolving business requirements through a revised Asset Management Policy, Strategic Asset Management Plan and Asset Management Objectives;
- Implemented measures to ensure consistency and alignment with WaterNSW's 2018-2021 Corporate Strategic Plan; and
- In addition to the external audits, WaterNSW completed internal system assurance audits on its AMS as well as process health audits of key AMS processes in 2018.
- In 2019 the WaterNSW AMS was re-certified to ISO55001 for a further 3 years with no nonconformances identified.

In 2019, WaterNSW replaced and consolidated its legacy administrative systems with CIMS based on commercial enterprise resource planning (ERP) technology. In parallel, we also carried out a comprehensive review and implemented significant improvements to its asset hierarchies and maintenance plans. This was done to ensure that the asset management system (AMS) is fully implemented in accordance with WaterNSW's operating licence requirements.

The implementation of a consolidated computerised maintenance management system (CMMS) as a component of CIMS enabled the replacement of legacy spreadsheets with more modern and comprehensive asset planning tools and planning and prioritisation software. WaterNSW expanded and improved upon the quality of its asset

database. We also identified and sought to address any data inconsistencies between the AMS and its program of works.

As the consolidated CIMS matures, WaterNSW will continue to pursue opportunities to make the AMS more robust and comprehensive through a combination of refining processes and procedures and improving upon the quality of our asset data and analytical capabilities. WaterNSW is committed to ensuring that the AMS maintains ISO certification in line with acceptable industry standards in accordance with the WaterNSW's operating licence.

Asset management planning expenditures

This section discusses our expenditure on asset management planning.

The asset management planning process is designed to reduce the life-cycle costs of assets while maximising asset performance and reducing risk to 'as low as reasonably practicable'. The process involves identifying solutions to address current risks from which options are developed and evaluated based on asset condition and capability information obtained from maintenance outcomes and our periodic specialist auditing program.

Asset management planning expenditure for Rural Valleys is incurred in:

- Assessing the performance of the asset portfolio and AMS in consideration of relevant industry standards and benchmarks;
- Determining the appropriate balance between routine and corrective maintenance based on established industry approaches and reliability analyses; and
- Scheduling maintenance in-field.

Our expenditure on Asset Management Planning over the 2017 Determination period is forecast to be in line with IPART's allowance. WaterNSW proposes that the annual allowance for the 2021 Determination period for Asset Management Planning should be set to reflect our 2018-19 actual expenditure on this category, in real terms.

Asset renewal and replacement

This section discusses our expenditure on asset renewal and replacement.

WaterNSW's asset replacement and renewal program is informed by modelling of appropriate levels of investment, to offset asset consumption. 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; and
- 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.

Our expenditure on Asset Renewal and Replacement in the current regulatory period is forecast to be in line with IPART's allowance. WaterNSW proposes that the annual allowance for the

2021 Determination period for Asset Renewal and Replacement should be set equal to our 2018-19 actual expenditure on this category, in real terms.

Routine and corrective maintenance

This section discusses our expenditure on routine and corrective maintenance.

Corrective maintenance refers to maintenance to correct identified defects of the assets, often identified via the performance of routine maintenance tasks, which provide services to our customers and other water users. Routine maintenance includes planned or condition-based maintenance of these assets.

The intent of our 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 to undertake service routines that act to arrest the onset of deterioration, implement minor repairs and adjustments that address symptoms that could progress to a failure, to optimise the life-cycle costs, while taking into account work, health and safety requirements and maintenance audit recommendations.

The maintenance function at WaterNSW is conducted within the framework provided by the AMS, described above, and is defined in our maintenance processes, which aim 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; and
- Assets are maintained to:
    - Optimise levels of service and life cycle costs
    - Acceptable levels of risk
    - Minimise breakdown maintenance
    - Optimise maintenance costs.

The maintenance works program is delivered using a combination of our internal workforce, external suppliers, and contractors to ensure that efficient and lowest sustainable cost activities, projects and work program resources are maintained over the long-term.

Activities are split between routine and corrective maintenance. Routine maintenance activities are designed to prevent assets from failing, and include both servicing and inspection tasks. Inspections driven by the routine maintenance plan inform our corrective maintenance regime. Where we identify that equipment has failed or is in poor condition, we initiate a proposal to undertake corrective maintenance.

Current Determination period expenditure

WaterNSW is forecast to spend $84 million on routine and corrective maintenance over the 2017 Determination period, which is $33 million (or 66%) higher than the IPART allowance.

Table 28 - Routine and corrective maintenance expenditure, actual and allowance, 2017-21 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Allowance for routine and corrective maintenance	13,498.7	12,551.9	12,533.1	12,168.5	N/A
Actual expenditure for routine and corrective maintenance	18,936.4	19,840.7	23,909.0	21,356.5	21,000.3
Difference	5,437.8	7,288.8	11,375.9	9,188.0	N/A
Difference (%)	40%	58%	91%	76%	N/A

WaterNSW has reflected on the approved allowance for maintenance in the current regulatory period, and our experience in operations maintenance over the period. We have determined that the forecasts developed in 2016 for our regulatory submission were below the costs required for us to meet our regulatory obligations and maintain our assets.

We consider that our current balance of routine and corrective maintenance is appropriate to avoid costly asset failure. Our asset management teams use common and accepted industry methods aimed at achieving the optimal balance between routine and corrective maintenance, ensuring efficient expenditure on routine maintenance. Underspending on routine maintenance inevitably leads to a greater emphasis on corrective work, which is more expensive, timely and hampers service delivery to customers. Accordingly, WaterNSW continuously undertakes asset condition assessments via the routine maintenance program, with maintenance workers gathering information to establish the condition of the asset each time they complete a maintenance task.

WaterNSW's routine maintenance activities require approximately 144,000 labour hours per annum, and a further 36,000 hours is required for corrective maintenance work (based on a target balance of 80% routine maintenance and 20% corrective maintenance). In total, and accounting for a direct project utilisation rate of 80%, this amounts to a labour input for routine and corrective maintenance of about 225,000 hours.

Further, WaterNSW considers that if we do not undertake a comprehensive maintenance program with an appropriate mix of routine and corrective maintenance activities, our assets will fail, with the following consequences:

- We will not be able to fulfil our regulatory requirements; and
- We will not be able to deliver services at expected standards to our customers.

For example, a significant component of our routine maintenance plan is dam safety surveillance inspections and instrument readings. We have a statutory requirement to carry out dam surveillance inspections, and about 42,000 hours, or 30% of the routine maintenance plan, is safety surveillance and instrumentation work.

Allowance for the 2021 Determination period

The operating expenditure allowances for the current period are not sufficient to maintain our assets going forward. WaterNSW also notes that during its review of our proposal for the current regulatory period, IPART's consultant highlighted that we had developed operating expenditure forecasts that were too low and overly ambitious.[37]

WaterNSW forecasts our actual maintenance costs will remain stable at approximately $21 million per annum over the next regulatory period.

[37] https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-legislative-requirements-water-bu k-water-review-of-prices-for-waternsws-rural-bu k-water-services-from-1-july-2017-formerly-state-water-corporation/consultant-supplementary-report-by-aither-%e2%80%93-waternsw-expenditure-review.pdf

Water Delivery and Other Operations

This section discusses WaterNSW's activities and expenditure classified as Water Delivery and Operations and Flood Operations.

Water Delivery and Operations

WaterNSW is responsible for the management and delivery of approximately 4,100 GL of water per year on average[38], to over 6,000 customers, across nine valleys in the MDB, 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.

Water delivery expenditure largely consists of salary costs. There are 18 staff across our Rural Valleys who obtain hydrometric network data and customer orders to inform the scheduling of dam releases. It also includes labour for maintenance services, which involve on site recording of dam levels. Our operators use complex river models in each of the valleys to manage releases from storages, to ensure flows in the rivers meet the requirements of our customers and achieve the environmental objectives set out in Water Sharing Plans ("**WSPs**") and works approvals.

WaterNSW is forecast to incur $32.3 million for water delivery and operations activities in the 2017-21 period, which is $4.5 million (or 16%) higher than the IPART allowance.

Table 29 – Water delivery and operations expenditure, actual and allowance, 2017-21 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Allowance for water delivery and operations	7,604.2	6,969.0	6,787.1	6,451.7	N/A
Actual expenditure for water delivery and operations (including flood operations)	6,462.9	6,916.4	8,262.4	10,641.9	9,988.5
Difference	-1,141.2	-52.6	1,475.3	4,190.2	N/A
Difference (%)	-15%	-1%	22%	65%	N/A

While we have incurred costs for water delivery that are approximately in line with, or below, the IPART allowance for the 2017 Determination period, WaterNSW expects water delivery costs to increase going forward. Following engagement with our customers on their water delivery needs, WaterNSW intends on seeking full cost recovery of our long term sustainable costs at the 2022 Determination.

Flood operations

Our flood operations expenditure is associated with labour costs and staff training for flood emergency procedures, to ensure the consistently safe operation of dams. It also includes management of spillways for overflowing dams, and operations activities in the event of a flood.

WaterNSW expects to incur $1.7 million for flood operations in the 2017-21 period. WaterNSW did not propose a separate allowance for flood operations in our Rural Valleys regulatory proposal for the current period.

[38] 20 year average

We note that, in reviewing our regulatory proposal for the current period, IPART's consultant stated that WaterNSW's exclusion of an allowance for flood operations was unrealistic, noting that an actuarial assessment of risk of flooding would determine a non-zero value.[39] In addition, we note that the staff training costs in this category are incurred by WaterNSW, regardless of flood activity.

Direct insurances

Insurances for Rural Valleys are comprised of direct costs and overheads.

Direct insurance costs are made up of two components; a risk transfer product (RTP) and Treasury Managed Fund (TMF) payments:

- Our proposal to IPART for the current regulatory period included an RTP, which is a mechanism to transfer some of the risk associated with revenue volatility to a third party, via the commercial insurance market. The RTP as initially proposed, was a simple swap arrangement whereby two-thirds of WaterNSW's usage revenue (in valleys with a 40:60 or 60:40 fixed and variable structure) is effectively swapped for a fixed revenue stream. However, this product has morphed into an insurance product which effectively insures WaterNSW with the downside risk for a fixed premium.
- TMF payments for self-insurance, which include the following categories: property assets, liability, workers compensation and motor vehicles.

Overhead insurance costs reflect insurance costs across the business that have been allocated to Rural Valleys through our approved CAM (see Attachment 2).

2017 Determination period expenditure on direct insurances

WaterNSW incurred $22.3 million in direct insurance costs over the 2017-21 period, which was $16.7 million higher than the IPART allowance for Rural Valleys of $5.5 million. In 2018-19, direct insurance costs were $6.4 million.

The primary drivers of these higher insurance costs include:

- The commercial market price for our RTP exceeding the estimate underpinning IPART's allowance for the current period ($2.315 million compared to $1.3 million)
- The direct allocation of TMF payments of approximately $1.4 million associated with the Rural Valleys business, which was previously treated as an overhead and allocated more broadly across WaterNSW's regulated businesses

Table 30 - Direct insurances expenditure, actual and allowance, 2017-21 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Allowance for direct insurances (Volatility allowance)	1,411.3	1,378.7	1,378.7	1,378.7	N/A
Actual expenditure for direct insurances	2,663.3	6,402.2	7,294.1	5,937.1	3,622.1
Difference	1,252.0	5,023.5	5,915.3	4,558.4	N/A
Difference (%)	89%	364%	429%	331%	N/A

The following table presents a breakdown of our direct insurance costs over the 2017 Determination period.

[39] Aither, WaterNSW Rural Bulk Water Services Expenditure Review, February 2017, page 86

Table 31 - Direct insurances costs for Rural Valleys, 2016-17 to 2018-19

	2016-17	2017-18	2018-19
RTP insurance costs	-	-	$2,315,000
TMF payments insurance costs	$13,732	$1,375,069	$1,450,057
Total	$13,732	$1,375,069	$3,765,057

Risk transfer product

The introduction of the RTP was in response to IPART's 2016 decision to discontinue an Unders and Overs Mechanism which had previously provided protection for WaterNSW against revenue volatility. In its final decision for the current regulatory period, IPART noted:

> 'WaterNSW's costs are largely fixed, whereas around 60% of its revenue in most valleys *is raised through its usage charges. This difference between its cost structure and its tariff structure, combined with the difficulty in accurately forecasting water extractions, means that WaterNSW is exposed to revenue volatility and hence some financial risk.'*[40]

IPART's allowance of $1.3 million ($1.4 million in $2020-21) for our RTP was based on an initial market quote provided to WaterNSW during the review period. Following the initial quote, WaterNSW entered into extended negotiations with a commercial insurance provider to design the RTP, a novel product for which there was no comparable 'off the shelf' product available.

As part of this process, the initial quote of $1.3 million was increased to $2.315 million at the time of signing in 2017, which has resulted in consistently higher costs above the allowance to secure the RTP. The cost of the RTP was then incurred from 2018-19, representing the large increase in direct insurance costs in that year.

We note that in its 2010 determination for WaterNSW (formerly State Water), IPART also provided an allowance for volatility of $2.2 million in 2009-10 dollars[41]. The $2.315 million commercial price for the RTP is therefore aligned with previous IPART estimates.

TMF self insurance

TMF self insurance payments are set by iCare at the start of each year based on non-profit cost recovery applied across the NSW Government corporations. TMF payments were largely allocated into overhead costs in 2016-17. WaterNSW began allocating these insurance costs directly into the relevant determinations in 2017-18.

Every three years, WaterNSW benchmarks our TMF cover against comparable benchmarks in the commercial insurance market. The latest benchmarking exercise conducted by Marsh on our TMF payments did not find any comparable covers offered in the commercial market, concluding that the offer under the TMF represents the most efficient and best value for money market offer.[42]

Workers compensation insurance is allocated based on timesheet data and TMF payments are allocated based on the proportional value of the asset replacement value in each of the determinations.

Allowance for the 2021 Determination period

The current RTP contract expires in 2022. WaterNSW expects that the insurer will seek to recover some of its losses over the initial years of this product through higher premiums going

[40] IPART, WaterNSW - Review of prices for rural bulk water services from 1 July 2017 to 30 June 2021, p. 91.
[41] See IPART's Review of bulk water charges for State Water Corporation From 1 July 2010 to 30 June 2014 Water — Final Report, June 2010. Table 1.7, page 11.
[42] See Marsh & McLennan Companies Inc. Insurance Program Review and Benchmark Report, April 2019

forward. Despite this, WaterNSW is not proposing to recover higher RTP costs for the next regulatory period, consistent with our overall approach to maintain operating expenditure at 2019 actual costs. Additionally, the new contract will most likely be extended for a longer time period than the initial 3-year contract to reduce the insurer's risk.

WaterNSW's TMF cover costs have been relatively stable, and are not expected to change over the next regulatory period. As such, the actual costs incurred in 2019 are a reasonable basis for the 2021 determination period.

Hydrometric and Water Quality Monitoring

WaterNSW carries out hydrometric monitoring, or river gauging and data management services, to enable the delivery of bulk water to customers. WaterNSW monitors the availability and condition of surface water by measuring water level, stream flow, rainfall and key water quality indicators.

WaterNSW also operates an extensive water quality and quantity monitoring program to track how required standards are being met. 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; and
- 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; and
- Drinking Water Quality.

Current Determination period expenditure

WaterNSW forecasts a total spend of $26.2 million on hydrometric and water quality monitoring over the 2017-21 period, about $4.3 million (or 20%) higher than the IPART allowance.

In 2018-19, WaterNSW incurred $7.4 million in operating costs for hydrometric monitoring and water quality monitoring. This includes:

- $5.8 million in hydrometric monitoring; and
- $1.7 million in water quality monitoring.

The primary reasons for this overspend are:

- The transfer of assets and monitoring function from DPIE-Water implying that the allowance is not reflective of current costs;

- An increased focus on Water Quality, particularly drinking water compliance, and algae; and
- Drought increasing the need for water monitoring.

Table 32 – Hydrometric and water quality monitoring expenditure, actual / forecast and allowance, 2017-18 to 2021-22 ($000s, $2020-21)

	2017-18	2018-19	2019-20	2020-21	2021-22
Allowance for hydrometric and water quality monitoring	5,512.3	5,471.2	5,471.2	5,455.1	N/A
Actual / forecast expenditure for hydrometric and water quality monitoring	7,108.7	7,443.3	6,510.9	5,164.4	5,027.4
Difference	1,596.4	1,972.2	1,039.7	-290.7	N/A
Difference (%)	29%	36%	19%	-5%	N/A

The IPART allowance for water quality and hydrometric services over the 2017 Determination period was not cost reflective, and was insufficient to enable us to deliver these services in accordance with our licence.

Hydrometric monitoring services were previously conducted by DPIE-Water, and the assets were owned by DPIE-Water. WaterNSW paid for DPIE-Water's services on a fee-for-service basis. These fees were specified in a 2012 Service Level Agreement (SLA) between DPIE-Water and WaterNSW (formerly State Water) for the provision of hydrometric services for bulk water delivery. The 2012 SLA indicates that the contract price includes labour and management costs.[43] WaterNSW did not have any insight or control over how these SLA fees were determined or whether asset management costs were accounted for.

In its Determination for the current regulatory period, IPART set an allowance for these services based on the fees DPIE-Water charged State Water under the 2012 SLA. In 2017, the associated assets and staff were transferred to WaterNSW, which resulted in what was previously a commercial service provided by DPIE-Water to WaterNSW, becoming an internal service.

Water quality monitoring in storages, for cold water pollution, and associated with drinking water supplies was undertaken by WaterNSW.

Our operating costs for hydrometric and water quality monitoring incurred since the transfer of functions in 2017 reflect labour costs for delivering the services (based on timesheet data), as well as WaterNSW overheads allocated in accordance with our CAM. The allowance, based on the 2012 SLA with DPIE-Water, is therefore not cost reflective. During the determination period, WaterNSW has undertaken a comprehensive review of its water monitoring functions.

A major part of this review involved consolidation of laboratory services, and significant changes to operational practices and organisational arrangements to ensure our ability to deliver services to the required standards and achieve efficiencies. A major focus of the review was to ensure that the provision of services was effective and efficient, and comparable to those available through external services providers. The benefits from this review will be reflected in costs from 2019/20 onwards.

Since the formation of WaterNSW, considerable work has been undertaken to update and refine the systems for managing and monitoring water quality in the Fish River Scheme and other locations where WaterNSW provides drinking water. The Fish River Scheme has been

[43] Section 6 in the Inter Agency Agreement: State Water Corporation and NSW Office of Water, 2012

incorporated into the WaterNSW Water Quality Management System, and new Quality Assurance Plans have been written for smaller supplies at dams. These plans are a requirement of the Operating Licence and are developed to the satisfaction of NSW Health. Consequentially, there has been a greater focus on water quality monitoring to ensure WaterNSW meets its ongoing water quality obligations.

The drought has also shifted the focus of water quality and hydrometric monitoring services. As discussed in Section 2.6, the three-year period from January 2017 to December 2019 was the driest on record for any 36-month period. Drought has led to an increased focus on monitoring the larger regulated rivers, and therefore increased the frequency of certain activities under water monitoring, in particular gauging requests and algal management.

Over the past three years, there has been a substantial increase in requests for gauging in larger regulated rivers compared to smaller or unregulated rivers. Rural Valleys consists of larger regulated rivers and has required more monitoring activities than WAMC. This is demonstrated by the increased number of gaugings that took place during 2017-18 and 2018-19 as a result of severe drought in these years, as well as the relative increase in reactive gauging work in Rural Valleys compared to WAMC.

These additional gaugings were considered crucial to ensuring WaterNSW could tightly manage the dwindling water resource during the drought so as to ensure the best outcomes for our customers including critical town water supplies.

Table 33 - Number of Gaugings Undertaken in the Rural Valleys and WAMC Determinations

	2016-17	2017-18	2018-19
Rural Valleys	1,615	1,529	1,031
WAMC	1,381	1,248	983
Total	2,996	2,777	2,014

WaterNSW's algal bloom management activities have also increased due to drought, leading to higher water monitoring costs. Algal blooms occur more frequently during drought and the impact of this on our costs is not reflected in the allowance for monitoring services. The following table demonstrates the increase in number of red algal samples and red alerts related to algal blooms over the last three years.

It should be noted that red alerts declared for a site may last for varying lengths of time, implying that the total sample numbers are a better reflection of the impact of drought on algal blooms. The sample number for the 2019-20 period is also expected to near 1,200 by the end of 2020, reflecting the continuing effects of drought. While these numbers are for the entire RACC program, they are indicative of higher sampling and management costs for rural storages, which is part of the Rural Determination. Understanding algae levels in rural storages is not only important for publishing Algal Alerts, but also to inform WaterNSW's operating decisions such as offtake heights and releases to help minimise algal risks.

Table 34 - Number of Algal Samples and Red Algal Alerts

	2016-17	2017-18	2018-19
Total samples	859	1,152	875
Red alerts	32	36	43

Allowance for the 2021 Determination period

As highlighted above, the IPART allowance for water monitoring and hydrometric services in the 2017 Determination period was based on an unclear breakdown of costs, particularly between overhead and direct costs (and between capital and operating expenditure). WaterNSW's actual costs since the transfer of functions in 2017 provide a strong evidence basis for likely efficient costs within the next one-year determination period.

It is expected that the low rainfall associated with drought will persist, and WaterNSW will need to continue to adjust its water quality and hydrometric monitoring services accordingly. This means that the increased number of gaugings in Rural Valleys over the past couple of years is likely to continue. As such, the actual costs incurred in 2019 are a reasonable basis for the two year determination period.

Dam Safety Compliance

Dam Safety NSW, as the dams regulator, check compliance with the requirements of the Dams Safety Regulation 2019. Dams Safety NSW can enforce the regulation through a range of new penalties. 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.

In the context of new dam safety legislation (the Dams Safety Act 2015), and the now released Dam Safety Regulation 2019 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 6.3.3, the following standard activities form part of the dams program for this pricing period. They will be delivered using internal resources in conjunction with external services in some cases.

Table 35 – Activities under the Dam Safety Compliance program

Activity	Description
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.
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.
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.
Investigation and Resolution of confirmed Dam Safety Deficiencies	The objective of this activity is the prudent management of dam safety risks to meet business, customer and regulatory requirements. A wide range of tasks are undertaken to analyse and evaluate risks and develop and deliver treatments and interventions.
Emergency Preparedness	Potential or actual dam safety emergencies are managed in accordance with regulatory requirements, stakeholder and business needs. This includes managing Dam Safety Emergency Plans (DSEP), maintaining and monitoring the Seismic Response Network and conducting detailed

Activity	Description
	hydraulic modelling and mapping of downstream catchments for the dams as a necessary input into the DSEP documents.
Maintaining Capability and Access to Key Information	This activity ensures that 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.
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. This includes reports for Senior Management and the Board and regular "health checks" of the program against contemporary industry best practice, with significant decisions reviewed by suitably qualified experts.
Communication with External Stakeholders	WaterNSW undertakes reporting and liaison with the Dams Safety Regulator (now Dams Safety NSW) and other industry bodies. This will include additional regulatory reporting requirements outlined in the Dams Safety Act (2015) when enforced. WSAA benchmarking surveys will also be undertaken and engagement with the discussion forums to influence the development of a DSMS's maturity matrix.

Current Determination Period expenditure

WaterNSW expects to incur $16.1 million of operating expenditure for dam safety compliance in the 2017-21 period, which is $5.7 million lower than the IPART allowance of $22 million.

The primary reason for this underspend is a restructure of the dam safety operating model as a result of a changing regulatory environment and an internal review.

The dam safety compliance function at WaterNSW has undergone a significant restructure in recent years. The operating model for dam safety was reassessed, and areas for improvements were identified. Following this, the new operating model has evolved as follows;

- In 2016-17, the dam safety compliance unit requested a restructure of the whole function;
- In 2017-18, a number of vacancies were opened in the team due to the restructure;
- In 2018-19, roles began to be filled; and
- In 2019-20, the team is close to complete.

Up to 10 positions were vacant until the second half of 2018-19 following the change in operating model. The vacancies reflect the majority of the variance between the 2018-19 actuals (our last year of audited data) and the 2020-21 IPART allowance.

Throughout this period of internal review, the regulatory landscape for dam safety was also changing. In 2015, independent regulator Dams Safety NSW was established under the new Dam Safety Act, with responsibility to administer Dams Safety Regulation 2019.[44] This replaced the Dam Safety Act 1978, which was administered by the Dam Safety Committee.

The Act is not in effect yet, but the business must be fully compliant with the new regulation by November 2021. WaterNSW has undertaken a comprehensive review of the regulatory implications whilst developing and implementing a change management plan to ensure compliance with the regulatory obligations, while reviewing and restructuring its business.

[44] https://www.damsafety.nsw.gov.au/about-dams-safety-nsw/

The new legislation has significantly increased penalties for non-compliance up to $1.1 million for corporations and $250,000 for individuals. However, there are some ambiguities and lack of clarity in the regulatory requirements resulting from contradictions in the regulations, absence of enforceable standards and meaningful guidelines. We are working with Dam Safety NSW in a constructive manner to resolve these issues and provide greater clarity to all Dam owners within NSW. However, adequate funding to discharge the compliance obligations is vital.

The change in the operating model and regulatory framework have required changes to the delivery of projects, with the business focusing primarily on the restructure. As a result, there are a number of projects in 2017-18 and 2018-19 that have been delayed to future years, leading to a forecast underspend on our allowance. These include a Dam Safety project, a Survey Services project and a Drafting Services project, accounting for about $650,000 of the underspend in 2018-19.

Allowance for the 2021 Determination period

As noted above, in 2017-18 and 2018-19, WaterNSW underspent on dam safety compliance relative to the IPART allowance, due to the restructure of the business creating vacancies and as a consequence of project delivery deferrals.

WaterNSW notes that this trend will reverse in upcoming future years as the team reaches personnel capacity and deferred projects commence. We will also be implementing changes to ensure that we satisfy our new regulatory requirements. Therefore, while we are proposing to use 2018-19 actual spend in the 2022-23 determination period, we expect that we will need to recover higher costs related to dam safety compliance in the subsequent determination period, starting in 2022-23.

WaterNSW proposes that the annual allowance for the 2021 Determination for dam safety compliance of $4.1m.

Other expenditure categories

The remaining smaller categories of operating expenditure are summarised in the table below. Our expenditure for these categories in the current regulatory period is forecast to be broadly in line with IPART's allowance. WaterNSW proposes that the annual allowance for the 2021 Determination period should equal our 2018-19 actual expenditure on these categories in real terms.

Table 36 – Other expenditure categories

Category	Description of activities
Customer Support, Compliance and Other	Customer support operating expenditure activities involve management and administration of our Customer Advisory Groups (CAGs), customer education and support materials. Customer billing activities include customer enquiries, transaction and complaints services (Helpdesk), invoicing, receipting, debtor management, system administration, and postage to collect regulated revenue. Metering and compliance activities include customer water ordering, customer water accounting management, customer site surveillance, reporting, meter reading, system management and usage apportionment, licensing issues resolution. Corporate Systems expenditure relates to ongoing ICT improvement initiatives.

Category	Description of activities
Environmental Planning, Protection and Delivery	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). We implement an Environmental Management System (EMS) in accordance with our Operating Licence, and an environmental impact assessment process which refers to a set of environment and heritage assessment procedures. A large share of environmental planning and protection for Rural Valleys is based on expenditure on fishway passages or offsets, under section 218 of the Fisheries Management Act section 1994, primarily arising from dam safety upgrades. This requires operating expenditure for planning or negotiations.

7. Regulatory asset base

The combined opening value of the Rural Valleys RABs for 2021-22 is $979 million. The proposed closing value of the RAB for 30 June 2022 is $1,006 million ($2020-21).

7.1 Introduction

The RAB reflects the written-down value of efficient capital expenditure that WaterNSW has incurred to provide bulk water services to customers in rural valleys. The RAB provides the basis for calculating both the return on capital and the return of capital (i.e. depreciation), two of the key building blocks that comprise WaterNSW's total revenue requirement.

There are two steps involved in calculating the RAB:

- First, determining the opening RAB for the 2021 Determination period, commencing 1 July 2021; and
- Second, determining the value of the RAB for each of the one year of the 2021 Determination period.

This section describes WaterNSW's proposed approach to determine WaterNSW's RAB for the 2021 Determination period which is used to calculate the cost reflective revenue requirement.

7.2 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 for 2021-22. 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 fund efficient debt and equity financing costs. These capital-related costs comprise a significant proportion of WaterNSW's total revenue requirement for the one-year 2021 Determination period.

The capital costs allowance for all of WaterNSW's capital investment to date and forecast capital investment in the 2021 Determination 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 2021 using the RAB roll forward methodology prescribed in Schedule 2 of the WCIR, and rolled forward the starting RAB to the end of the 2021 regulatory period. The RAB values, as determined through this two-step process, are shown in Table 36 below.

Table 37 - RAB values - RAB Roll Forward and Forecast RAB ($'000s)

Total	Step 1 - RAB Roll Forward ($nominal)				Step 2 - Forecast RAB ($2020-21)	
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Opening RAB	729,264	750,911	788,062	827,148	894,288	**979,160**
+ Capex/Additions	23,308	37,138	43,197	67,234	80,603	48,192
- Depreciation	15,653	15,860	16,947	17,968	18,891	21,352
- Disposals	85	283	117	200	202	202
+ Indexation*	14,077	16,156	12,954	18,074	23,362	0
Closing RAB	750,911	788,062	827,148	894,288	979,160	**1,005,799**

* Indexation on opening RAB and 50 per cent of the value of capital expenditure and disposals. Forecast inflation rates of 2.1% to index from $2018-19 to $2019-20 and 2.5% to index from $2019-20 to $2020-21 applied.

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

7.3 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 RAB 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 RAB of the operator determined in respect of the preceding regulatory period

B is the total of the actual (or, in the case of the last year of the preceding 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 preceding regulatory period.

C is the regulatory depreciation in respect of assets used to provide infrastructure services in respect of each year of the preceding 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 proposes that IPART apply the WCIR for the determination of the coastal valley RABs for consistency as we understand was the approach adopted in the 2017 Determination.

7.4 RAB roll forward - opening RAB

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

7.4.1 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 and coastal valleys, WaterNSW has applied the opening RAB values for the 2017-18 financial year as determined by IPART in the 2017 Determination, updated with actual capital expenditure.

7.4.2 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 2017-21 regulatory period. This approach is consistent with the standard IPART approach, 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 5.

7.4.3 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 Rural Valleys, WaterNSW has applied forecast depreciation values determined by IPART in the 2017 Determination. These values were used by IPART to calculate the regulatory depreciation allowance that was included in regulated charges during the 2017-21 regulatory period.

7.4.4 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. WaterNSW did not receive any revenue from the disposal of regulated assets in the 2017 Determination period for the MDB valleys or the coastal valleys.

7.4.5 Indexation of RAB and closing RAB values

Further to the steps outlined above, WaterNSW proposes to uplift the value of the opening RAB by June to June actual CPI in each year of the 2017-21 regulatory period. This is consistent with the approach adopted by IPART in its 2017 Determination.

7.5 Forecast RAB

To calculate the forecast RAB, WaterNSW has calculated the opening RAB as at 1 July 2021 using the RAB roll forward methodology described in above, and rolled forward the starting RAB to the end of the 2021-22 regulatory period using forecast capital expenditure, asset disposals, depreciation and inflation.

7.5.1 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..

7.5.2 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 2021 Determination 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.

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 IPART in its 2017 Determination updated for actual capital expenditure during the 2017-21 period.

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 2021 Determination period by valley are summarised below.

Table 38 Proposed average life of asset estimates for the 2021-22 regulatory period

Valley	Existing Assets		New Assets	
	User share	Government share	User share	Government share
Border	41	71	72	64
Gwydir	38	50	75	74
Namoi	48	52	61	54
Peel	36	45	49	31
Lachlan	41	52	73	75
Macquarie	40	59	70	65
Murray	48	52	63	46
Murrumbidgee	46	35	70	51
Lowbidgee	75	0	76	0
North Coast	53	90	54	30
Hunter	70	85	69	50
South Coast	50	85	60	41
Fish River	40	N/A	57	N/A

7.5.3 Forecast disposals

WaterNSW is forecasting revenue from the disposal of regulated assets in the 2021 Determination period of $202,000 from the disposal of vehicles and minor assets. The estimated gross revenue has been reduced from the RAB in the relevant year.

7.5.4 Forecast RAB for the 2021 Determination – All valleys

A summary of the forecast RAB values for the 2021-22 regulatory period is shown in Table 40 below.

Table 39 - Forecast RAB values for the 2021-22 regulatory period – All valleys ($000s, $2020-21)

$000's	2021-22
Opening RAB	979,160
+ net capital expenditure	48,192
- depreciation	21,352
- disposals	202
+ indexation	0
Closing RAB	**1,005,799**

7.5.5 RAB tables by valley

The proposed RAB values for each valley for the one-year 2021 Determination are provided in the IPART Building block model and are also found in Appendix 4.

8. Rate of return on capital

Our proposed post-tax real rate of return on capital is 3.2% for Coastal (and Hunter) Valleys based on IPART's standard approach and 1.7% for MDB valleys based on the application of the ACCC's Pricing Principles

8.1 Introduction

The return on capital covers the cost of servicing our debt and provides a return to our shareholders for their equity investment in our business. It is calculated by multiplying the value of our RAB by the rate of return on capital. WaterNSW is proposing to apply the Weighted Average Cost of Capital (WACC) methodology for determining the rate of return on capital.

The WACC is the minimum ('benchmark') financial return an investor requires from an investment given its risk before committing additional capital. It is the sum of weighted average returns expected from the two types of capital invested – debt and equity.

In determining the appropriate rate of return, economic regulators strive to provide an allowance as reasonably accurate as possible to ensure that:

- Customers do not pay more than necessary; and
- Regulated firms will be financially viable and have the incentive to invest in the efficient level of productive assets.

8.2 Why is it important?

The return on capital makes up approximately 18% of the revenue allowance that we need to provide bulk water supply services in the Rural Valleys .

If the rate of return is set too low, we may not be able to secure the funds needed to invest in bulk water, which could negatively impact on water quality and customer service levels. If it is set too high, our customers could pay too much for our services.

This section sets out WaterNSW's approach for determining the return on capital building blocks used to calculate the cost reflective revenue requirement for the regulatory period commencing 1 July 2021.

8.3 Proposed method to determine the rate of return

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 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 7) to arrive at the return on capital building block component for customer charges. The return on capital component contributes approximately 18% of WaterNSW's total revenue requirement for the rural valleys (down from approximately 33% for the 2017 Determination period due to a lower current WACC).

For the MDB valleys, WaterNSW is proposing a post-tax real WACC of 1.7%, down from 3.1% and consistent with application of the ACCC Pricing Principles for the WCIR in the 2017 Determination. For the coastal valleys, the WACC has reduced from 4.7% as applied by IPART in the 2017 Determination period to a placeholder WACC of 3.2%. The reduction in the proposed WACCs is primarily driven by current interest rates that are among the lowest on record. The difference in the WACC estimates reflects different methodologies between State and Commonwealth regulatory frameworks.

This section describes WaterNSW's proposed WACC and WACC parameters to apply in the MDB and coastal valleys for the 2021 Determination period.

8.4 WACC requirements – MDB valleys

Under the transitional rules for the Water Charge Rules 2010, the ACCC imposes certain conditions for IPART to conduct the pricing reviews under the WCIR. These conditions include that IPART must apply the pricing principles as published by the ACCC from time to time[45]. The rationale for this condition is to ensure that multiple regulators across the MDB apply one set of pricing principles 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 41 below sets out the WACC variables and parameters as per the WACC formula, and Table 42 sets out WaterNSW's proposals in respect of each variable and parameter.

[45] 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 40 - WACC parameters for MDB valleys

WACC variables	Pricing principles[46]	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 0.9% which is a 40 day measure as of 30 April 2020, as reported by the RBA.[47] 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	Risk free rate of 0.9% as above. Debt margin of 2.96% which is based on the RBA's 10 year credit spread of BBB rated corporate bond yields, as published by IPART in its May 2020 market update.[48] We note 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+.
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

[46] Section 3.3.1 Pricing principles for price approvals and determinations under the Water Charge (Infrastructure) Rules 2010
[47] Interest Rates and Yields – Money Market – Daily – F1 from http://www.rba.gov.au/statistics/tables/index.html
[48] 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 41- WACC calculation for MDB valleys

WACC calculation									
Cost of Equity	=	0.88% risk free rate	+	0.7 equity beta	X	6.0% market risk premium	=	**5.08% cost of equity** (nominal post-tax)	
Cost of Debt	=	0.88% risk free rate	+	2.96% debt margin			=	**3.84% cost of debt** (nominal pre-tax)	
WACC	=	5.08% cost of equity x 40 per cent of the market value of the firm	+	3.84% cost of debt x 60 per cent of the market value of the firm.			=	**1.73% vanilla post-tax real WACC** (assuming inflation of 2.6%), down 140bp or 45% from the 3.1% WACC in the 2017 Determination.	

8.4.1 Our proposed WACC for MDB valleys – ACCC Approach

Based on the ACCC's approach to setting the WACC as outlined in the Pricing Principles, WaterNSW has calculated a **'placeholder' post-tax real WACC of 1.7% for the MDB valleys** for the 2021 Determination period. This rate will be updated for the final determination using financial market data observed closer to the start of the 2021 Determination period. A WACC of 1.7% represents a 140 basis point, or 45% reduction in the post-tax real WACC for MDB valleys of 3.1% as set out in IPART's 2017 Determination.

WaterNSW considers that the ACCC 'on the day' methodology has not kept pace with other Australian regulators in looking to consider historic and future market data in deriving WACC estimates. For instance:

- IPART adopts a WACC methodology based on an equal weighting of historic and current returns on debt (using trailing averages) and equity, including six methodologies to form a view of the market risk premium based on current market data (five of the six are based on dividend growth models, with the sixth based on a consultant's calculation informed by the distribution of influencing variables);
- The Australian Energy Regulator (AER) adopts a WACC methodology based on a 10-year trailing average cost of debt costs of debt that attempts to align to an efficient debt management structure for a benchmark efficient firm;
- The Essential Services Commission of Victoria (ESCV) applies a 10 year trailing average approach to estimate the benchmark cost of debt. For the return on equity (real) the ESCV applies a 'PREMO" incentive mechanism for Melbourne Water that ranges from 3.5% to 5.1% depending on whether the "level of ambition of its price submission as either "Leading', 'Advanced', Standard' or 'Basic'",[49]
- The Essential Services Commission of South Australia's (ESCOSA) regulation of SA Water (2016-20) is based on moving from an 'on the day' approach to setting a ten-year trailing average cost of debt, updated annually during the regulatory period to reflect prevailing rates;[50] and
- The Economic Regulatory Authority of Western Australia (ERAWA)'s regulation of Western Power includes a WACC based on an annual update of the 10-year trailing average for the debt risk premium.[51]

A summary of the regulatory methodologies and estimates of the market risk premium as prepared by the ICRC is provided for reference in Appendix 3.

[49] Melbourne Water's price review - Essential Services Commission Melbourne Water's 2021 water price review, page 32.
[50] ESCOSA's SA Water Regulatory Rate of Return 2016 – 2020 Final Report to the Treasurer, March 2015, page 2.
[51] ERAWA's Amended proposed Access Arrangement for the Western Power Network Approved by the Economic Regulation Authority 28 February 2019 (as amended by corrigenda of 10 May 2019), page 32.

In summary, our analysis suggests that the ACCC's WACC methodology as outlined in the 2011 Pricing Principles is out of step with more recent regulatory practice in that it locks in the 'on the day' approach to both the return on equity and the return on debt for the term of the determination. Other Australian regulators (i.e. IPART, the AER and the jurisdictional regulators in Victoria, South Australia and Western Australia) all apply a variant of the 10-year trailing average to the cost of debt, while IPART also applies 50:50 weighting of the historic and current calculations of the return on equity. On the day estimates have been shown to create the potential for a large divergence in estimates over a short period of time, which was particularly highlighted during the Global Financial Crisis. Given the uncertainty in current macroeconomic conditions, there is the potential for similar volatility.

The impact of the ACCC's current approach is that it locks in a historically low rate of return that is below the efficient costs of providing water infrastructure services, thereby placing considerable financeability pressure on the business.

WaterNSW will explore with the ACCC and IPART the potential to have the ACCC Pricing Principles amended to move away from the 'on the day' approach to a more contemporary calculation of the rate of return used by other regulators, and that applies a combination of current and historic data.

The following table outlines the WACC values assumed by WaterNSW in our calculation of proposed revenues and prices in this pricing proposal. We have used 30 April 2020 data in deriving our proposed 'placeholder' WACC for the MDB valleys of 1.7%. The proposed WACC for MDB valleys reduces by approximately 140 basis points, or 45% between the 2017 Determination and the 2021 Determination period, reflecting a falling risk free rate to historically low levels over the four-year period.

Table 42 – Current (2017-21) and proposed (2021-22) WACCs – ACCC Approach

WACC Parameter	2017-21 Determination	Placeholder 2021-22
Nominal risk free rate	2.6%	0.88%
Inflation	2.4%	2.6%[52]
Debt margin (excluding debt raising costs)	2.1%	2.96%
Debt to total assets	60%	60%
Market risk premium (current / long-term)	6.0%	6.0%
Equity beta	0.7	0.7
Cost of equity (nominal post-tax)	6.8%	5.08%
Cost of debt (nominal pre-tax)	4.7%	3.84%
Nominal Vanilla WACC	5.5%	4.33%
Real Vanilla WACC	**3.1%**	**1.73%**

Source: WaterNSW. Note: Excludes debt raising costs.

Unless stated otherwise, WaterNSW has used a WACC of 1.7% (1.73% rounded to one decimal place) in its revenue and price modelling in this submission for the MDB valleys.

[52] The calculation of 2.6% used in the placeholder WACC is based on the strict application of IPART's inflation formula. WaterNSW has separately provided a report to IPART identifying why the use of the RBA's short term forecast of 2.75% (which includes an upwards adjustment arising from the roll off of the June 2020 quarter effect of the Government providing free child care) is not appropriate and that, as a minimum, underlying 'headline trimmed' inflation of 1.25% should instead be adopted. We therefore do not support the use of an inflation forecast of 2.6%, but have applied it on the basis that it is a 'placeholder' and will be updated during the review period.

8.5 WACC requirements – coastal IPART valleys

As the ACCC Pricing Principles do not apply to the coastal valleys, we are required to apply the IPART approach to setting the WACC. We have estimated the rate of return by applying IPART's method for estimating and determining the WACC as published in the IPART Final WACC Report in 2018 (the 2018 WACC Methodology)[53]. We consider it reasonable that IPART adopts this methodology in its 2021 Determination for the coastal valleys.

WaterNSW's detailed comments on the appropriate WACC for the 2021 Determination period for the coastal valleys (i.e. those that are regulated under the IPART Act and therefore subject to IPART's standard methodology) are provided in Appendix 3.

8.5.1 Our proposed WACC for coastal valleys

WaterNSW proposes that IPART apply its 2018 WACC Methodology, which results in a **'placeholder' post-tax real WACC of 3.2% for coastal valleys** for the 2021 Determination period. This rate will be updated for the final determination using financial market data observed closer to the start of the 2021 Determination period. This compares to a current real post-tax WACC for WaterNSW of 4.7% in the 2017 Determination.

Table 44 provides WaterNSW's proposed 'placeholder' WACC used in our calculation of proposed revenues and prices in this pricing proposal for the IPART valleys.

Table 43 – Proposed WACC for the 2021 Determination period

WACC Parameter	Current market	Long term	Placeholder-
Nominal risk free rate	0.9	3.1%	2.0%
Inflation	2.30%	2.30%	2.3%
Debt margin	2.1%	2.6%	2.3%
Debt to total assets	60%	60%	60%
Market risk premium	9.7%	6.0%	7.8%
Equity beta	0.7	0.7	0.7
Cost of equity (nominal post-tax)	7.7%	7.3%	7.5%
Cost of debt (nominal pre-tax)	3.0%	5.7%	4.3%
Nominal Vanilla WACC			5.6%
Real Vanilla WACC			**3.2%**

Our proposed 'placeholder' WACC of 3.2% for IPART valleys is based on the values provided in IPART's March 2020 consultation on the debt margin. [54]

8.6 Inflation forecasting risk impacting our financeability

The impact of forecast inflation is an important consideration in the 2021 Determination due to its significant impact on WaterNSW's financeability.

Market-based measures of expected inflation have fallen dramatically over the last few months and the breakeven inflation series suggests that bond market participants are pricing in close to zero inflation on average over the next four years. Maintaining IPART's approach for inflation

[53] See *IPART Review of our WACC method – Final Report 20018*. https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/final-report-review-of-our-wacc-method-february-2018.pdf

[54] See https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/regulatory-framework-regulatory-policy-sea-weighted-average-cost-of-capital-wacc-models/wacc-publications/fact-sheet-wacc-consultation-on-debt-margin-april-2020.pdf

that results in a current forecast of inflation as at May 2020 of 2.3% over the next four years is simply not sustainable. It puts WaterNSW at significant financial risk when considering the current low inflation forecasts arising from COVID 19 impacts.

Our proposal regarding inflation and financeability is outlined in Appendix 3 and is supported by an expert report by CEG provided as Attachment 2.[55]

[55] See CEG report titled *WACC, inflation compensation and financeability for WaterNSW* provided as Attachment 2. This report was originally provided as Attachment 1 to WaterNSW's 27 April 2020 response to IPART's Draft Greater Sydney Determination and is unchanged from that version.

9. Working capital, tax allowance and ICD rebate

9.1 Tax allowance

In a post-tax framework, corporate income tax expenses are included as one of the building blocks that make up WaterNSW's total revenue requirement. IPART includes an explicit allowance for tax, because it uses a post-tax WACC to estimate the allowance for a return on assets in the revenue requirement. This allowance reflects the regulated business's forecast tax liabilities.

WaterNSW is proposing to hold the user share revenue requirement constant into the 2022 regulatory year with adjustments for uncontrollable events such as the change in the IPART cost share ratios.

As a result, this section sets out WaterNSW's approach to calculating the total tax allowance for the cost reflective revenue requirement for the regulatory period commencing 1 July 2021.

IPART calculates the tax allowance for each year by applying the statutory corporate tax rate adjusted for franking credits to the business's (nominal) taxable income.[56] The adoption of a corporate tax rate of 30% is consistent with the rate expected to be applicable in the upcoming regulatory period to the benchmark efficient entity that is applied in estimating the WACC and net tax liabilities, being a firm operating in a competitive market and facing similar risks to the regulated business.

Furthermore, in March 2017, the Australian Government enacted legislation that introduced different rates of corporate income tax for businesses of different sizes. Under the legislation, from 1 July 2018, businesses with an aggregated turnover of less than $50 million (base rate entities) pay 27.5% tax, while those with a higher turnover pay 30% tax on all their taxable income. From 2024-25, base rate entities will pay 27.0% tax, and this rate will reduce to 26.0% in the following year and 25.0% in 2026-27.

The annual turnover for providing water services to Rural Valleys is greater than $50 million and therefore the lower tax rates would not apply to WaterNSW. Notwithstanding we note that even if the Rural Valleys business operated as a separate business (which is does not), tax law requires the determination of aggregated turnover (a key factor in eligibility as a base rate entity) to include the turnover of connected entities. Therefore, even if the annual turnover was less than $50 million (which it is not), the applicable corporate income tax rate is 30%.

Taxable income is the notional revenue requirement (excluding tax allowance) less operating cost allowances, tax depreciation and interest expenses.

As part of calculating the appropriate tax allowance, the business is required to provide forecast tax depreciation for the determination period. Other items such as interest expenses are based on the parameters used for the WACC and the value of the tax RAB.

The total tax allowance is calculated following the same methodology as used in the 2017 Determination for WaterNSW as follows

Total tax allowance =

Notional revenue requirement (excluding tax liability)
− Operating expenditure
− Tax depreciation
− Interest expense

[56] Under IPART's post-tax framework, the value of franking credits (gamma) enters the regulatory decision directly only through the estimate of the tax liability.

= Taxable income
− Accumulated tax losses
= Taxable income after tax losses
x Adjusted corporate tax rate[57]
= Tax before adjustment for franking credits
− Adjustment for franking credits
= Total tax allowance

Each of these inputs is determined as follows:

- The calculation of the notional revenue requirement is set out in Section 12 'Revenue, prices and customer bill impacts';
- Cash and in-kind contributions, such as gifted assets and capital contributions are included in recognition of the tax liabilities associated with these items. WaterNSW is not forecasting any cash or in-kind contributions;
- Interest expenses are calculated by multiplying the RAB by the cost of debt, adjusted for the level of gearing (i.e. the share of debt funding) as discussed in Section 9 'Rate of return';
- The approach used for estimating operating expenses is discussed in Section 7 'Operating expenditure'; and
- Previous year losses are the accumulated tax losses from prior years. If the taxable profit calculated above (excluding previous year losses) results in a loss, then these losses are carried forward and tracked over time.

The adjustment for gamma is discussed in Section 9.1.2 below.

Under the National Tax Equivalents Regime (NTER), the same provisions typically apply to government owned corporations. However, instead of paying taxation subject to income tax laws, the entity pays an equivalent income tax liability to the Treasury or Revenue Office of the State or Territory to which the NTER entity belongs.

In forecasting the corporate income taxation payable by WaterNSW, under the ACCC Pricing Principles the regulator must 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 NTER.

To comply with these requirements, WaterNSW has forecast tax obligations consistent with our existing financial modelling.

In the 2017 price review, WaterNSW noted that 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, in the 2017 price review, WaterNSW 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 tax losses caused by the 40F claims will be carried forward into 2021 determination period until they are exhausted.

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

[57] Calculated as Taxable Income x T / (1-T(1- γ)), where T is the corporate tax rate (0.30) and γ is the value of franking credits(gamma, 0.25).

Ruling 2015/2 Income Tax: effective life of depreciating assets and therefore consistent with the ACCC Pricing Principles.

9.1.1 Tax on gifted assets

Gifted assets are assets that utilities receive for free, usually from developers. Gifted assets do not affect the RAB, and utilities do not earn a return on or of those assets. Utilities, however, are required to pay tax equivalents on the value of gifted assets. WaterNSW is not forecasting any gifted assets.[58]

9.1.2 Tax imputation credits

Under the Australian taxation system, tax credits (imputation credits) created by an Australian company may be redeemed by domestic shareholders. An imputation credit is created for each dollar of eligible tax paid by companies. Imputation credits are distributed to shareholders through the payment of franked dividends. Imputation credits therefore represent a benefit to domestic shareholders for their investment in the company in addition to dividends.[59]

Investors should be prepared to accept a lower rate of return for an investment with imputation credits attached than if there were no imputation tax credits attached. If the benefit to domestic shareholders of imputation credits is not taken into account, the amount of revenue required to provide an appropriate return to investors would be overstated.

While WaterNSW, as a publicly owned business, does not pay out franked dividends, an adjustment for the value of imputation credits is required to maintain consistency with the benchmark efficient entity approach (see Section 8 'Rate of return'). This is consistent with the 2014 IPART decision where an adjustment was made to the tax allowance for imputation credits.
IPART's 2018 WACC Methodology60 adopted a value of 0.25 for imputation credits.

Value of imputation credits

The regulatory approach generally used in Australia to account for imputation credits is to reduce the estimated amount of corporate tax by the value of imputation credits (represented by the Greek letter 'γ', gamma).

Gamma is always less than one, reflecting the following factors:

- Companies generally do not distribute all profits as dividends;
- Foreign investors are not able to redeem imputation credits;
- Some Australian investors cannot utilise imputation credits;
- Shareholders entitled to utilise imputation credits do not always do so; and
- Shareholders that do utilise imputation credits may not value them at the full face value.

Gamma is calculated as the distribution rate (the value of imputation credits distributed by a firm as a proportion of the value of imputation credits generated by it) multiplied by the utilisation rate, also referred to as 'theta' (the value of imputation credits distributed to investors as a proportion of their face value).

WaterNSW proposes a value of 0.25 for imputation credits, consistent with IPART's stated approach, based on a distribution rate of 0.7 and a utilisation rate of 0.35.

[58] Section 21A, Income Tax Assessment Act 1936. See IPART, *The incorporation of company tax in pricing determinations – Final Decision*, December 2011, p 15.
[59] Imputation credits are of no value to foreign shareholders and not all credits distributed to domestic shareholders are redeemed.
[60] IPART's February 2018 Final Report *Review of our WACC Method*, page 76.

9.1.3 Tax depreciation

Tax depreciation for assets commissioned as at 30 June 2019 in the current regulatory period is based on the value of assets in WaterNSW's Tax Fixed Asset Register, which is depreciated using the diminishing / accelerated depreciation method.

Tax depreciation for assets acquired since 30 June 2019 is calculated by establishing a Tax Asset Base for new assets utilising a weighted average asset life consistent with the RAB as set out in Table 39 and using the diminishing / accelerated depreciation method. Consistent with RAB assumptions, 50% of capital expenditure is depreciated in the year in which the capital expenditure was incurred. Inflation was not applied to the value of the tax asset base.

9.1.4 Total tax allowance

The resulting tax allowance used in calculating maximum allowed revenues. We have calculated deductable interest based on the notional gearing ratios (that is 60:40 debt to equity on the RAB).

We have then calculated the taxable income after tax losses, and multiplied the taxable income after tax losses by the adjusted corporate tax rate and adjusted the tax payable by the value of imputation credits.

These allowances are used in the build-up of our notional revenue requirements as outlined in Section 12 'Revenue requirement'.

Table 44 - Proposed tax allowance over the 2021-225 period ($000s, $2020-21)

Tax Allowance	
	2021-22
Border	0
Gwydir	0
Namoi	150
Peel	44
Lachlan	0
Macquarie	0
Murray	0
Murrumbidgee	0
Lowbidgee	0
North Coast	0
Hunter	0
South Coast	0
Fish River	308
Total	**502**

9.2 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.

IPART finalised its updated working capital policy in September 2018 and published a policy paper on this matter in November 2018.61

IPART includes an allowance for working capital in the notional revenue requirement to ensure businesses can recover the costs they incur due to delays between them delivering regulated goods or services and receiving payment for those goods or services (net of any benefits they receive due to delays between them receiving goods or services and paying for those good or services). It typically represents around 1% of their notional revenue requirement (NRR).

This section describes the working capital allowance used to calculate the cost reflective revenue requirement.

We have adopted IPART's methodology of determining the working capital allowance based on:

- The billing cycle 90 days plus a 30 day allowed delay before payment for receivables;
- 30 day payment term for accounts payable;
- WaterNSW does not propose an inventory amount over the determination period; and
- WaterNSW proposes a prepayment amount of $0.3 million that remains unchanged in real terms over the determination period.

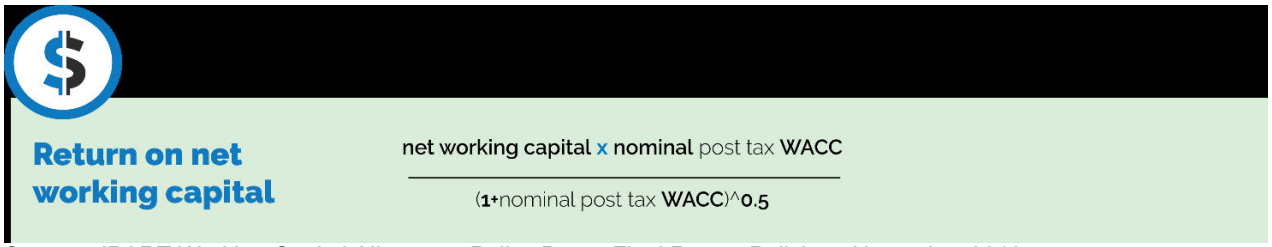
9.2.1 Return on net working capital

To determine the working capital allowance, IPART calculates the return on the net working capital that the business needs each year by:

- Multiplying net working capital by the nominal post-tax WACC; and then
- Discounting the result to its mid-year value, consistent with our timing assumptions and treatment of return on and of the RAB.

IPART has indicated it will use the formula shown below to calculate the return on working capital.

Figure 30 – How IPART will calculate the working capital allowance



Source: IPART Working Capital Allowance Policy Paper Final Report Policies. November 2018.

IPART uses a nominal WACC rather than a real WACC because, unlike the RAB, IPART does not capitalise inflationary gain in net working capital.[62]

The working capital allowance considered throughout this submission represents less than 1 per cent of total revenue as is shown in Table 46 below.

[61] IPART Working Capital Allowance Policy Paper Final Report Policies. November 2018.
[62] IPART Working Capital Allowance Policy Paper Final Report Policies November 2018. Page14.

Table 45 - Proposed working capital allowance for 2021-22 ($000s, $2020-21)

Total costs $000's	2021-22
Border	1
Gwydir	6
Namoi	20
Peel	3
Lachlan	-5
Macquarie	5
Murray	1
Murrumbidgee	6
Lowbidgee	-2
North Coast	-2
Hunter	-12
South Coast	-3
Fish River	7
Total	**24**

Due to timing issues the figures above represent the outcomes of the methodology applied by IPART prior to the 2018 review. Applying the updated methodology would yield the outcomes in the table below.

Table 46 - Amended working capital allowance for 2021-22 ($000s, $2020-21)

Total costs $000's	2021-22
Border	8
Gwydir	3
Namoi	11
Peel	4
Lachlan	6
Macquarie	27
Murray	23
Murrumbidgee	34
Lowbidgee	4
North Coast	9
Hunter	34
South Coast	7
Fish River	46
Total	**214**

9.3 Irrigation Corporations and Districts rebates

As discussed in the 2017 Determination Final Report, ICDs, located in the Lachlan, Murray and Murrumbidgee valleys, undertake activities such as billing, metering and monitoring for customers that are serviced within their irrigation distribution network. The structure of ICDs and their activities means that WaterNSW services one large customer rather than many smaller customers.[63]

[63] See IPART Rural Valleys Bulk Water Determination 2017 Final Report, page 177.

Past determinations have included discounts via rebates to ICDs to reflect WaterNSW's 'avoided costs' of not having to directly service a larger number of smaller customers. The avoided costs are calculated based on the services WaterNSW does not need to provide due to the activities of ICDs. These include billing, metering and compliance, telemetry installation and data transfer.

The discounts have been paid annually to ICDs in the form of rebates, with the value of the rebates collected from other users. While the size of the rebate does not affect WaterNSW's total revenue requirement, it affects the value of bulk water charges paid by all customers. The 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.

The ICD rebates determined by IPART from the 2017 Determination are reproduced in Table 48 below.

Table 47 - ICD rebates from the 2017 Determination as approved by IPART

	2016-17	2017-18	2018-19	2019-20	2020-21
Jemalong	63,032	40,410	38,276	38,243	37,510
Murray Irrigation	926,340	593,246	575,402	575,217	568,444
Western Murray	32,368	18,315	17,765	17,759	17,550
West Corurgan	51,408	32,678	31,695	31,685	31,312
Moira	25,687	15,231	14,773	14,768	14,594
Eagle Creek[a]	9,060	24	24	24	23
Murrumbidgee Irrigation	649,655	437,548	427,817	427,715	424,027
Coleambally Irrigation	285,096	193,407	189,106	189,061	187,430
Total discounts	**2,042,647**	**1,330,861**	**1,294,856**	**1,294,470**	**1,280,890**

[a]The significant reduction for Eagle Creek reflects a large reduction in its entitlement holdings from 13,620 in 2013-14 to 60 in 2017-18.

Source: ACCC, *Final decision on State Water Pricing Application*, June 2014, p 65; IPART, *Review of prices for WaterNSW – Rural bulk water services from 1 July 2017 - Issues Paper*, September 2016, p 62; IPART analysis.

Consistent with our proposal to fix the user share revenue requirement into the 2021 determination period (with adjustments for uncontrollable events), WaterNSW is proposing to continue paying this rebate and have it calculated based on the 2017 Determination assumptions, including:

- 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 proposed ICD rebates for the 2021 Determination are shown in the table below (figures have been updated to be shown in 2020-21 dollars).

Table 48 - ICD rebates for the 2021 Determination ($2020-21)

ICD Rebate	2020-21	2021-22
Jemalong	40,721	40,721
Murray Irrigation	617,102	617,102
Western Murray	19,052	19,052
West Corurgan	33,992	33,992
Moira	15,843	15,843
Eagle Creek*	25	5,747
Murrumbidgee Irrigation	460,323	460,323
Coleambally	203,474	203,474
Total rebates	1,390,532	1,396,254

* 2020-21 is the last year of the 2017 Determination period.

* WaterNSW has corrected the anomaly for the Eagle Creek ICD based on the apparent reductions in entitlement holdings. We have been advised that the entitlement holdings have not reduced, rather the primarily holder of entitlement was in the name of an individual instead of the Eagle Creek ICD. We have recalculated the ICD rebate for Eagle Creek using the avoided cost assumed in the 2017-21 Determination of $0.40 per entitlement and based on the volume of entitlements linked to the Eagle Creek Works Approval of 13,339MLs excluding Stock and Domestic Licences as at 2017. WaterNSW paid the corrected amount to the customer over the 2017 Determination period despite not being funded appropriately.

10. Forecast sales 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.

The forecast volumes described in this section have been used to reset the fixed and variable charges using 2017-2021 user share revenue allowance, adjusted for uncontrollable events such as the change in the IPART cost share ratios in 2018.

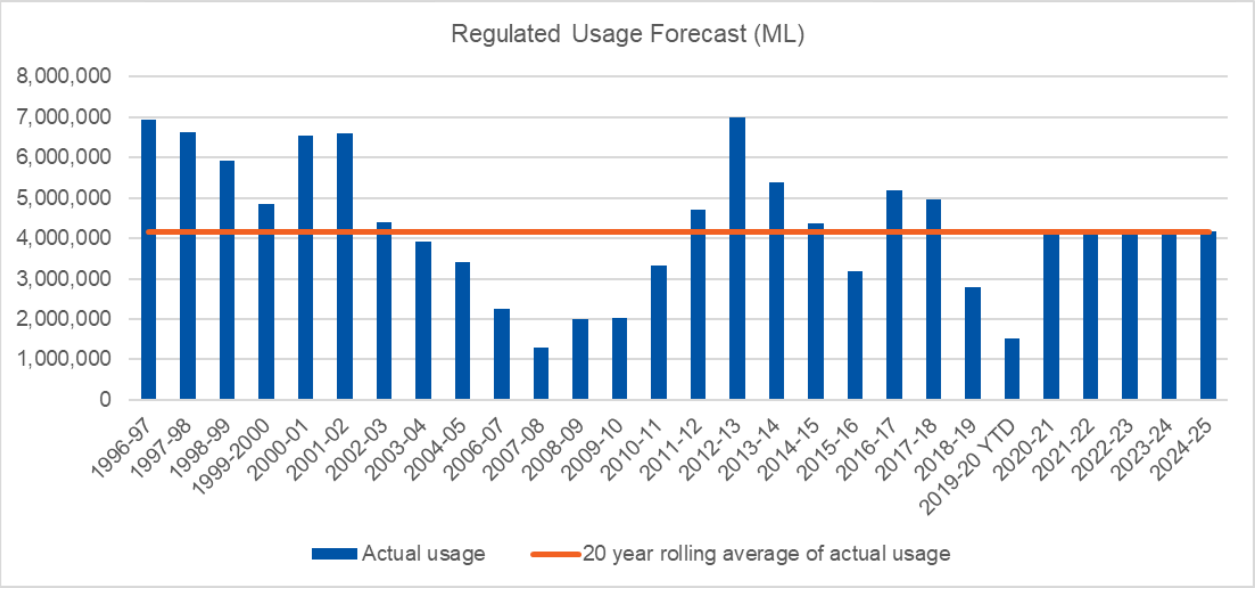
For the North and South Coast, the forecast volumes in this section have been used to calculate the revised Community Service Obligations (CSO) payments required to be made over the 2021 Determination period to ensure WaterNSW can continue to provide bulk water services to Costal valley customers in a manner that is consistent with required standards and regulatory requirements. For example, the need to ensure continuity of supply. The CSO payments are measured as the difference between the cost reflective user share revenue requirement and the expected revenue from tariffs which are currently capped.

10.1 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 and IPART in its 2017-21 price determination.

The 20-year rolling average of actual water sales and underlying data is shown below in Figure 31.

Figure 31 - 20-year rolling average of actual water usage (GLs)



The time series uses actual usage from the period 1999-2000 to 2018-19. This includes a forecast of expected demand for 2019-20 which will be replaced with actual data as part of the IPART price review process once this data becomes available. WaterNSW's forecast of expected demand for the 2019-20 year considers:

- The amount of water remaining in our storages and customers' accounts;
- The BOM's forecast to the end of the 2019-20 financial year;
- Water usage trends observed in similar season's in the past; and
- Insights on expected usage from key or large customers.

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.

Table 49 - 20 year rolling average lag

Year	20 year period from which to derive forecast water sales
2021-22	1999-20 to 2018-19

The 20-year rolling average has been used for both the WaterNSW Rural Valleys and WAMC Determinations as the charges in both of these determinations have fixed and variable components. In the Rural Valley determination, the proportion of variable charges can be as high as 60 per cent.

As demonstrated in Table 50 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.

Annual updates to the 20-year rolling average ensure that the demand forecast for regulated river systems are more indicative of recent water usage patterns and incorporates to some extent any recent variations resulting from sudden changes in the demand profile or consumption patterns of the industry and customers.

The 20-year rolling average also provide a hedge against the revenue volatility risk experienced by WaterNSW as it relies on a high portion of usage charge revenues to recover the predominately fixed cost of providing WAMC services to Rural Valley customers.

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 2022 pricing proposal.

10.2 Forecast sales by valley

The table 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.

Table 50 - 20 year rolling average of actual water usage (GLs) by valley

Valley	20-year rolling average (MLs)
Border	147,948
Gwydir	239,365
Namoi	149,925
Peel	12,686
Lachlan	191,214
Macquarie	249,042
Murray	1,419,325
Murrumbidgee	1,593,152
Lowbidgee	36,530
North Coast	574
Hunter	121,447
South Coast	3,946
Total	**4,165,155**

* For the North and South Coast valleys, we have used the rolling average of actual water usage from the previous 15 years due to data limitations.

10.2.1 The HS 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. The table below provides the inputs which determine the HS premium by valley.

Table 51 - Calculation of HS premium

Valley	WSP Ratio		Reliability Ratio		HS Premium
Border	1.25	X	2.19	=	2.73
Gwydir	1.40	X	3.08	=	4.31
Namoi	1.25	X	2.29	=	2.87
Peel	6.54	X	1.61	=	10.55
Lachlan	2.50	X	2.71	=	6.76
Macquarie	1.88	X	2.71	=	5.11
Murray	1.31	X	1.74	=	2.27
Murrumbidgee	1.69	X	1.72	=	2.91
North Coast (Richmond) *	1.25	X	0.87	=	1.09
Hunter	1.25	X	1.03	=	1.29
South Coast (Brogo) *	1.25	X	1.59	=	1.98

Table excludes Lowbidgee, which consists of supplementary licence holders
* The HS and GS fixed entitlement charge has not been reset using the updated HS premiums for the North and South Coast. WaterNSW proposes to hold the North Coast and South Coast constant into the 2021 determination period.

10.3 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. The data is current as of January 2020.

As forecast entitlement numbers remain steady year-on-year, WaterNSW is proposing to carry forward its estimate of water entitlement numbers as of January 2020 for the 2021 Determination period.

The entitlement figures are shown in Table 53 below. The additional tables below outline, for the Fish River Scheme, the MAQs per customer and the number of minor customers respectively.

Table 52 - Water entitlement numbers

Valley	GS	HS
Border	263,218	3,141
Gwydir	509,665	26,920
Namoi	256,529	8,866
Peel	29,635	17,367
Lachlan	633,166	57,252
Macquarie	632,466	42,691
Murray	2,083,603	263,575
Murrumbidgee	2,267,963	438,328
Lowbidgee*	747,000	N/A
North Coast	9,531	137
Hunter	138,109	70,702
South Coast	13,946	1,175
Total	**7,584,831**	**930,154**

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

Table 53 - Fish River Scheme – Minimum Annual Quantity (MAQ, per 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 54 - Fish River Scheme – Number of Minor Customers

Type of Minor Customer	Number of Customers
Bulk Raw Water	84

Bulk Filtered Water	231

11. Revenue requirements for bulk water services

11.1 Overview

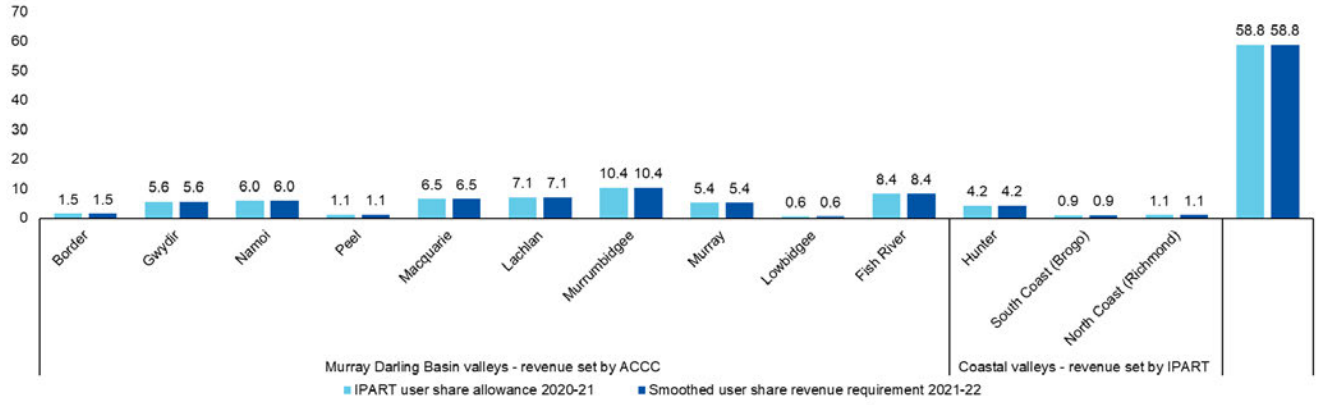
In this section we present our revenue requirements at cost reflective levels based on the traditional building block components and other charges excluding the impact of MDBA and BRC pass-through charges.

We then compare the cost reflective revenue requirement to the 2020-21 revenue allowances which we are proposing to hold constant into the 2021-22 regulatory year with adjustments for uncontrollable events such as the change in the IPART cost share ratios.

In effect, any difference between the cost reflective user revenue requirement and the 2021-22 revenue allowance for users is an efficiency dividend for users. WaterNSW proposes to allocate the efficiency dividend to the Government revenue requirement, up to a maximum cap of the total revenue requirement for the current 2021 Determination period.

A comparison of our smoothed cost reflective user revenue requirement against the revenue allowance set by the regulator is shown in the figure below.

Figure 32 - Comparison of smoothed user revenue 2021-22 against smoothed revenue allowance 2020-21 by valley ($ millions, 2020-21)



11.2 Total revenue requirement (gross amount) allowance

WaterNSW has calculated our proposed total revenue requirement as follows:

- Calculate WaterNSW's proposed base revenue requirement for the 2021 Determination period based on a 'bottom-up' assessment of our costs by applying IPART's building block methodology.
- Apply an 'efficiency dividend' that effectively caps our proposed revenue requirement for 2021-22 at the unsmoothed revenue requirement from the last year of the 2017 Determination (in $2020-21);
- Apply the user / government revenue split as per IPART's February 2019 Rural Water Cost Shares Final Report based on an 'impactor pays' methodology; and
- Maintain the existing proportion of fixed and variable charges as per the 2017 Determination. For most customers, this means 40% fixed charges and 60% variable charges.

11.2.1 Base revenue requirement

Our base revenue requirement (i.e. prior to the application of the efficiency dividend) compared to the revenue allowance set by IPART for 2020-21 in its 2017 Final Decision is shown in Table 56 below by building block.

Table 55 - Proposed total revenue requirement 2020-21 to 2021-22 ($000s, $2020-21) – to be updated

Item	2020-21*	2021-22
Operating costs**	37,473	53,387
Return of capital (depreciation)	18,618	21,167
Return on capital	29,617	17,697
Working capital allowance	258	24
Tax allowance	1,146	502
Other allowances**	3,874	3,657
Base revenue requirement	**90,986**	**96,434**

* 2020-21 is the last year of the 2017 Determination. 2020-21 figures are unsmoothed

The variation in base revenue requirement compared to the IPART allowance for the last year of the 2017 Determination (2020-21) is driven by an increase in operating expenditure ($37.5 million to $53.4 million) and a reduction in the return on capital component of the building blocks ($29.6 million to $17.7 million).

WaterNSW's proposes to apply an 'efficiency dividend' to the cost reflective base revenue requirement, to derive our proposed total revenue requirement. Our proposed total revenue requirement is $88 million for the one-year regulatory period from 1 July 2021 to 30 June 2022. The building block build-up of our revenue requirement are shown in the table above.

WaterNSW's proposed total revenue requirement caps the revenue requirement of each valley by the unsmoothed revenue requirement from 2020-21 (i.e. the last year of the 2017 Determination) excluding the impact of inflation.

11.2.2 Revenue requirement by user share (net amount)

Table 57 sets out our proposed user share revenue requirement for 2021-22. This is the revenue we propose to recover through regulated charges.

Table 56 - Smoothed Revenue requirement by valley – user share ($2020-21, '000)

000' $M	2021-22
Border	1,812
Gwydir	6,404
Namoi	6,716
Peel	1,615
Lachlan	9,372
Macquarie	8,377
Murray	6,434
Murrumbidgee	12,304
Lowbidgee	1,245

000' $M	2021-22
North Coast	1,374
Hunter	5,803
South Coast	1,212
Fish River	9,675
Base user share	**72,342**
Reallocation to Government share (CSO)	-4,811
Adjustment to cap prices	-8,130
Total user share	**59,401**

Note: this table excludes MDBA and BRC pass-through charges. Total user share here includes a CSO for North and South Coast which are not presented in figure 4 in the dark blue bar. In figure 3 this CSO is treated as government share.

11.2.3 Revenue requirement by Government share

Table 58 sets out our proposed Government share revenue requirement for 2021-22.

Table 57 - Proposed revenue requirement – Government share 2021-22 ($000s, $2020-21)

	2021-22
Border	135
Gwydir	3,997
Namoi	6,513
Peel	1,699
Lachlan	3,294
Macquarie	2,278
Murray	923
Murrumbidgee	4,071
Lowbidgee	0
North Coast	186
Hunter	887
South Coast	109
Fish River	0
Base government share	**24,091**
Reallocation to Government share (CSO)	4,811
Total government share	**28,903**

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.

The Government share revenue requirement for 2021-22 is $28.9 million ($2020-21). The Government portion is made up of the revenue requirement arising from the application of IPART's Government cost shares and "CSO' payments for any portion of WaterNSW's efficient costs that we are not able to recover through our customer charges.

11.2.1 Total revenue requirement for drought response projects (Government Share)

WaterNSW has and will continue to invest $249.5 million in drought response projects in the 2017 Determination and $94.5 million during the 2021 Determination period, for a total of $344 million across the two periods. WaterNSW is proposing to recover the 'net' costs of these drought response projects (i.e. less any grant funding from Government) via the Government RAB for the 2021 Determination period and not through user charges.

As explained in Section 3.6 on the cost share ratios, we are proposing to introduce a cost driver category to identify WaterNSW's actual and forecast cost of responding to drought. This will allow IPART to apply the rural valley cost share framework and allocate the efficient costs of drought between users and the Government. The earlier table is reproduced below for convenience.

Table 58 - Proposed cost sharing arrangements for specified drought-related works

Cost driver	Cost driver descriptions	Customer share
Drought Response	Cost incurred in relation to the delivery of works for the NSW Government's Critical Drought Initiative and other initiatives/drought projects to deliver critical infrastructure to address the prolonged risk of drought. Projects are typically initiated by Government in response to critical water shortages in regional areas. Works may be required to strengthen water supply for critical needs, industrial, irrigation and/or stock and domestic purposes. This category includes operating and capital expenses, planning costs, project management costs and overhead allocations.	0%

At the subsequent (i.e. 2022) Determination, we anticipate that there may be additional expenditures for a number of these projects, in particular the three major dam projects outlined above (i.e. Wyangala dam wall raising, Mole River dam and Dungowan dam) and that some user share of the costs may appropriate at the next review.

The Government revenue requirement attributed to the drought response projects is shown below.

Figure 33 Government revenue requirement for drought response projects ($000s, 2020-21)

By Project	2021-22
Border 3 dams	1,501.7
Namoi other	40.3
Peel 3 dams	2,664.5
Peel other	1,092.4
Lachlan 3 dams	2,767.1
Macquarie other	475.3
Total	**8,541.4**

Figure 34 Government revenue requirement for drought response by building blocks ($000s, 2020-21)

By Building Blocks	2021-22
Operating expenditure	-
Return of capital	3,091.4
Return on capital	5,347.3
Return on working capital	-120.0
Tax allowance	222.7
Total revenue requirement	**8,541.4**

11.3 Revenue outcomes

11.3.1 Comparison of 'target' and actual revenue

In the IPART 2017 Determination, the total smoothed user revenue requirement for WaterNSW over the 2017-21 regulatory period was forecast at $229.1 million ($2020-21) for Rural Valleys. This figure includes the rebates allowed to ICDs. Over the 2017 Determination period, WaterNSW collected $184.3 million in revenue from users resulting in a $44.8 million revenue shortfall for WaterNSW compared to the user share allowance.

The comparison of the 2017 Determination total user requirement and actual user revenue is shown in the figure below.

Figure 35 Allowed revenue against actual revenue ($ 2020-21)

User Revenue against user revenue allowance						
	2017-18	2018-19	2019-20	2020-21*	Total	Average
Actual User Revenue	61,132	46,749	19,126	57,278	184,285	46,071
User Revenue Allowance	57,274	57,275	57,277	57,278	229,104	57,276
Variance	3,858	(10,527)	(38,151)	-	(44,819)	(11,205)

Analysis excludes revenue for the MDBA/BRC pass through charges, meter service charge, and the Yanco Creek levy.
*Actual revenue equals user revenue for the purpose of the analysis however this does not reflect expected revenue outcome given the prolonged effects of drought.

Drought has led to reduced volumes and a revenue shortfall position for WaterNSW, with the 20-year rolling average for **water usage falling by 7.4% since the 2017 Determination** (4,165 GL vs 4,473 GL set by IPART), with actual / forecast volumes being significantly below the average in 2018-19 and 2019-20.

We consider it unreasonable and inequitable for the business to continue to bear lower revenue as the 20-year rolling average methodology as set by IPART has not been updated in the current 2017 Determination period. We therefore are seeking to reset the pricing calculations to reflect the impact of lower volumes that are outside of our direct control. This is discussed in greater detail in Section 10.

12. Customer pricing structure

12.1 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 3.7.

WaterNSW has applied the cost shares from IPART's February 2019 Final Report.[64]

WaterNSW also levies water take service charges and other miscellaneous charges as set out in Section 14. In addition, WaterNSW passes through to customers the MDBA and BRC costs which are set out in Section 2.6.

In line with the feedback we have received from customers, we are continuing with the approach adopted in previous pricing determinations, regarding the fixed and variable tariff allocations (remains unchanged) and have applied IPART's approach to eliminating the UOM balances from the 2017 Determination. The specific variations to this approach are discussed below.

12.2 Continuation of general approach from previous determinations

12.2.1 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 WSP with some of these combined for pricing purposes.

Bulk water services charges are based on a separate fixed charge for GS and 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 3 below.

[64] See IPART Rural Water Costs Shares for WaterNSW and Water Administration Ministerial Corporation – Final Report Water. February 2019.

Box 3 – HS and GS 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.

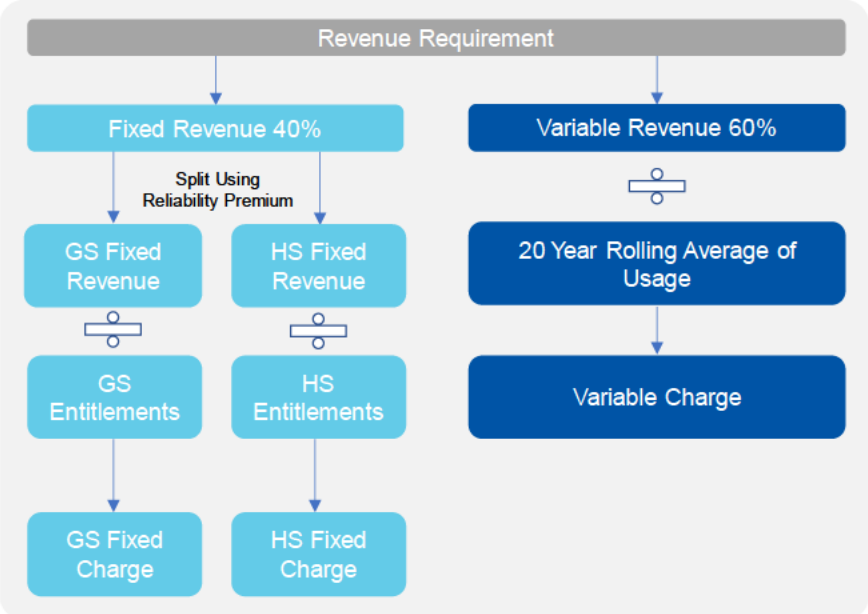
A customer's entitlement to water depends on the type of entitlement held by the customer. There are two types of entitlements subject to this pricing proposal:

- HS entitlement: this provides the holder with their full allocation of water (except in drought conditions) as determined each year according to market rules. HS water access entitlements are allocated water before GS entitlement holders. HS water entitlements are traditionally held by irrigators with permanent horticultural plantings. For pricing purposes Domestic and Stock entitlements are treated as HS. 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 HS entitlement holders and, for pricing purposes, as HS entitlements

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

The figure 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% of the revenue required is recovered through fixed charges which are levied for each share of water entitlement held by the customer.

Figure 36 - Overview of the cost allocation



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 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.

WaterNSW proposes maintaining the HS and GS premium calculation methodology from the 2017 Determination, updated for contemporary data.

See Section 10.2.1 for the actual inputs.

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% 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.

Hunter Water charges are currently split using a 60:40 fixed to variable split, while Peel Valley charges are split using an 80:20 fixed to variable split.

12.3 Exceptions

There are some exceptions to the methodology described above which have been adopted for the Fish River Scheme, the North and South Coast Valleys and Lowbidgee as set out below.

12.3.1 Fish River Scheme

Bulk water charges apply 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 users’ actual MAQ and for each minor user’s with reference to a deemed MAQ of 200KL.

In its 2017 Determination, IPART accepted WaterNSW’s proposal to change the fixed:variable share for both raw and filtered water to 80 per cent fixed. We propose the continuation of the 80:20 fixed to variable split for the Fish River Scheme in the 2021 Determination period.

12.3.2 Coastal valley subsidies

In its 2017 Determination, IPART set prices in the North and South Coast to recover approximately 10% and 38% of user costs, respectively.

The prices for the North and South Coast were set by reference to the estimated efficient pricing band. IPART stated that the upper bound of this pricing band represents customers' estimated capacity to pay, while the lower bound is an estimate of the costs WaterNSW would avoid if it did not have to supply an additional unit of water. The customers' capacity to pay was informed by a report prepared for IPART by Agripath Pty Ltd.

IPART also amended the tariff structure to increase the fixed proportion of charges to stimulate demand and increase revenue collections over the medium term (90:10 fixed to variable for North Coast, 80:20 fixed to variable for South Coast).

We report that the change in tariff structure implemented by IPART in 2017 has had no meaningful impact in stimulating demand in the North and South Coast.

WaterNSW is proposing to hold the charges in the North and South Coast constant over the 2021 Determination period.

WaterNSW has calculated that it will require, on average an additional $0.6 million per annum in CSO subsidy payments from current levels ($2.1 million per annum) to recover on its forecast user share of revenue. The level of CSO is increasing 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 59 - New CSO payments and associated inputs for North Coast Valley ($2020-21)

Item	2020-21*	2021-22
User share of revenue	1,081	1,374
Amount recovered from charges	108	106
Subsidy	973	1,268
Step increase in subsidy from FY 21	n.a	295

* 2020-21 is the last year of the 2017 Determination.

Table 60 - New CSO payments and associated inputs for South Coast Valley ($2020-21)

Item	2020-21*	2021-22
User share of revenue	944	1,212
Amount recovered from charges	355	355
Subsidy	588	856
Step increase in subsidy from FY 21	n.a	268

* 2020-21 is the last year of the 2017 Determination.

We understand that customers in the coastal valleys are seeking structural changes to water pricing issues in their valleys.[65] We are committed to working with these customers going forward, for example, we are engaging in a trial of our levels of service concept with them as set out in Section 2.8.

[65] 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 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.

12.3.3 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, which was adopted by IPART in its 2017 Determination. We propose the continuation of that charging structure, noting that it's a Supplementary Licence Fixed Charge.

13. Proposed bulk water services charges

In calculating proposed bulk water services charges, WaterNSW has applied its proposed total revenue requirement as discussed in Section 10 to the updated 20-year rolling average volumes, consistent with IPART's methodology from the 2017 Determination.

13.1 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 2017 Determination (2020-21) as a comparator and percentage changes.

Table 61 - Proposed bulk water services charges Border Valley 2021-22 ($2020-21)

Border	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$5.74	$5.91	3.0%
GS Fixed Charge	$2.13	$2.16	1.6%
Variable Usage Charge	$5.86	$5.96	1.7%

* 2020-21 is the last year of the 2017 Determination.

Table 62 - Proposed bulk water services charges Gwydir Valley 2021-22 ($2020-21)

Gwydir	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$11.93	$15.62	30.9%
GS Fixed Charge	$3.75	$3.63	-3.3%
Variable Usage Charge	$12.79	$14.21	11.1%

* 2020-21 is the last year of the 2017 Determination.

Table 63 - Proposed bulk water services charges Namoi Valley 2021-22 ($2020-21)

Namoi	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$18.40	$24.38	32.5%
GS Fixed Charge	$8.58	$8.51	-0.8%
Variable Usage Charge	$21.52	$24.00	11.5%

* 2020-21 is the last year of the 2017 Determination.

Table 64 - Proposed bulk water services charges Peel Valley 2021-22 ($2020-21)

Peel	80% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$44.77	$45.77	2.2%
GS Fixed Charge	$4.33	$4.34	0.2%
Variable Usage Charge	$19.78	$18.20	-8.0%

* 2020-21 is the last year of the 2017 Determination.

Table 65 - Proposed bulk water services charges Lachlan Valley 2021-22 ($2020-21)

Lachlan	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$16.56	$18.95	14.4%
GS Fixed Charge	$2.94	$2.80	-4.7%
Variable Usage Charge	$20.51	$22.42	9.3%

* 2020-21 is the last year of the 2017 Determination.

Table 66 - Proposed bulk water services charges Macquarie Valley 2021-22 ($2020-21)

Macquarie	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$14.55	$15.65	7.5%
GS Fixed Charge	$3.07	$3.06	-0.3%
Variable Usage Charge	$14.84	$15.68	5.7%

* 2020-21 is the last year of the 2017 Determination.

Table 67 - Proposed bulk water services charges Murray Valley 2021-22 ($2020-21)

Murray	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$1.66	$1.83	10.3%
GS Fixed Charge	$0.81	$0.81	-0.4%
Variable Usage Charge	$2.06	$2.29	11.0%

* 2020-21 is the last year of the 2017 Determination.

Table 68 - Proposed bulk water services charges Murrumbidgee Valley 2021-22 ($2020-21)

Murrumbidgee	40% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$3.18	$3.44	8.1%
GS Fixed Charge	$1.19	$1.18	-0.8%
Variable Usage Charge	$3.57	$3.94	10.4%

* 2020-21 is the last year of the 2017 Determination.

Table 69 - Proposed bulk water services charges Lowbidgee Valley 2021-22 ($2020-21)

Lowbidgee	100% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
Supplementary Licence Fixed Charge	$0.84	$0.85	1.4%

* 2020-21 is the last year of the 2017 Determination.

Table 70 - Proposed bulk water services charges North Coast Valley 2021-22 ($2020-21)

North Coast	90% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$12.69	$12.69	0.0%

GS Fixed Charge	$9.83	$9.83	0.0%
Variable Usage Charge	$18.77	$18.77	0.0%

* 2020-21 is the last year of the 2017 Determination.

Table 71 - Proposed bulk water services charges Hunter Valley 2021-22 ($2020-21)

Hunter	60% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$14.15	$14.37	1.6%
GS Fixed Charge	$10.98	$11.16	1.7%
Variable Usage Charge	$13.60	$14.04	3.2%

* 2020-21 is the last year of the 2017 Determination.

Table 72 - Proposed bulk water services charges South Coast Valley 2021-22 ($2020-21)

South Coast	80% Fixed Tariff Structure		
	2020-21	2021-22	Change FY21 to FY22 (%)
HS Fixed Charge	$33.19	$33.19	0.0%
GS Fixed Charge	$17.41	$17.41	0.0%
Variable Usage Charge	$18.60	$18.60	0.0%

* 2020-21 is the last year of the 2017 Determination.

Table 73 - Proposed bulk water services charges Fish River Raw Water 2021-22 ($2020-21)

Unfiltered water ($/kl)									
Customer	Access FY21	Usage FY21	Excess usage FY21	Access FY22	Usage FY22	Excess usage FY22	2020-21 to 2021-22 %		
EnergyAustralia	$0.42	$0.26	$0.68	$0.42	$0.16	$0.58	-0.5%	-37.0%	-14.5%
Oberon Council	$0.42	$0.26	$0.68	$0.42	$0.16	$0.58	-0.5%	-37.0%	-14.5%
Individual minor customers	$84.00	$0.26	$0.68	$83.59	$0.16	$0.58	-0.5%	-37.0%	-14.5%

* 2020-21 is the last year of the 2017 Determination.

Table 74 - Proposed bulk water services charges Fish River Filtered Water 2021-22 ($2020)-21

Filtered water ($/kl)									
Customer	Access FY21	Usage FY21	Excess usage FY21	Access FY22	Usage FY22	Excess usage FY22	2020-21 to 2021-22 %		
Lithgow Council	$0.68	$0.39	$1.07	$0.74	$0.31	$1.05	8.8%	-19.6%	-1.6%
Individual minor customers	$164.00	$0.50	$1.32	$147.95	$0.31	$1.05	-9.8%	-37.3%	-20.2%

* 2020-21 is the last year of the 2017 Determination.

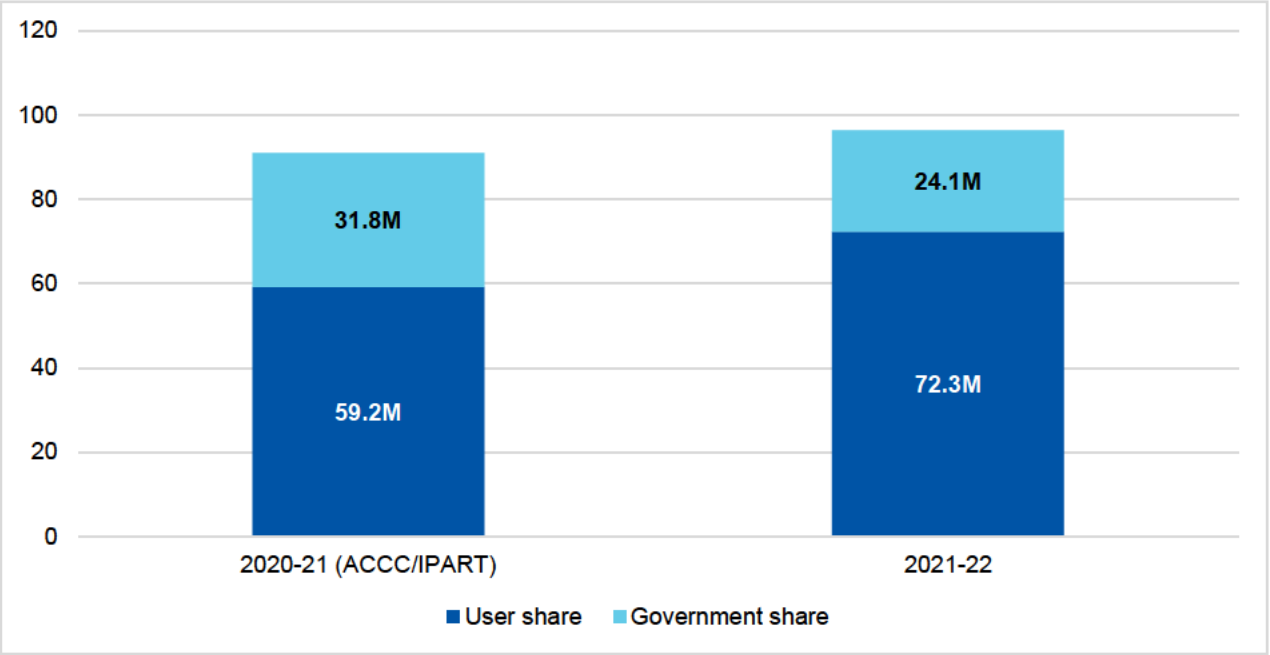
14. Impact on customers of proposed bulk water services charges

14.1 Overview

In Section 6, we note that the RAB is adjusted by actual capital expenditure incurred in the 2017 Determination 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 placeholder WACC (see Section 7), will see a reduction in the return on capital revenue component compared to the allowance in IPART's current determination as at 30 June 2021.

This revenue is then allocated between customers and the Government in line with the cost share methodology explained in Section 3.6 to arrive at the total user revenue requirement at cost reflective levels shown below:

Figure 37 - Allocation of costs between customers and the Government ($millions, $2020-21) – to be updated



The figures above show unsmoothed total revenue from 2020-21 to 2021-22

However, overall, the user revenue requirement used to set prices will remain constant in real terms as WaterNSW seeks to minimise any pricing impacts on customers, many of which are experiencing significant pressures due to drought and the global pandemic. Bill increases are as a result of the passing through of costs outside of WaterNSW's control, i.e. changes in volumes as measured by the 20-year rolling average and changes in IPART's cost sharing arrangements.

On average across all customers, customers would see an average bill increase from 2020-21 to 2021-22 of **5%**. This is due to a **4%** increase arising from changes in forecast volumes using the 20-year rolling average and an additional **1%** due to IPART's updated cost shares. This translates to a 3% increase on average for GS entitlement customers and an 8% increase on average for HS entitlement customers. Bill increases are as a result of the passing through of

costs outside of WaterNSW's control, i.e. changes in volumes as measured by the 20-year rolling average and changes in IPART's cost sharing arrangements.

The valley-by-valley bill impacts for general and high security customers are presented below.

14.2 Assumptions for bill impact analysis

In this section, we present annual price change and bill impact tables for each valley for bulk water services charges. The impact of the MDBA/BRC pass through charges has been excluded from the bill impact analysis presented below.

The bill impact tables highlight the calculated bill for a small, medium and large customer by HS and GS entitlements in each year of the 2021 Determination period. The final two columns show:

- The immediate bill impact from the end of the current determination period (2020-21) to the start of the 2021 Determination period (2021-22); and
- The percentage change for customer bills from the end of the current determination period (2020-21) to end of the 2021 Determination period (2022-23).

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

- The proposed (smoothed) user revenue requirement (see section 11.2.2), converted into a fixed and variable usage charge, using the relevant fixed to variable split, uplifted by 1% for IPART's cost sharing arrangements; and
- 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); and
    - 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 15.1.1. 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; and
- 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 11.2.2), converted into a fixed and variable usage charge, using the relevant fixed to variable split, uplifted by 1% for IPART's cost sharing arrangements;
- MAQs in the WSP for major customers, and a deemed 200 MAQ for minor customers; and
- Average water usage over 20 years for each customer type, and average water usage for EnergyAustralia.[66]

Bills have been presented in 2020-21 dollars given the uncertainty of forecast inflation due to the impacts of COVID-19.

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

Table 75 - Bill impact analysis Border Valley - indicative bills $2020-21

Border 40% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$565	$574	$9	1.7%
Medium Customer	$2,823	$2,870	$47	1.7%
Large Customer	$5,646	$5,741	$95	1.7%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,160	$1,187	$27	2.3%
Medium Customer	$5,800	$5,936	$136	2.3%
Large Customer	$11,600	$11,872	$272	2.3%

Table 76 - Bill impact analysis Gwydir Valley – indicative bills $2020-21

Gwydir 40% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,142	$1,215	$73	6.4%
Medium Customer	$5,712	$6,077	$365	6.4%
Large Customer	$11,424	$12,154	$730	6.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,472	$2,984	$512	20.7%
Medium Customer	$12,360	$14,918	$2,558	20.7%
Large Customer	$24,720	$29,836	$5,116	20.7%

Table 77 - Bill impact analysis Peel Valley - indicative bills $2020-21

Peel 80% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,620	$1,526	$94	-5.8%
Medium Customer	$8,099	$7,628	$471	-5.8%
Large Customer	$16,198	$15,257	$941	-5.8%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$6,455	$6,397	$58	-0.9%
Medium Customer	$32,275	$31,986	$289	-0.9%
Large Customer	$64,550	$63,972	$578	-0.9%

Table 78- Bill impact analysis Namoi Valley - indicative bills $2020-21

Namoi 40% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,149	$2,291	$142	6.6%
Medium Customer	$10,746	$11,457	$711	6.6%
Large Customer	$21,492	$22,913	$1,421	6.6%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$3,992	$4,839	$847	21.2%
Medium Customer	$19,960	$24,194	$4,234	21.2%
Large Customer	$39,920	$48,387	$8,467	21.2%

Table 79 - Bill impact analysis Lachlan Valley - indicative bills $2020-21

Lachlan 40% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,525	$1,625	$101	6.6%
Medium Customer	$7,623	$8,127	$504	6.6%
Large Customer	$15,246	$16,254	$1,008	6.6%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$3,707	$4,137	$430	11.6%
Medium Customer	$18,535	$20,684	$2,149	11.6%
Large Customer	$37,070	$41,367	$4,297	11.6%

Table 80 - Bill impact analysis Macquarie Valley - indicative bills $2020-21

Macquarie 40% Fixed Tariff Structure				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,197	$1,247	$49	4.1%
Medium Customer	$5,987	$6,234	$247	4.1%
Large Customer	$11,974	$12,467	$493	4.1%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,939	$3,133	$194	6.6%
Medium Customer	$14,695	$15,664	$969	6.6%
Large Customer	$29,390	$31,328	$1,938	6.6%

Table 81 - Bill impact analysis Murray Valley (customers with Water NSW owned meter) - indicative bills $2020-21

Murray 40% Fixed Tariff Structure – customer without WaterNSW owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$683	$696	$13	1.9%
Medium Customer	$1,512	$1,578	$66	4.4%
Large Customer	$2,593	$2,725	$132	5.1%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$850	$890	$40	4.7%
Medium Customer	$2,349	$2,548	$199	8.5%
Large Customer	$4,267	$4,665	$398	9.3%

Table 82 - Bill impact analysis Murray Valley (customers with customer owned meter) - indicative bills $2020-21

Murray 40% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$205	$218	$13	6.5%
Medium Customer	$1,023	$1,089	$66	6.5%
Large Customer	$2,046	$2,178	$132	6.5%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$372	$412	$40	10.7%
Medium Customer	$1,860	$2,059	$199	10.7%
Large Customer	$3,720	$4,118	$398	10.7%

Table 83 - Bill impact analysis Murrumbidgee Valley (customers with WaterNSW owned meter) - indicative bills $2020-21

Murrumbidgee 40% Fixed Tariff Structure – Customer with WaterNSW owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$811	$833	$21	2.6%
Medium Customer	$2,155	$2,262	$106	4.9%
Large Customer	$3,879	$4,092	$213	5.5%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,153	$1,216	$63	5.4%
Medium Customer	$3,864	$4,177	$313	8.1%
Large Customer	$7,297	$7,923	$626	8.6%

Table 84 - Bill impact analysis Murrumbidgee Valley (customers with customer owned meter) - indicative bills $2020-21

Murrumbidgee 40% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$333	$354	$21	6.4%
Medium Customer	$1,666	$1,772	$106	6.4%
Large Customer	$3,332	$3,545	$213	6.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$675	$738	$63	9.3%
Medium Customer	$3,375	$3,688	$313	9.3%
Large Customer	$6,750	$7,376	$626	9.3%

Table 85 - Bill impact analysis Hunter Valley - indicative bills $2020-21

Hunter 60% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,914	$1,959	$45	2.3%
Medium Customer	$9,570	$9,793	$223	2.3%
Large Customer	$19,140	$19,586	$446	2.3%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,775	$2,841	$66	2.4%
Medium Customer	$13,875	$14,205	$330	2.4%
Large Customer	$27,750	$28,410	$660	2.4%

Table 86 - Bill impact analysis North Coast Valley - indicative bills $2020-21

North Coast 90% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,109	$2,109	$0	0.0%
Medium Customer	$10,546	$10,546	$0	0.0%
Large Customer	$21,092	$21,092	$0	0.0%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$3,146	$3,146	$0	0.0%
Medium Customer	$15,730	$15,730	$0	0.0%
Large Customer	$31,460	$31,460	$0	0.0%

Table 87 - Bill impact analysis South Coast Valley - indicative bills $2020-21

South Coast 80% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$2,857	$2,857	$0	0.0%
Medium Customer	$14,285	$14,285	$0	0.0%
Large Customer	$28,570	$28,570	$0	0.0%
Indicative bills - HS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$5,179	$5,179	$0	0.0%
Medium Customer	$25,895	$25,895	$0	0.0%
Large Customer	$51,790	$51,790	$0	0.0%

Table 88 - Bill impact analysis Lowbidgee Valley - indicative bills $2020-21

Lowbidgee 100% Fixed Tariff Structure – Customer with customer owned meter				
Indicative bills - GS	**2020-21**	**2021-22**	**Change ($)**	**Change (%)**
Small Customer	$1,680	$1,703	$23	1.4%
Medium Customer	$16,800	$17,030	$230	1.4%
Large Customer	$84,000	$85,152	$1,152	1.4%

*Small Lowbidgee customers are assumed to hold 2,000ML of entitlements, medium customers are assumed to hold 20,000ML and large customers are assumed to hold 100,000ML

Table 89 - Bill impact analysis Fish River Valley (raw water customers) - indicative bills $2020-21

Indicative bills raw water customers Fish River Scheme			
	2020-21	**2021-22**	**Change %**
Energy Australia	$4,778,103	$4,265,164	-10.7%
Oberon Council**	$631,428	$560,956	-11.2%
Individual minor customers	$413	$353	-14.5%

* For the purpose of this bill impact analysis, we have assumed usage of 710ML for Oberon Council based on a 20 year rolling average from 1996-97 to 2015-16. Using data from 1999-2000 to 2018-19 would result in a lower forecast of 686ML.

Table 90 - Bill impact analysis Fish River Valley (filtered water customers) - indicative bills $2020-21

Indicative bills filtered water customers Fish River Scheme			
	2020-21	**2021-22**	**Change %**
Lithgow Council	$1,533,410	$1,576,044	2.8%
Individual minor customers	$601	$479	-20.2%

14.3 Bill impact on customers including MDBA pass-through charges

As discussed in section 2.6.1, 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).

Table 91 - Bill impact analysis for BRC charges Border Valley - indicative bills $$2020-21

Border				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$235	$392	$156	66.4%
Medium Customer	$1,177	$1,958	$781	66.4%
Large Customer	$2,354	$3,916	$1,562	66.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$581	$980	$399	68.7%
Medium Customer	$2,905	$4,900	$1,995	68.7%
Large Customer	$5,810	$9,800	$3,990	68.7%

* 2020-21 is the last year of the 2017 Determination.

Table 92 - Bill impact analysis for MDBA charges Murray Valley - indicative bills $2020-21

Murray				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$480	$707	$227	47.4%
Medium Customer	$2,398	$3,535	$1,137	47.4%
Large Customer	$4,796	$7,070	$2,274	47.4%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$944	$1,511	$567	60.1%
Medium Customer	$4,720	$7,555	$2,835	60.1%
Large Customer	$9,440	$15,110	$5,670	60.1%

* 2020-21 is the last year of the 2017 Determination.

Table 93 - Bill impact analysis for MDBA charges Murrumbidgee Valley - indicative bills $2020-21

Murrumbidgee				
Indicative bills - GS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$85	$124	$39	45.8%
Medium Customer	$424	$618	$194	45.8%
Large Customer	$848	$1,236	$388	45.8%
Indicative bills - HS	**2020-21**	**2021-22**	**Change $**	**Change %**
Small Customer	$206	$322	$116	56.3%
Medium Customer	$1,030	$1,610	$580	56.3%
Large Customer	$2,060	$3,220	$388	56.3%

* 2020-21 is the last year of the 2017 Determination.

15. Other charges

This section outlines WaterNSW's approach to the following charges:

- Meter service charges;
- Miscellaneous charges;
- Water trading charges;
- Environmental gauging station charges;
- Refundable meter accuracy deposit; and
- Fish River connection / disconnection fees.

The following sections outline WaterNSW's proposed approach to these charges.

15.1 Water take measurement services

WaterNSW owns and operates surface water meters (telemetry and non-telemetry enabled) in the regulated valleys. 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.[67]

The meter service charge (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.

15.1.1 Meter service charges

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); and
- Administration costs incurred by WaterNSW including associated overhead.

The MSC will be maintain at current charging levels in real dollars as shown below.

Table 94 – Meter service charges $2020-21

Meter Service Charges	2020-21	2021-22
50mm	475.92	475.92
80mm	478.14	478.14
100mm	478.13	478.13
150mm	483.75	483.75

[67] 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.

Meter Service Charges	2020-21	2021-22
200mm	486.52	486.52
250mm	489.10	489.10
300mm	495.74	495.74
350mm	525.61	525.61
400mm	543.39	543.39
450mm	546.82	546.82
500mm	561.39	561.39
600mm	580.05	580.05
700mm	602.23	602.23
750mm	633.28	633.28
800mm	654.27	654.27
900mm	660.92	660.92
1,000mm	673.20	673.20
Channel	6,237.43	6,237.43

15.1.2 Meter reading and water assessment services

Given the uncertainty around the policy and operational landscape and the associated costs of metering reform, **WaterNSW has excluded the costs of non-urban metering reform from this pricing proposal**. If necessary, WaterNSW will provide cost forecasts to IPART during the review process, by end December 2020, for IPART's consideration and inclusion in the Final Determination. With respect to our base operating requirements (excluding the impact of the metering reforms) we will be investigating different options for meter reading and water use assessment costs in anticipation of the 2022 price review.

15.2 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 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.

Miscellaneous charges will be maintained at current charging levels in real dollars as shown in the table below.

Table 95 - List of proposed miscellaneous charges ($2020-21)

Miscellaneous Charge	2020-21	2021-22
Trade processing charge	49.37 per trade application	49.37 per trade application
Environmental gauging station charge	12,640.42 Per gauging station	12,640.42 Per gauging station
Refundable meter accuracy deposit for verification and testing in situ	4,626.39 testing charge and 1,750 deposit	4,626.39 testing charge and 1,750 deposit
Refundable meter accuracy deposit for laboratory verification and testing	6922.88 testing charge and 1,750 deposit	6922.88 testing charge and 1,750 deposit
Fish River connection charge	Low complexity: • $916.30 per connection Medium complexity • $ 3,474.18 per connection High complexity • $7,103.19 per connection	Low complexity: • $916.30 per connection Medium complexity • $ 3,474.18 per connection High complexity • $7,103.19 per connection
Fish River disconnection charge	257.96 per disconnection	257.96 per disconnection

15.3 Water trading charges

15.3.1 Trade processing charge

WaterNSW currently levies an allocation trade processing charge, which applies to all trade applications for allocation assignments (including intravalley, intervalley and interstate allocation assignments).

We propose to retain the current trade processing charge of $49.37 per trade application in real terms ($2020-21) in the 2021 Determination on the basis that it will recover administrative costs of processing individual trade applications.

15.4 Environmental gauging station charge

WaterNSW operates a number of environmental gauging stations which 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. The charge was carried forward into the 2017 Determination.

National standards for water meters have been developed under the National Water Initiative (NSWI) 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 environmental gauging stations reach end of life, they need to be replaced by an upgraded station that meets the new standard.

The environmental gauging station charge consists of the following:

- 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.

WaterNSW is proposing a continuation of the environmental gauging station charge of $12,640.42 ($2020-21) per gauging station in the 2021-22 determination.

15.5 Refundable meter accuracy deposit

WaterNSW is proposing a continuation of meter accuracy deposit and verification and testing charges in real terms ($2020-21) over the 2021 Determination period.

We currently levy a refundable deposit for resolving meter disputes of $1,750 levied upon request from the customer to have their Government meter tested or verified for accuracy. 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.

In the 2014 Determination, it was determined that the charge deposit was significantly below the costs of carrying out the works associated with meter accuracy verification and testing in situ. In response, IPART determined an in-situ verification and testing charge of $4,626.39 and a laboratory verification and testing charge of $6,922.88. If the meter is found to be within accuracy the relevant testing charge applies, and the deposit is forfeited.

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.

15.6 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.

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.

As a result, IPART has determined connection charges based on the complexity of the connection as follows:

- Low complexity connections are charged a $916.30 connection fee;
- Medium complexity connections are charged a $ 3,474.18 connection fee; and
- High complexity connections are charged a $7,103.19 connection fee.

We are proposing to retain the above charges in real terms ($2020-21) in the 2021 Determination.

We are also proposing retain the disconnection fee at the current rate of $257.96 ($2020-21).

16. Impacts on financeability

WaterNSW supports IPART's use of the financeability test and encourages IPART to ensure that its final determination supports an indicative credit rating that is 'investment grade' of Baa1 or above.

In 2018, IPART reviewed the financeability test it uses as part of its price regulation process. When making price determinations for regulated businesses, IPART uses a financeability test (the 2018 test) to assess how its pricing decisions are likely to affect the business's financial sustainability and ability to raise funds to manage its activities, over the regulatory period.[68]

IPART previously reviewed the financeability test in 2013[69] (the 2013 test) and made small changes in early 2015.[70] The general feedback IPART received from stakeholders during consultation for the 2018 test was that the 2013 financeability test worked well and that reviewing the approach to financeability is "*important in ensuring that IPART's approaches to regulation remain fit for purpose over time, reflect evolving regulatory best practice, and are well understood by all stakeholders*."[71]

The objectives of the financeability test are to:

- Ensure IPART's pricing decisions would allow an efficient investment grade rated business to raise finance during the regulatory period (benchmark test); and
- Assess whether the utility would meet this benchmark (actual test) during the regulatory period.

IPART's 2018 test maintains a number of elements from the 2013 test, including that IPART will continue to:

- Conduct a quantitative assessment of financeability
- Conduct a financeability test if:
  - the prices IPART regulates determines the revenues of the business, and
  - the business has, or is part of an entity with, a distinct capital structure;
- Conduct the test on the regulated portion of the business, as a default, and
- Retain a BBB[72] target credit rating.

IPART made a number of refinements in its 2018 test, including to:

- Incorporate both a benchmark test (assuming a real cost of debt), and an actual test (using the business's actual cost of debt);
- Set a single target ratio for each financial metric rather than a range (as per the 2013 test) to increase simplicity and eliminate the overlap of ratios;
- Adopt a clearer process for identifying a financeability concern; and
- Tailor the remedy for a financeability concern to its source.

[68] IPART Review of our financeability test – Final Report, November 2018. Page 1.
[69] Refer to https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_decision_-_financeability_tests_in_price_regulation_-_december_2013.pdf
[70] Refer to https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/fact_sheet_-_final_decision_-_financeability_ratios_-_april_2015.pdf
[71] Ibid. Page 1. The quotation provided refers to the SDP submission to the IPART Issues Paper, June 2018, page 1.
[72] According to IPART, an S&P Global credit rating of BBB is equivalent to a Moody's Baa2 credit rating. Note that we use a BBB credit rating when setting the Weighted Average Cost of Capital (WACC). Financeability Test Final Report November 2018, page 2.

In setting prices, IPART aims to ensure that utilities are financially sustainable so that they can recover their efficient costs over the long-term. Under IPART's building block model, IPART sets prices to recover the efficient costs of a benchmark business. This includes a market-based rate of return for equity and debt holders. Robust financial health of utility businesses is generally considered to be in the best interests of customers.

If a service provider is not financially viable, it may not be able to guarantee services to customers and this may result in higher prices over the long term. Poor financial health may also lead to under-investment in assets and / or their maintenance, which could in turn lead to higher lifetime expenditure on assets (and consequently higher prices) and poorer quality services.

IPART's financeability test assesses the short-term financial sustainability of the utility – whether the utility will be able to raise the necessary debt financing, consistent with an investment grade-rated firm, during the regulatory period.

16.1.1 Target credit rating

IPART intends to use the same target credit rating in the financeability test as it uses when setting the WACC. According to IPART, this target credit rating ensures consistency with the WACC and achieves the objectives of the financeability test to assess whether the regulatory decisions are sufficient to maintain the financeability of a benchmark efficient business.

Based on the credit rating metrics calculated in IPART's water model (provided as an attachment to this pricing proposal), the revenues and prices proposed by WaterNSW would result in acceptable financial and credit rating metrics.

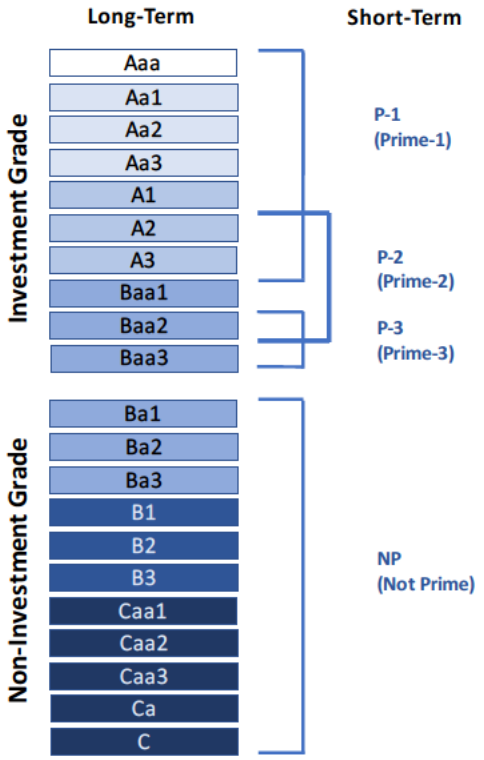
IPART uses the S&P Global BBB credit rating when setting the WACC. An S&P Global BBB credit rating is equivalent to a Moody's Baa2 credit rating and a Fitch Rating BBB credit rating.[73]

IPART's 2018 test sets a threshold (i.e., a minimum or maximum) value for each ratio that a BBB rated business would meet under IPART's building block approach. According to Moody's, any of the 'Baa' ratings suggests moderate credit risk, with firms "considered medium-grade and as such may possess speculative characteristics".[74]

As outlined in Figure 38 below, a credit rating in the Baa range is at the low end of what Moody's considers 'investment' grade.

[73] IPART Review of our financeability test – Final Report, November 2018. Page 35.
[74] Moody's Rating Scale and definitions, https://www.moodys.com/sites/products/ProductAttachments/AP075378_1_1408_KI.pdf

Figure 38 – Moody's rating scale



Source: Moody's rating scale[75]

WaterNSW supports IPART's use of the financeability test and encourages IPART to ensure that its final determination supports an indicative credit rating that is 'investment grade' of **Baa1 or above**.

16.1.2 Financeability assessment

WaterNSW's Rural Valley business is likely to experience significant financial stress in 2021-FY22 and beyond as:

- The placeholder WACC falls from 3.1% to 1.7% (45%) for the MDBA valleys;
- IPART's expected use of its approach to forecasting inflation (2.3%[76] using its current methodology) as opposed to the market's expectation of actual inflation (1.25% to 1.5% on average) further exacerbates the impact of a lower WACC. If the market's inflation expectations materialise, the effective WACC provided by IPART would be an WACC that is below 1%. This would not be sufficient to cover the efficient cost of debt or to attract capital to the sector by infrastructure investors; and
- We have assumed a volume forecast based on IPART's 20-year rolling average from the 2017 Determination. However, should this not arise and the drought continues, there is the potential for a significant shortfall in revenue in 2021-22 as has occurred in 2018-19 and 2019-20 (and expected for 2020-21). We are looking to extend our risk transfer product for one year to align to the 2021 Determination period to hedge against this risk and have included our forecast costs of the product in this proposal. However, it is likely that given the product has enabled WaterNSW to recover significant revenue shortfalls over the two previous financial years which is expected to continue in 2020-21, it is entirely possible that the product may be prohibitively expensive moving forward.

[75] Ibid. Page 1.
[76] See IPART's 2020 Greater Sydney bulk water determination. Page 163.

As illustrated below, even under the best case scenario, i.e. inflation in-line with IPART's forecast and our volume assumptions perfectly match the 20-year rolling average, the credit rating metrics are already constrained.

Table 96 – Financeability ratios

Financeability Ratios		
	2020-21	2021-22
FFO / Interest	1.9	1.5
FFO / Net Debt	4.2%	2.1%
Net Debt / RAB	60%	60%

Figure 39 – Funds from operations divided by interest

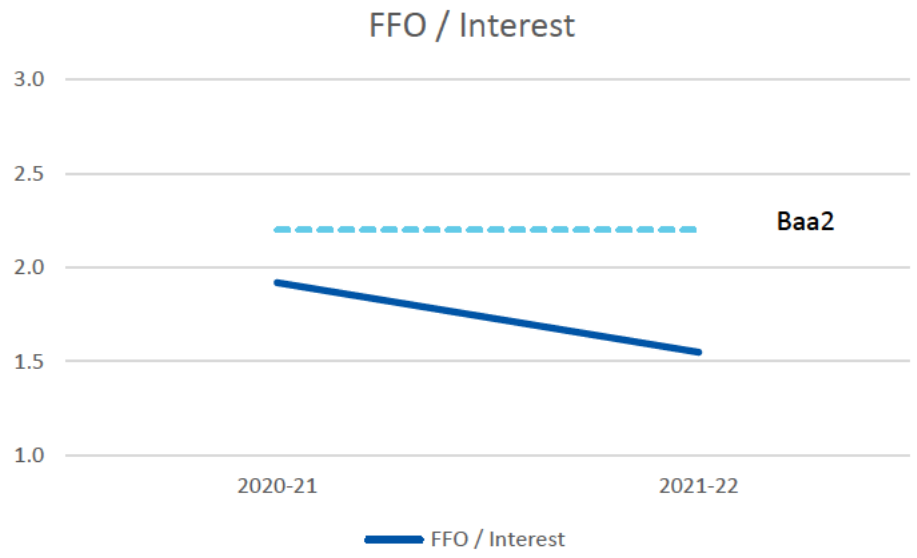
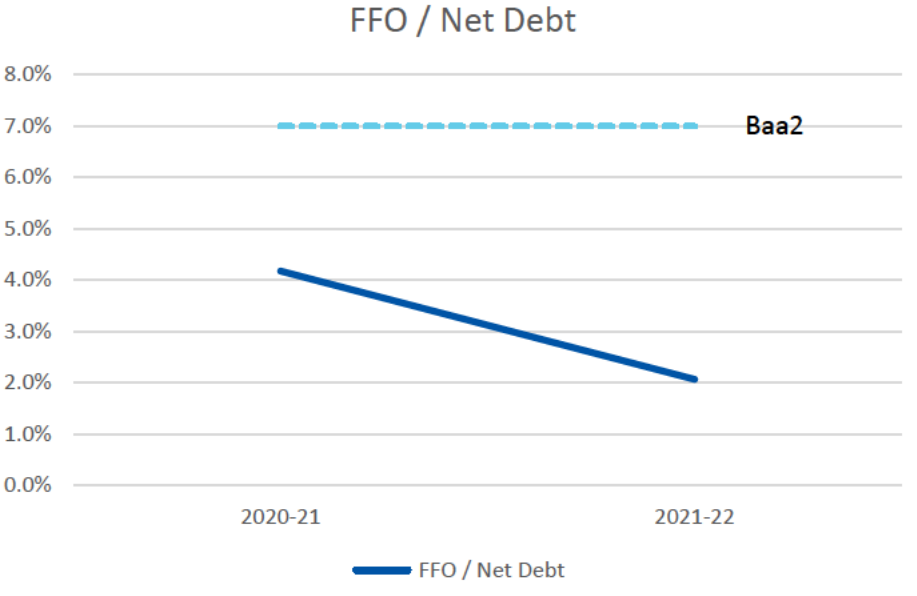


Figure 40 – Funds from operations divided by net debt



In constructing notional financial statements with "notional" inputs, we have used revenue, operating expenditure, capital expenditure and WACC assumptions consistent with this Rural Valley pricing proposal.

For 2021-22, we have used the revenue requirement assumption of $88.3 million which is $8.3 million below the cost reflective revenue requirement of $96.4 million (i.e. WaterNSW does not receive a Government CSO for the $8.3 million shortfall).

Other assumptions we have made in applying the financeability test are:

- Interest rate of 3.9% pre-tax nominal – representing a weighted average of the ACCC WACC and the IPART WACC by proportion of MDB/IPART RAB in 2021-22;
- Gearing of 60% - which is consistent with WaterNSW's Statement of Corporate Intent (SCI)' and
- FFO has been calculated based on Accounts Receivable Days of 30 and Accounts Payable Days of 45
- No adjustments for operating leases or pension adjustments are necessary

At the 60% notional (and actual) metric of 'Net Debt / RAB' gearing level, the 'FFO / Interest' ratio & 'FFO / Net Debt' is below the Baa Moody's credit rating sub-factor band and within the "Ba" Moody's credit rating sub-factor band.

This means that, based on this assessment, for the 2021 Determination period there will be significant downside risk to our financeability, given the "Ba" FFO / Interest ratio is expected to trend towards the 'B' credit rating in 2021-22.

We consider that financeability could be exacerbated even further, if the assumptions are varied – such as WACC, inaccurate forecast of expected water sales or asset lives.

In addition, while Water NSW may be able to maintain its financeability requirements in the 2021 Determination period, there is no doubt that there is a need for revenue protection if the continuation of the RTP becomes uneconomic. Managing volume volatility will be a key consideration in the upcoming determinations.

17. 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
FFO	Funds from operations
GL	Gigalitre
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

18. Quality assurance

sapere research group

29 June 2020

Mr Stevan Munic
Regulatory Economist
WaterNSW
Level 13, 169 Macquarie Street
Parramatta, NSW 2150

WaterNSW Rural Bulk Water Services from 1 July 2021 Pricing Proposal
Quality Assurance Review Findings

Sapere Research Group ("**Sapere**" or "**we**") has undertaken quality assurance procedures over the WaterNSW Pricing Proposal to the Independent Pricing and Regulatory Tribunal: Regulated prices for Regulated prices for NSW Rural Bulk Water Services 1 July 2021 to 30 June 2022 (**Pricing Submission**) prepared by WaterNSW. 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, in accordance with the following guidelines provided by IPART [Guidelines for Water Agency Pricing Submissions November 2018]:

1. Information in your pricing submission is consistent with the information return (AIR and SIR), your financial accounts, and reports against output measures, as relevant. Where there are variations in figures, these need to be explained.
2. Figures in your pricing submission are accurate and correctly sourced. The figures need to sum correctly. Your use of nominal or real dollars should also be explained in clear and simple terms so that stakeholders can follow the logic of their use.
3. Your pricing submission addresses all the information we have requested (such as in the SIP or the Issues Paper, these Guidelines, or in correspondence [for the purpose of this QA -- IPART's SIP letter]).
4. Your pricing submission includes proposed prices for all your regulated services.

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. reviewing non-financial information;
2. reviewing the methodology applied by WaterNSW;
3. reviewing supporting documents, which were previously developed for other purposes (e.g. Cost Allocation Manual);
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 matters which we believe WaterNSW has subsequently addressed.

We understand that to meet the performance measures reporting requirements for the Rural Valleys submission WaterNSW will include an attachment of their performance against the measures set at the last review alongside the submission. This attachment and the customer complaints information in the submission will be updated later in September for the 2019-20 financial year results if required by IPART, which we understand has been acceptable practice for IPART in the past.

We understand that IPART requested a capex forecast from 2021-22 to 2030-31. However, to be consistent with reporting period specified in the Treasury Guidelines TPP 05-2 Reporting and Monitoring Policy for Government Businesses, a capex forecast is only available up to 2029-30[1]. We understand that this was accepted for the Greater Sydney submission and hence, we assume this limited forecast will also be acceptable in the Pricing Submission.

These qualifications aside, we conclude that we have no reason to believe that the WaterNSW's Pricing Submission does not comply.

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.

Dr Richard Tooth
Director
Sapere Research Group Pty Ltd

Sydney
29th June 2020

1 https://www.treasury.nsw.gov.au/sites/default/files/pdf/TPP05-2_Reporting_and_Monitoring_Policy_for_Government_Businesses.pdf

19. Chief Executive Officer's Declaration

In accordance with the Guidelines for Water Agency Pricing Submissions, November 2018 (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 2020 is the best available information of the financial and operational affairs of WaterNSW and has been checked in accordance with the Guidelines; 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 Acting Chief Executive Officer:

_____

Andrew George
Acting Chief Executive Officer

Dated

Appendix 1 – Legislative framework

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."

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 1.5.3 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.

Operating licence

Obligations

WaterNSW is licensed under the WaterNSW Operating Licence (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; and
- Conferred functions.

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.77

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;

[77] Refer to http://www.waternsw.com.au/__data/assets/pdf_file/0003/65676/Conferred-Functions-Statement-Oct-2013.pdf

- 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;
- 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”.

Customer advisory groups

In 1999, we established Customer Consultative Committees (CSCs), now known as customer advisory groups (CAGs) as required under our previous operating licence. The valley-based CAGs are:

- Murrumbidgee
- Border Rivers
- Murray
- Greater Sydney
- Coastal/Hunter
- Barwon-Darling
- Lachlan
- Gwydir
- Macquarie
- Namoi Peel.

CAGs 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 (e.g. power generation, mining, growers associations, etc);
- Irrigation associations; and
- Commonwealth Environmental Water Office (CEWO).

CAGS 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 CAGs 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.

Customer complaints

Complaints were at low levels through the period except for one specific issues in relation to the metering charges in the Hawkesbury Nepean region This issue caused complaint volume to increase in late 2017-18 and carry through into 2018-19 causing our median days to resolve increasing from our normal levels. This issue was resolved in December 2018.

	2017-18	2018-19
Customer complaints outstanding at the beginning of the financial year	17	147
New complaints received	316	82
Complaints resolved/closed	186	226
Customer complaints outstanding at the end of the financial year	147	3

CSC customer service charter

In accordance with the Licence we must, in consultation with the CAGs, 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.[78]

Each year by no later than 1 September, we report to IPART our overall performance against our obligations under the Licence.

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.

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;

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;

[78] 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.

Our performance against these indicators are audited by IPART as part of the annual operating licence review.

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%.

Dam safety compliance

Prior to the passage of new legislation, WaterNSW managed its prescribed79 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.[80]

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

[79] Prescribed dams are those listed in Schedule 1 of the Dams Safety Act 1978.
[80] The Hon. Blair N. Minister for Primary Industries, and Minister for Lands and Water, Second Reading Speech Dams Safety Bill 2015, 16 September 2015.

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:

- 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; and
- 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.

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; and
- 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

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; and
- 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

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.

Other regulatory service obligations

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; and
- Customer education and communication.

Appendix 2 – Regulatory methodologies and estimates of the market risk premium

Table 98 below reproduces Table 6.2 from the Independent Competition and Regulatory Commission for the ACT (ICRC) Draft Report for regulated water and sewerage service prices 2018-23 in the ACT. The table, while not exhaustive, highlights that a number of regulators, including IPART, apply both historic and current market data when calculating the market risk premium (MRP).

As an example, and not included in the table below, we also note that IPART, in its 2020 Greater Sydney Draft Determination for bulk water prices identified a current MRP of 9.7%.

This is contrasted with the results provided below, which highlight the ACCC's predominant use of historical evidence when calculating the MRP for water. We note that the ACCC in some cases has placed a level of weight on current data (i.e. NBN, telecommunications, rail).

Table 97 - Regulatory methodologies and estimates of the market risk premium

Table 6.2 Regulatory methodologies and estimates of the market risk premium

Regulator (sector)	Methodology	Time	Estimate
ACCC (Australia Post)	Historical evidence and other regulatory decisions, AER rate of return guidelines	December 2015	6.0
ACCC (NBN)	Current one-year MRP of 10.5 per cent, transitioning to long-term average of 7 per cent over 10 years. Estimated by applying constant premium per unit of risk (implied volatility) of 7/14 for 1-year options on ASX 200 index. Supported by historical data adjusted for franking tax credits.	December 2013	7.0
ACCC (Telecommunications fixed-line services)	Most weight on historical estimates, various periods 1883–2014. Supported by evidence from 7 surveys over the period 2013–2015, conditioning variables (dividend yields, credit spreads and implied volatility, regulatory decisions). No weight to dividend growth models. No clear consensus on relationship between market risk premium and risk-free rate.	October 2015	6.0
ACCC (Hunter Rail Coal Network)	Most weight on historical returns, various periods 1883–2015 and 8 surveys over the period 2013–2015. Previous regulatory decisions for ARTC, NSW bulk water, fixed-line telecommunications services.	April 2017	6.0
ACCC (Bulk water in the Murray–Darling Basin)	Historical returns, 13 surveys 2005–2013.	June 2014	6.5
AER (Energy network businesses guidelines)	Estimate a range based on various sources including historical returns as primary sources, with consideration given to dividend growth models, survey evidence, conditioning variables (dividend yields, credit spreads and implied volatility). Point estimate gives greatest consideration to historical averages, significant	December 2013	6.5

Regulator (sector)	Methodology	Time	Estimate
	consideration to dividend growth estimates, some consideration to survey estimates and limited consideration to conditioning variables and other regulators' estimates.		
AER (Electricity networks in various jurisdictions)	As above	October 2015	6.5
ESC (Water)	Not specified	June 2016	6.0
ESCOSA (Water)	Historical approach	June 2016	6.0
ERA (Gas distribution)	Broad range of material, standard CAPM and dividend growth models; historical and forward-looking models used to establish a range from 5.4 to 8.8 per cent.	June 2016	7.4
ERA (Rate of return guidelines)	As above, with a range of 5.0 to 7.5 per cent using historical averages and dividend growth model. Contradictory evidence of relationship between risk-free rate and MRP.		5.0 to 7.5
IPART (Water)	Average of long-term and current market data estimates, providing a range of 5.5 per cent to 9.8 per cent	June 2016	7.35
QCA (Dalrymple Bay Coal Terminal)	Historic returns as primary sources, with consideration given to survey evidence, Wright method, dividend growth model, volatility measures, corporate debt premiums, liquidity premiums, consideration of relationship between MRP and risk-free rate. MRP more stable than return on equity. Changing relationship between MRP and risk-free rate.	November 2016	6.5
QCA (Gladstone Area Water Board)	Same factors as above.	May 2015	6.5
QCA (Market parameters decision)	Same factors as above.	August 2014	6.5

Sources: ACCC 2017: 143–9, ACCC 2015a: 30, ACCC 2015b: 68–77, 88–9, ACCC 2013: 98, AER 2013a: 90–7, ESC 2016: 53, ESC 2015: 28, ESCOSA 2016: 124, ERA, 2016: 126, ERA, 2013: 136–60, IPART 2016: 125, QCA 2016: 75–80, QCA, 2015; QCA, 2014: 15–23.

We request that IPART consider the evidence provided above when assessing the appropriate rate of return for the MDB valleys and applying the ACCC's pricing guidelines.

Appendix 3 – WACC and inflation and financeability – IPART valleys

Our proposed 'placeholder' rate of return for the 2021 Determination period is 3.2% based on IPART's post-tax real framework, with annual updates to the cost of debt.

Proposed method and rate of return

The return on capital covers the cost of servicing our debt and provides a return to our shareholders for their equity investment in our business. It is calculated by multiplying the value of our regulated asset base by the rate of return on capital. WaterNSW is proposing to apply the Weighted Average Cost of Capital (WACC) methodology for determining the rate of return on capital.

The WACC is the minimum ('benchmark') financial return an investor requires from an investment given its risk before committing additional capital. It is the sum of weighted average returns expected from the two types of capital invested – debt and equity.

In determining the appropriate rate of return, economic regulators strive to provide an allowance as reasonably accurate as possible to ensure that customers do not pay more than necessary and that the regulated firms will be financially viable and have the incentive to invest in the efficient level of productive assets.

In this section, we outline an approach to calculating the WACC based on IPART's standard methodology. As part of IPART's methodology, market data will be updated closer to the Draft and Final Determinations. Therefore, the WACC proposed in this section is considered a '**placeholder**' as it will be updated during the review process. Our proposed approach to inflation is provided in Section 10.5 below.

Why is it important?

The return on capital makes up approximately 18 per cent of the revenue allowance that we need to provide rural bulk water services.

If the rate of return is set too low, we may not be able to secure the funds needed to invest in bulk water infrastructure, which could negatively impact on customer service levels. If it is set too high, our customers could pay too much for our services.

IPART's method for determining the appropriate WACC

We have estimated the rate of return by applying IPART's method for estimating and determining the WACC as published in the IPART Final WACC Report in 2018 (the 2018 WACC Methodology)[81] and as outlined in IPART's consultation on the debt margin as part of the Greater Sydney Determination process for bulk water in Greater Sydney.[82] We propose that IPART adopts this methodology in its 2021 Determination.

[81] See *IPART Review of our WACC method – Final Report 20018*. https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/final-report-review-of-our-wacc-method-february-2018.pdf

[82] See IPART https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/regulatory-framework-regulatory-policy-sea-weighted-average-cost-of-capital-wacc-models/wacc-publications/fact-sheet-wacc-consultation-on-debt-margin-april-2020.pdf

IPART's 2018 WACC Methodology is based on a 'post-tax real' framework. The methodology includes sector-wide parameters and applies financial market information as published by IPART in its Bi-annual WACC Update from February 2020[83]. The methodology requires annual updates to the cost of debt during the regulatory period using updated market information. Whether the revenue impact of the annual cost of debt updates is addressed at each annual price change or held and adjusted at the subsequent determination is a separate decision point that is addressed below.

We consider that IPART's methodology (subject to our concerns regarding IPART's approach to forecasting inflation outlined below), is a reasonable proxy for our benchmark cost of capital and is in the best interests of customers for the Rural Valleys 2021 Determination.

Cost of debt

IPART has indicated it will:

- Initially set the historic cost of debt as a 10-year average, with the interest rate for each annual tranche estimated over a consistent 40-day period; and
- Update the historic cost of debt from the beginning of the second year of the regulatory period, by averaging the interest rates of each annual tranche of debt.

WaterNSW supports IPART's methodology for calculating the current cost of debt as outlined above. We seek to engage with IPART during the review process as to whether applying a transition for the current cost of debt is appropriate in the circumstances.

How to pass through annual changes

Under IPART's new trailing average approach for estimating the historic and current costs of debt, IPART needs to update its decision on the cost of debt each year.[84]

IPART will decide whether to apply annual price adjustments or a true-up on a case-by-case basis, as part of its review process. In making this decision, IPART will have regard to any evidence the regulated firm or its customers put forward to support one approach or the other, with neither option a default.

While WaterNSW's general preference is to seek annual updates to the cost of debt, we note that the need to update the cost of debt would not arise during the 2021 Determination given our proposal for a one-year determination period. WaterNSW will revisit this matter as part of the 2022 Determination period.

Cost of equity

The cost of equity is calculated using the Capital Asset Pricing Model (CAPM). The average cost of equity across the entire market comprises a **risk-free rate** (representing the rate an investor would receive for zero risk to their capital) plus a premium that reflects the additional systematic risk a marginal equity investor bears (representing the average premium the investor would be willing to accept for a less-than-certain return). This is premium is known as the market risk premium ("**MRP**").

The CAPM requires the use of an '**equity beta**', which measures the sensitivity of a business's return compared to upturns and downturns in overall market returns. More specifically, the CAPM is applied using econometrically estimated equity betas combined with the risk free rate

[83] See https://www.ipart.nsw.gov.au/Home/Industries/Special-Reviews/Regulatory-policy/WACC/Market-Update/Spreadsheet-WACC-model-February-2019
[84] IPART Review of our WACC method – Final Report, February 2018. Page 38.

(or more accurately, the required return on a zero beta portfolio) being proxied by yields on nominal government bonds.

Under its 2018 WACC Methodology, IPART will continue to determine the cost of equity as the midpoint between its estimates of the current and historic cost of equity at the start of the regulatory period, and to not update this cost during the regulatory period.

If there are market extremes occurring (as measured by IPART's Uncertainty Index) IPART may consider moving away from the mid-point. Water NSW notes that in April 2020 IPART advised that its Uncertainty Index was operating outside the 'normal' control limit of +/- 1 standard deviation from the long term mean.

Gearing

IPART typically adopts a mid-point gearing level (debt to debt-plus-equity ratio) of 60% for regulated water businesses. WaterNSW considers that the assumptions underpinning the gearing level from the 2017 Determination remain appropriate and a gearing level of **60%** should be maintained for the 2021 Determination.

Equity beta

IPART currently uses the Sharpe Lintner (SL) CAPM to calculate the cost of equity. According to this model, only systematic risk affects the expected return required by the marginal equity investor. This is because the marginal investor would hold a well-diversified portfolio of equities, and a diversification strategy can remove firm-specific risk.

Equity beta is generally measured as the covariance between a firm's share price and that that of the market:

- An equity beta of one implies that the firm's stock is the same as for the market as a whole at each point in time. This, simplistically, suggests the firm has a similar risk profile to the market as a whole;
- An equity beta below one implies that the firm's rate of return is less sensitive to upturns and downturns than the market overall; and
- An equity beta above one implies that the firm's rate of return is more sensitive to upturns and downturns than the market overall.

The SLCAPM is applied using econometrically estimated equity betas combined with the risk free rate (or more accurately, the required return on a zero beta portfolio) being proxied by yields on nominal government bonds.

IPART's determined equity beta for the water industry applied in the 2017 Determination is **0.7**. IPART has proposed to revise its approach to calculating the equity beta (see our 22 May 2020 response to the IPART consultation on equity beta) which we anticipate will be applied to the 2021 Determination.

WaterNSW proposes an **equity beta of 0.7** for the 2021 Determination period.

IPART's proposed approach to beta calculation

On 1 April 2019, and as part of the WaterNSW Greater Sydney Determination process, IPART published a Fact Sheet[85] asking stakeholders to comment on a new method of using market data to estimate the equity beta used in the return on equity calculation.

[85] IPART Fact Sheet on equity beta. https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/fact-sheet-estimate-equity-beta-1-april-2019.pdf

This new method implements the decisions IPART made in its 2018 WACC Review to improve the way it estimates the equity beta. IPART stated that:

> *To illustrate how this method would work, we have estimated a water industry beta using our new method. However, we have not applied this estimate in the three current water price reviews, as we are still developing this process and we have not yet consulted with stakeholders on the new method. Instead, we have applied our existing water industry beta in those reviews. We note that our current standard water industry beta (0.7), is similar to the estimate derived here (0.74). We would have regard to the equity beta estimated with this method along with other evidence on beta in our future WACC decisions.*[86]

As part of the Greater Sydney Determination process, IPART is reviewing its criteria for proxy selection, and its list of comparator companies that meets its criteria at the start of the price review. It will give stakeholders the opportunity to propose additional comparable industries that meet its criteria, but not individual stocks. Comments on IPART's approach to applying the new equity beta were provided to IPART on 22 May 2020 and have not been considered further in this pricing proposal.

In calculating the equity beta, IPART has stated it will:

- Continue to use the SLCAPM as its foundation model;
- Use the broadest possible selection, but exclude thinly traded stocks to improve its selection of proxy companies;
- Amend its proxy selection process to make it more transparent, predictable and replicable for stakeholders; and
- Continue to use the Vasicek adjustment, but no longer use the Blume adjustment to refine its approach to mitigating estimation bias in raw Ordinary Least Squares (OLS) beta estimates.

We support these improvements.

WaterNSW requests the opportunity to comment on IPART's approach to proxy selection during the course of the 2021 Determination.

Market Risk Premium

Under the 2018 WACC methodology, IPART will continue to measure the **historic MRP as a range with a midpoint of 6%**.

IPART has, however, modified its earlier approach and measures for estimating the current MRP.

While IPART will still estimate the current MRP value using six different methods and then select a single point estimate, IPART will modify one of the methods – the market indicator method – by replacing two of the indicators previously used (the dividend yield and the risk-free rate) with a single new indicator (earnings yield less the risk-free rate).

IPART will also modify the way its selects a single point estimate for the current MRP to:

- Combine the estimates derived by the five dividend discount model (DDM) methods into a single DDM MRP by calculating the median estimate; and
- Calculate the weighted average of this median DDM MRP and the market indicator MRP, giving a two-third weight to the former and a one-third weight to the latter[87].

[86] IPART Fact Sheet on equity beta. https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/investigation-administrative-legislative-requirements-sea-wacc-methodology-2017/fact-sheet-estimate-equity-beta-1-april-2019.pdf. Page 2.
[87] IPART Review of our WACC method – Final Report, February 2018. Page 48.

WaterNSW proposes a **current 'placeholder' MRP of 9.7%** based on the application of IPART's March 2020 market observations as outlined in IPART's April 2020 consultation on the debt margin.

Value of imputation credits

The observed equity returns that IPART uses to estimate the market risk premium are taken after corporate tax. However, the observed equity returns do not take account of the franking credit benefits that Australian investors receive. To take account of this benefit, IPART's current MRP estimates make an implicit adjustment for dividend imputation. This adjustment assumes a value of imputation credits (gamma) of 0.25, in line with IPART's standard WACC method.

The value of imputation credits effectively reduces projected revenues, so they more closely reflect the impact of franking credit benefits that Australian investors receive. The higher the value of imputation credits (ranging from 0 to 1, or 0 per cent to 100 per cent) in a determination, the lower the revenues the business can expect to receive in compensation for paying corporate income tax.

Gamma is directly applied by IPART in its post-tax framework by reducing the corporate tax allowance for the impact of the imputation credits (see Section 9.2 'Corporate income tax' for further detail).

IPART's 2018 WACC Methodology specified the **value of gamma as 0.25** and this has been applied by WaterNSW in determining the revenues and prices contained in this pricing proposal.

Our WACC proposal

WaterNSW proposes that IPART apply its 2018 WACC Methodology for the 2021 Determination period which results in a placeholder **post-tax real WACC of 3.2%**.

The current placeholder WACC represents a significant reduction from the WACC of 4.7% in the current 2017 Rural Valleys determination that reflects, amongst other things, a materially lower interest rate environment. This lower WACC results in downward pressure on regulated prices for customers.

The following table provides WaterNSW's proposed 'placeholder' WACC used in our calculation of proposed revenues and prices in this pricing proposal.

Table 98 – Proposed WACC for the 2021 Determination period

WACC Parameter	Current market data	LT averages	Midpoint average
Nominal risk free rate	0.9%	3.1%	2.0%
Inflation	2.30%	2.30%	2.3%
Debt margin	2.1%	2.6%	2.3%
Debt to total assets	60%	60%	60%
Market risk premium (current / long-term)	9.7%	6.0%	7.8%
Gamma	0.25	0.25	0.25
Equity beta	0.7	0.7	0.7
Cost of equity (nominal post-tax)^	7.7%	7.3%	7.5%
Cost of debt (nominal pre-tax)^	3.0%	5.7%	4.3%
Nominal Vanilla WACC^			5.6%
Post-tax real WACC^			**3.2%**

Our **proposed WACC of 3.2%** is based on the values provided in IPART's March 2020 consultation the debt margin. [88]

Inflation forecasting risk impacting our financeability

Market-based measures of expected inflation have fallen dramatically over the last few months and the breakeven inflation series suggests that bond market participants are pricing in close to zero inflation on average over the next four years. Maintaining IPART's current approach for inflation that results in a value of 2.3% is simply not sustainable and puts WaterNSW at significant financial risk when considering the current low inflation forecasts arising from COVID 19 impacts.

We propose that IPART puts in place a mechanism to eliminate the impact of inflation forecast error on the compensation provided for WaterNSW's services. This includes lowering the inflation forecast in IPART's revenue model (e.g. to 1.7%) or by including a new building block in the model that captures the cost difference between an inflation forecast of 2.3% and 1.7%.

Should IPART not adopt these proposals, an uplift to the equity beta would be required to address the increased risk for WaterNSW equity investors.

The following issues relating to WACC, inflation and financeability and the resulting implications, as well as how IPART can take these into account in its final determination for WaterNSW:

- The exceptional impact of the COVID 19 pandemic on the economy as a whole and financial markets more specifically;
- The associated heightened level of uncertainty that exists around all WACC parameters but, in particular, the uncertainty associated with the forecast of inflation used by IPART to derive a real WACC;
- How the uncertainty around the inflation forecast can best be mitigated, and in so doing, reduce or eliminate the prospect of extreme windfall gains or losses accruing to stakeholders as a result of regulatory forecast error;
- The implications for the financeability of WaterNSW's business were IPART to not adapt its regulatory framework and methodology to the new economic circumstances; and
- How heightened uncertainty should be reflected in the WACC.

In relation to how uncertainty around the inflation can be best mitigated, we note that market based measures of expected inflation have fallen dramatically over the last month. They are now a full 2.0% below the current IPART method that produces an inflation forecast of 2.3%. Our response is summarised below and is supported by an expert report by CEG provided as part our Greater Sydney response to IPART's 2020 Draft Determination.[89]

IPART indicated in the 2020 Greater Sydney Final Report that it will adopt an inflation estimate of **2.30%**[90] per annum for deflating the post-tax nominal WACC to a post-tax real WACC.

WaterNSW notes that there is inflation risk associated with IPART's approach to forecasting inflation when calculating the post-tax real WACC, if outturn inflation varies from IPART's forecast. WaterNSW notes that IPART's inflation forecasts (and other regulators' forecasts generally) have been systemically higher than outturn inflation, which results in insufficient cash

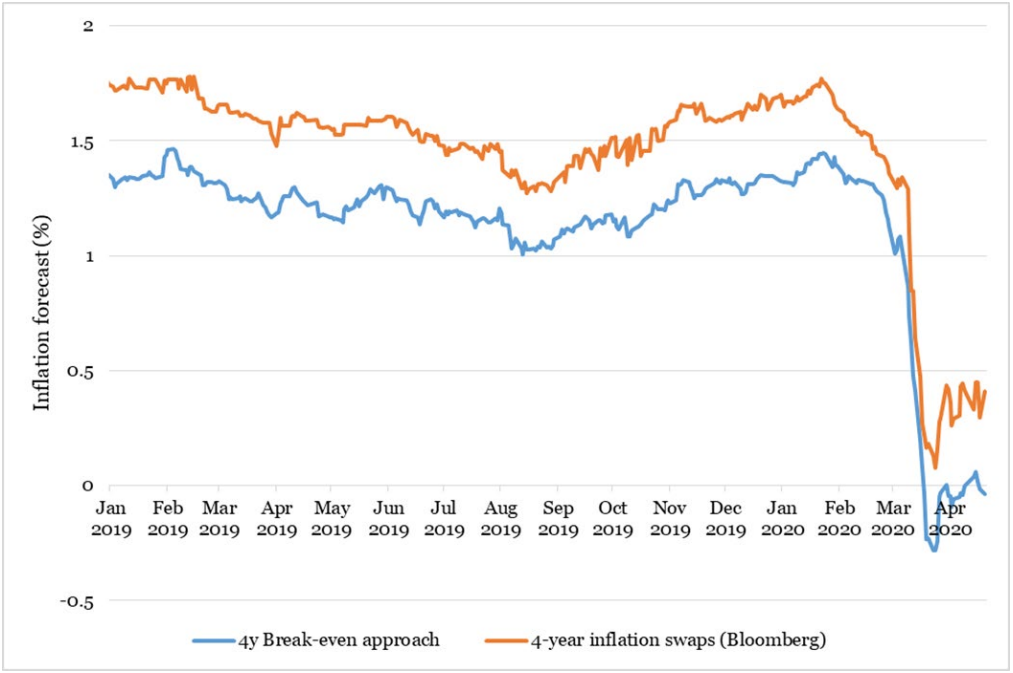
[88] See https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/regulatory-framework-regulatory-policy-sea-weighted-average-cost-of-capital-wacc-models/wacc-publications/fact-sheet-wacc-consultation-on-debt-margin-april-2020.pdf. We note that IPART's Final Determination for Greater Sydney bulk water services released on 16 June 2020 contained a WACC of 3.4%. Given the timing of the release of the Final Determination and recognising the proposed WACC is a placeholder that will be updated prior to the WAMC Final Determination, we have maintained the use of a 3.2% WACC for this pricing proposal.
[89] See CEG report titled *WACC, inflation compensation and financeability for WaterNSW* provided as Attachment 2. This report was originally provided as Attachment 1 to WaterNSW's 27 April 2020 response to IPART's Draft Greater Sydney Determination and is unchanged from that version.
[90] See IPART Final Determination for Greater Sydney bulk water prices 16 June 2020. Page 166.

flows in the determination to achieve IPART's 'notional' real post-tax WACC. This has significant implications for the financeability of WaterNSW's investment program.

Systemic over-forecasting of the WACC results in prices set at artificially low levels that are insufficient to achieve the post-tax nominal WACC calculated by IPART, thereby placing pressure on the credit metrics and financeability of the businesses. WaterNSW has been bearing the forecasting risk given the largely asymmetric nature of the estimating process. We also note that we would similarly be concerned if the converse were to occur and there was systemic under-forecasting of inflation.

As illustrated in Figure 36 below, market based measures of expected inflation have fallen dramatically over the last month. They are now a full 2.0% below the current IPART method estimate of 2.3%. In addition, the breakeven inflation series suggests that bond market participants are pricing in close to zero inflation on average over the next four years. Whether one considers these market estimates of inflation will be borne out in reality, they are, at a minimum, indicative of extremely high levels of uncertainty about the future path of inflation.

Figure 41 - 4 year breakeven inflation and inflation swaps



Should IPART fail to adapt its approach to the new economic circumstances, then it is highly likely that its forecast for inflation, based on its previously published method, will be materially different to actual inflation, thus creating material windfall gains and losses for stakeholders if market based estimates turn out to be correct.

Even if IPART's forecast for inflation is assumed to be accurate, there will still be a financeability problem for WaterNSW - a problem which will be extremely aggravated if, as is highly likely, IPART's inflation forecast does not accurately forecast actual inflation.

At a high level WaterNSW proposes that IPART should:

- Put in place a mechanism to eliminate the impact of inflation forecast error on the compensation provided for WaterNSW's services (i.e. a true-up); and
- Put in place a mechanism by which revenues in the upcoming regulatory period are increased, in a present value neutral manner, to improve the financeability of WaterNSW's business.

We view the current approach of businesses solely bearing IPART's inflation forecasting risk as unreasonable and inequitable and **should not be borne by either party**. Critically, WaterNSW is not suggesting that customers solely bear the risk of IPART's forecasting inaccuracies. This could be achieved by passing through the difference between IPART's forecasts and actual inflation used in the setting of the real WACC.

We note that some forecasting risk is already shared between WaterNSW and customers through the indexation of the RAB, where actual inflation is applied. Extending a similar approach to IPART's inflation forecasts used in setting the real WACC would be a straightforward and internally consistent exercise.

Specifically, if there was a difference between actual and forecast inflation during a given year of the 2021 Determination period, prices in subsequent years of the 2021 Determination period would be adjusted upwards/downwards as appropriate to eliminate the NPV impact of the forecast error.

In terms of the effect of heightened uncertainty on the WACC, we consider that if the policies set out above are implemented then no uplift is warranted. However, if these proposed policies are not adopted then, **an uplift of around 60bp to the WACC as a minimum** is warranted.
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Appendix 4 – RAB values by valley

The below tables present WaterNSW's total RAB roll forwards by valley to the end of the 2020-21 determination period.

Table 99 – Border RAB roll forward ($'000s)

Border	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	3,809	3,820	3,957	4,222	6,649	7,447
+ Capex/Additions	47	136	285	2,404	717	531
- Depreciation	107	80	85	90	95	168
- Disposals	0	1	0	0	0	0
+ Indexation	73	82	66	114	175	0
Closing RAB	3,820	3,957	4,222	6,649	7,447	7,809

Table 100 – Gwydir RAB roll forward ($'000s)

Gwydir	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	113,330	115,208	116,916	118,515	122,507	128,855
+ Capex/Additions	1,946	1,517	2,091	3,947	5,809	7,356
- Depreciation	2,226	2,227	2,344	2,460	2,569	2,823
- Disposals	14	18	35	26	27	27
+ Indexation	2,172	2,435	1,887	2,530	3,135	0
Closing RAB	115,208	116,916	118,515	122,507	128,855	133,362

Table 101 – Namoi RAB roll forward ($'000s)

Namoi	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	147,930	153,506	164,150	177,180	193,397	205,507
+ Capex/Additions	5,716	10,565	13,838	16,119	11,088	4,408
- Depreciation	2,988	3,231	3,542	3,779	3,937	4,052
- Disposals	17	24	4	14	14	14
+ Indexation	2,865	3,334	2,737	3,890	4,973	0
Closing RAB	153,506	164,150	177,180	193,397	205,507	205,849

Table 102 – Peel RAB roll forward ($'000s)

Peel	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	39,913	41,412	42,475	42,730	44,378	46,435
+ Capex/Additions	1,586	846	235	1,443	1,664	799
- Depreciation	857	630	661	691	720	1,086
- Disposals	3	32	1	16	16	16
+ Indexation	773	878	681	912	1,130	0
Closing RAB	41,412	42,475	42,730	44,378	46,435	46,132

Table 103 – Lachlan RAB roll forward ($'000s)

Lachlan	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	94,681	97,807	99,866	102,998	112,930	125,086
+ Capex/Additions	3,386	2,083	3,693	9,987	11,626	12,175
- Depreciation	2,079	2,058	2,177	2,296	2,413	2,764
- Disposals	11	42	10	26	26	26
+ Indexation	1,831	2,075	1,627	2,268	2,968	0
Closing RAB	97,807	99,866	102,998	112,930	125,086	134,470

Table 104 – Macquarie RAB roll forward ($'000s)

Macquarie	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	74,589	75,940	79,982	83,172	89,949	97,349
+ Capex/Additions	1,369	3,903	3,449	6,618	6,809	4,289
- Depreciation	1,438	1,451	1,538	1,621	1,705	2,046
- Disposals	9	45	28	37	37	37
+ Indexation	1,430	1,635	1,307	1,816	2,333	0
Closing RAB	75,940	79,982	83,172	89,949	97,349	99,554

Table 105 – Murray RAB roll forward ($'000s)

Murray	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	38,764	41,798	42,209	44,506	50,540	63,917
+ Capex/Additions	3,203	446	2,566	6,047	13,011	3,031
- Depreciation	931	912	957	1,005	1,053	1,318
- Disposals	5	6	7	6	7	7
+ Indexation	767	882	696	998	1,426	0
Closing RAB	41,798	42,209	44,506	50,540	63,917	65,622

Table 106 – Murrumbidgee RAB roll forward ($'000s)

Murrumbidgee	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	107,016	108,935	116,873	122,899	136,917	154,997
+ Capex/Additions	2,818	8,593	7,314	14,700	18,048	8,056
- Depreciation	2,946	3,007	3,200	3,396	3,595	3,922
- Disposals	13	26	17	21	22	22
+ Indexation	2,060	2,378	1,928	2,735	3,648	0
Closing RAB	108,935	116,873	122,899	136,917	154,997	159,109

Table 107 – Lowbidgee RAB roll forward ($'000s)

Lowbidgee	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	15	70	3,188	7,344	7,889	8,607
+ Capex/Additions	83	3,158	4,127	495	653	1,078
- Depreciation	28	27	56	86	116	121
- Disposals	0	47	0	23	23	23
+ Indexation	1	34	84	159	205	0
Closing RAB	70	3,188	7,344	7,889	8,607	9,541

Table 108 – North Coast RAB roll forward ($'000s)

North Coast	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2016-17$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	7,320	7,528	7,787	8,021	8,360	9,460
+ Capex/Additions	124	198	214	284	1,004	271
- Depreciation	55	97	106	116	124	163
- Disposals	1	1	1	1	1	1
+ Indexation	140	160	126	171	222	0
Closing RAB	7,528	7,787	8,021	8,360	9,460	9,567

Table 109 – Hunter RAB roll forward ($'000s)

Hunter	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	27,388	28,152	28,890	29,814	32,497	38,330
+ Capex/Additions	467	465	811	2,427	5,381	1,620
- Depreciation	225	313	350	388	420	531
- Disposals	3	9	5	7	7	7
+ Indexation	525	596	469	651	880	0
Closing RAB	28,152	28,890	29,814	32,497	38,330	39,412

Table 110 – South Coast RAB roll forward ($'000s)

South Coast	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	3,450	3,534	3,628	3,732	4,019	4,837
+ Capex/Additions	49	80	112	281	790	245
- Depreciation	30	61	67	75	83	93
- Disposals	1	1	0	0	0	0
+ Indexation	66	75	59	81	110	0
Closing RAB	3,534	3,628	3,732	4,019	4,837	4,988

Table 111 – Fish River RAB roll forward ($'000s)

Fish River	Step 1 - RAB Roll Forward (nominal)				Step 2 - Forecast RAB (2020-21$)	
000' $M	16-17	17-18	18-19	19-20	20-21	21-22
Opening RAB	71,062	73,200	78,141	82,016	84,258	88,336
+ Capex/Additions	2,515	5,149	4,461	2,481	4,004	4,333
- Depreciation	1,742	1,766	1,864	1,966	2,062	2,264
- Disposals	8	33	9	21	21	21
+ Indexation	1,374	1,591	1,286	1,748	2,156	0
Closing RAB	73,200	78,141	82,016	84,258	88,336	90,384

Appendix 5 – Impacts of COVID -19 for the economy, water utilities and WaterNSW

This attachment sets out WaterNSW's views on the potential impacts of COVID-19 for the economy, water utilities and WaterNSW as may apply during the 2021 Determination period.

1. Introduction

In the midst of a global pandemic, Australia has not faced a crisis of the magnitude of COVID-19 for generations. Governments locally and around the world are scrambling. Policy responses are sometimes confused and contradictory, and leaders are under huge pressure. A broadly consistent policy response to reducing the spread has been the enforcement of a degree of lockdown of the population. There measures have created challenges for the global economy. Although the outlook is subject to spectacularly wide bounds, this looks set to be the sharpest recession Australia has seen since the Great Depression of the 1930s.[91]

Currently, the degree and extent to which the measures to restrict the spread of virus will continue are unknown. Despite global efforts, a vaccine is likely to take more than a year to develop, noting that historically a human vaccine has never been successfully developed against a coronavirus.[92] Without a vaccine in sight and herd immunity considered an unacceptable pathway, there uncertainty surrounding both how long current lockdown protocols will be in place in Australia and how agile the Australian and world economy will be in returning to business as usual once restrictions are lifted. This means there is significant uncertainty as to how long a full recovery will take, with projections varying from a couple years up to a decade.[93]

Utilities, which includes the water sector, are not immune to such wide-scale disruptions. Preliminary analysis at the start of lockdown protocols being put in place, suggests the short-term impact on the utilities sector will not be as harsh as in other sectors of the economy. However, the severity of impact on utilities may be delayed. For example, Deloitte Access Economics estimates utilities sector output will begin to decline in FY2021 and continue through FY2022. This compares to other industries, such as accommodation and food services, which are likely to see a sharp drop in FY2020 and start to recover by FY2022.

There is clearly great uncertainty as to what impact Covid-19 will have on water utilities. The following sections review the underlying uncertainty the pandemic has created and assesses:

- The latest macroeconomic indicators and forecasts;
- The implications the trends in macroeconomic indicators have for current framework IPART uses to regulate the water sector; and
- The likely impacts on the revenue and expenditure drivers for regulated water utilities in the short term (within the 2020 calendar year) and medium term (within the next five years), and the implications for WaterNSW.

1. Macroeconomic impacts – key indicators and trends

Supplies of goods and services are being constrained as more and more nations are implementing lock downs. There have been notable disruptions in manufacturing, affecting cars,

[91] Deloitte Access Economics, March 2020, *Business Outlook*.
[92] NY Times, 20 April 2020, *The Coronavirus in America: The Year Ahead* <https://www.nytimes.com/2020/04/18/health/coronavirus-america-future.html>; Australian Financial Review, 3 April 2020, *Why a coronavirus vaccine may never be found.*
[93] Deloitte Access Economics, March 2020, Business Outlook; ABC, 6 April 2020, Coronavirus fallout could take Australian economy decade to recover from, KPMG says.

high tech goods, pharma, through to transport, retail and tourism sectors. But the even bigger problem is the lack of demand as citizens and businesses are hunkering down.

In Australia, the key recent impacts on production and employment are as follows:

- In late March, Deloitte Access Economics forecast Gross Domestic Product (GDP) would fall 6.7% in FY2021. A 5.8% recovery is expected in the following year; however, this growth is forecast to decline in succeeding years.[94] More recent information suggests the economic downturn could be significantly worse.[95]
- 17% of small to medium enterprises (SMEs) have stopped trading.[96]
- 6% of construction businesses and 8% of manufacturing businesses have stopped trading.[97]
- In April, the number of people who were currently working paid hours decreased by 8% from the month before.[98] The unemployment rate is forecast to be 9.7% in FY2021, a significant increase from 5.1% in FY2019. This is expected to slowly recede to 5.6% by FY2024.[99]
- Australia's population growth has fallen as a result of migrant workers returning overseas. The number of temporary visa holders has already decreased by 260,000 (10%) and may reduce another 16% by end of 2020.[100]

Australian prices and financial markets are responding:

- Inflation is expected to continue to plateau at record lows, with headline CPI forecast to drop to 0.9% in FY2021 and only a meagre recovery in following years. [101]
- The Reserve Bank of Australia (RBA) has cut its cash interest rate to its lowest level in three decades (0.25%), and it's begun anchoring longer term interest rates at low levels too.12 This is in line with central banks across the globe.
- The Australian dollar has fallen to an 18 year low, with the US exchange rate at US$0.57 per AUD$1 on 16 March – falling further than it did during the global financial crisis. The Australian dollar is expected to recover to pre-COVID-19 levels over the next five years. [102]

Global conditions are similar, if not worse, with two key trading partners impacted:

- China's economy contracted 6.8% in the first quarter compared to a year earlier;[103] and
- In the US, GDP is forecast to shrink 34% in the second quarter of this year, with unemployment expected to reach 15%.[104]

It is uncertain how long the current economic downturn will persist, with optimistic forecasts suggesting recovery in 2021 and pessimistic forecasts pushing recovery back another half a decade. [105]

[94] Deloitte Access Economics, March 2020, *Business Outlook*.
[95] Grattan Institute, 19 April 2020, Shutdown: estimating the COVID-19 employment shock
[96] ABS, 7 April 2020, Business Impacts of COVID-19.
[97] ABS, 7 April 2020, Business Impacts of COVID-19.
[98] Note that proportion of people 'currently working paid hours' is not compared to the employment rate as it includes those that may have left the labour force or may still be employed but not have hours resourced. Source: ABS, 20 April 2020, Household Impacts of COVID-19.
[99] Deloitte Access Economics, March 2020, *Business Outlook*.
[100] Adam Creighton from Australian Financial Review, 15 April 2020, *COVID-19: Nation's great exodus revealed.*
[101] Deloitte Access Economics, March 2020, *Business Outlook*.
[102] Deloitte Access Economics, March 2020, *Business Outlook.*
[103] BBC, 17 April 2020, China's virus-hit economy shrinks for the first time in decades.
[104] Bloomberg, 31 March 2020, Goldman Sachs Sees 34% Plunge in U.S. GDP and 15% Unemployment; Business Insider, 6 April 2020, Credit Suisse says the US economy will shrink 33.5% next quarter, the biggest drop in history.
[105] Deloitte Access Economics, March 2020, *Business Outlook.*

2. Implications for IPART's regulatory framework

These changes in macroeconomic indicators resulting from the pandemic have implications for the regulatory framework that IPART uses to determine water business revenues and prices. In particular:

- The estimated rate of inflation used in the cost of capital and forecast prices and expenditures; and
- Efficiency adjustments, both 'catch-up efficiencies' and 'continuing' efficiencies, in which the concept of a 'frontier company' is used as a benchmark for water businesses' efficient expenditure.

3.1 Inflation impacts on real returns

In determining cashflows for regulated water utilities, IPART uses the standard approach adopted by regulators in other sectors in Australia and in the UK of applying a real rate of return to an indexed regulatory asset base (RAB).

IPART in estimating the real rate of return for utilities, currently applies an expected inflation rate of 2.3%. This is much higher than what the prevailing inflation rate over recent times. For example, in FY2018 headline CPI was 1.7%.[106]

As discussed in the CEG report on WACC, inflation and financeability (provided as Attachment 3), in the review of bulk water prices for Greater Sydney, the difference between actual inflation rates and the current rate of expected inflation used by IPART has already been highlighted as creating a financeability risk for water businesses. This is because over-estimated inflation rates will result in an under-estimated real WACC, resulting in real returns that are lower than expected. The analysis conducted by IPART already highlights the issues this creates for cash flow risk in its own assessment of the funds from operations (FFO) over debt ratio,[107] which tests whether we have generated sufficient free cash flow to repay our debts.

The expected low inflation rates resulting from the global pandemic will only serve to exacerbate the cash flow risk and financeability issues already identified. This further highlights the need for IPART to revise its approach to estimating the expected inflation rate, as the impact on financeability will be much greater, the lower the expected inflation rate is compared to IPART's 2.3% estimate.

3.2 Achieving efficiency improvements in an economic downturn

The 'frontier company' approach that IPART's consultant, Atkins-Cardno, applied in its review of WaterNSW's Greater Sydney 2020 Determination assumed that there will be ongoing productivity improvements in the operation of the business over time. The productivity improvements are predicated on underlying growth and improvements in the economy that should flow through to the sector.

Efficiency improvements at the productivity frontier are underscored by the assumption that efficiency can be achieved through increased scale or technological change. With a slow-down in new connections growth, economies of scale will be difficult to attain. Similarly, investment in technological improvements are likely to be stifled in a time of economic downturn.

In addition, this new operating environment is likely to impact our productivity as:

- Social distancing protocols result in slower manufacturing plant operations, this may require expenditure on larger operating space to keep employees adequately separated while keeping operations timely; and

[106] Deloitte Access Economics, March 2020, *Business Outlook.*
[107] IPART, March 2020, Draft Report: Review of prices for WaterNSW Greater Sydney, p.84

- Our employees transition to working from home and adjust to home distractions (particularly parents dealing with closed schools).

There have been technology constraints as the capacity of the virtual private network in place prior to the lockdown had to be increased to support the volume of people now having to be online and working out of office.

There are risks to productivity as efficiency enhancing IT programs may be delayed to the extent there are any constraints in supply on ICT capacity with increased demand being placed on the resources across the State.

3. Expenditure drivers

The range of economic disruptions and government policies will have a mixed and uncertain effect on both water supply needs and the cost to deliver those needs. In particular:

- Changes in water usage behaviour in lockdown and growth in new water connections in the future; and
- New operational requirements on businesses, which may be moderated by downwards pressure on labour and electricity costs

The expected timing of major infrastructure projects and the cost of engineering, procurement and construction (EPC) and imported materials.

4.1 Water demand

4.1.1 Short term

A key consideration in the short-term is how structural and behavioural changes will impact existing water consumption.

As people continue to work and live from home under lockdown measures, residential water demand is likely to increase, as seen in other utility sectors such as electricity[108]. This may be slightly moderated by migrants returning to their overseas home.

Small and medium enterprise (SME) water demand is likely to decline as trading is halted, particularly in non-essential services such as hospitality and entertainment.

It is unknown how commercial and industrial (C&I) water demand will change as some businesses are closed while others ramp-up in response to bulk buying.

In the electricity sector, non-residential demand decreased 8% after lock-down measures were introduced.[109] However, unlike electricity, the increased frequency and rigour of cleaning may also increase water usage for those businesses that continue to operate.

4.1.2 Medium term

In addition to behavioural changes on water usage, we must consider how changes in growth will impact future connections and increased water consumption.

It is uncertain how long current lock down protocols and isolation behaviours will last, it is possible that the short-term impacts on water usage will continue well into the medium term.

[108] Residential electricity demand increased 14% following the lock-down measures in the Jemena distribution zone. Source: Energy Networks Australia, 16 April 2020, *Commercial down v residential up: COVID-19's electricity impact.*
[109] Energy Networks Australia, 16 April 2020, Commercial down v residential up: COVID-19's electricity impact.

The economic downturn may result in slower growth in new connections, particularly if immigration (a major source of Australia's population growth) does not pick back up.

However, it is still currently expected that construction of major developments and infrastructure will continue as planned. This is in line with the New South Wales Government's commitment to continue to deliver its infrastructure pipeline.[110]

In the medium term we may see a phased return of SMEs if lockdown measures are lifted, although this will likely be dampened by the extent of economic downturn and cautiousness of people returning to normal routines. Potentially C&I businesses will recover from short-term impacts in a year's time, but will then see production decline in following years as the economic downturn sets in.[111]

4.2 Operating expenditure

4.2.1 Short term

New operational requirements

This new operating environment has brought on new expectations of businesses such as more frequent and rigorous cleaning of workplaces. In addition, working out of office has required investment in improved information and communication technology (ICT) such as greater virtual private network (VPN) capacity. This is in addition to maintaining office building costs.

In addition to sharp increase in unemployment, with the number of people with work already falling by 8%, a number of large employers have announced short-term wage reduction measures. Payment difficulties may increase for rural customers.

Supply of resources

High unemployment rates and short-term wage reduction measures may put downward pressure on wages, particularly for low-skilled jobs with quick turnover. However, upward pressure on wages may occur if a major disruption to labour supply occurs. This may be a result of widespread virus infections and/or mass emigration as foreign workers return home.

Despite increasing unemployment, there are certain supply chain risks that may arise.

The wide-spread demand for particular services, including cleaning and IT, is likely to put upwards pressure on prices for these services.

The constraints on IT costs and on resources in the utilities sector, has been highlighted in energy by the market bodies recently announcing a one year delay in implementing the fundamental five minute settlement market rule change scheduled for 1 July 2021. This has been driven in part by concerns about businesses' ability to absorb large costs and scale up IT capability in the current environment.[112]

Other local businesses are likely to experience reduced demand from the private sector. This could lead to lower prices as businesses compete for fewer clients. However, prices may potentially increase as a result of greater market concentration following business closures.

4.2.2 Medium term

[110] Dominic Perrotet, NSW Government Treasurer, Letter to the construction and engineering sectors of NSW.
[111] Deloitte Access Economics, March 2020, *Business Outlook*
[112] AEMC, *COVID-19 power plan launched to support energy sector through pandemic,* media release 9 April < https://www.aemc.gov.au/news-centre/media-releases/covid-19-power-plan-launched-support-energy-sector-through-pandemic?utm_medium=email&utm_campaign=New+AEMC+Update+-+9+April+2020&utm_content=aemc.gov.au%2Fnews-centre%2Fmedia-releases%2Fcovid-19-power-plan-launched-support-energy-sector-through-pandemic&utm_source=www.vision6.com.au>

New operational requirements

It is likely that the short-term disruptions considered above will continue well into the medium term. Even if health concerns ease, certain requirements like improved ICT may continue to be pertinent, as working from home becomes the 'new normal' and businesses look to prepare in case of future office disruptions.

We will also need to consider how we're protected as we navigate these new risks, including changes to workplace safety and workplace interruptions. It is likely that we will require insurance extensions if we wish to be protected from the impacts of the next pandemic.[113]

Supply of resources

It is likely that some proportion of businesses will never recover after the shutdown period ends, despite Government support payments and wage subsidies.

It is therefore likely that the short-term impacts considered above will continue into the medium term. Unemployed workers may be able to transition to low skilled jobs, such as cleaning, relatively quickly. However, it will take time before unemployed labour can transition to skilled areas, such as IT. Overall, higher unemployment is likely to prevail to some degree,[114] putting downwards pressure on labour costs as employment contracts are refreshed in the coming years.

As more businesses continue to fail over the medium-term, there is however the risk of market concentration of suppliers, which may put additional upwards pressure on our prices.

In addition, grid electricity prices may decline if gas prices remain low[115] and demand continues to be subdued.[116]

4.3 Capital expenditure

Timing

Despite the potential slowdown in new growth areas as result of declining population growth, the NSW Government's commitment to deliver major developments and infrastructure means we are still expected to undertake capital expenditure related to Government projects.

As highlighted by the NSW Treasurer, continuing capital investments where possible will be vital to supporting the local economy during the economic downturn.

Cost

We are uncertain how the cost of planned capital investments will be impacted.

As mentioned above, local businesses are likely to experience reduced demand from the private sector, this includes businesses in engineering, procurement and construction (EPC). This could lead to lower EPC costs as businesses compete for fewer clients in the short term, potentially followed by higher prices due to greater market concentration following business closures in the medium term.

[113] Foez Dewan from McCabe Curwood, 17 March 2020, Will my Business Insurance cover me for the impact of COVID-19?
[114] Deloitte Access Economics, March 2020, *Business Outlook.*
[115] Gas prices are closely linked to oil prices which are currently at all-time lows (reaching negative prices on 21 April). It is unknown when and to what extent oil prices will be able to recover.
[116] Note that electricity prices are not expected to reduce in the short term as retailers and large energy users are often entered into hedged contracts and a delay is expected as retailers refresh their contracts with revised price forecasts.

While a lower exchange rate will increase our international competitiveness, it will make imported inputs more expensive and reduce the competitiveness of local businesses relying on overseas materials or equipment. In addition, greater restrictions and regulatory oversight of international trade and shipping, including the cancellation of most air flights, will likely constrain international logistics and may impose further higher prices for imported goods. As such, imported equipment and assets are expected to increase in costs.

4. Summary of Covid-19 impacts

The rapid changes in macroeconomic indicators that the world is currently experiencing are already impacting water utilities and posing unique challenges for the regulatory framework that IPART operates. In particular, the duration of any lockdown and the related impact this will have on the economy and the water sector is still unclear.

We already face significant risk to our financeability. over the regulatory period as a result of the disconnect between IPART's assumed inflation rate and actual inflation. This issue is likely to be worse given the expected lower levels of inflation now prevailing. Further, it is questionable whether the efficient frontier used by the reviewer is still applicable given the downturn currently being experienced in the economy. We have seen our input costs increasing in a number of areas, and there are also potential declines to productivity as our workforce adapts to new working arrangements

Meanwhile, the impact of COVID-19 on water demand remains uncertain, with behavioural changes and economic growth factors yet to be revealed in actual consumption. As we have noted, accurately forecasting demand and costs in the current environment for the upcoming four year regulatory period presents considerable challenges.

Overall, we urge IPART to take these unprecedented levels of uncertainty into account in preparing its 2021 Rural Valleys Determination.

Appendix 6 – Capital expenditure strategy, planning and management

This section sets out WaterNSW's strategy for managing assets and capital in an efficient and prudent manner in order to satisfy the needs of WaterNSW customers and stakeholders

Asset Management System

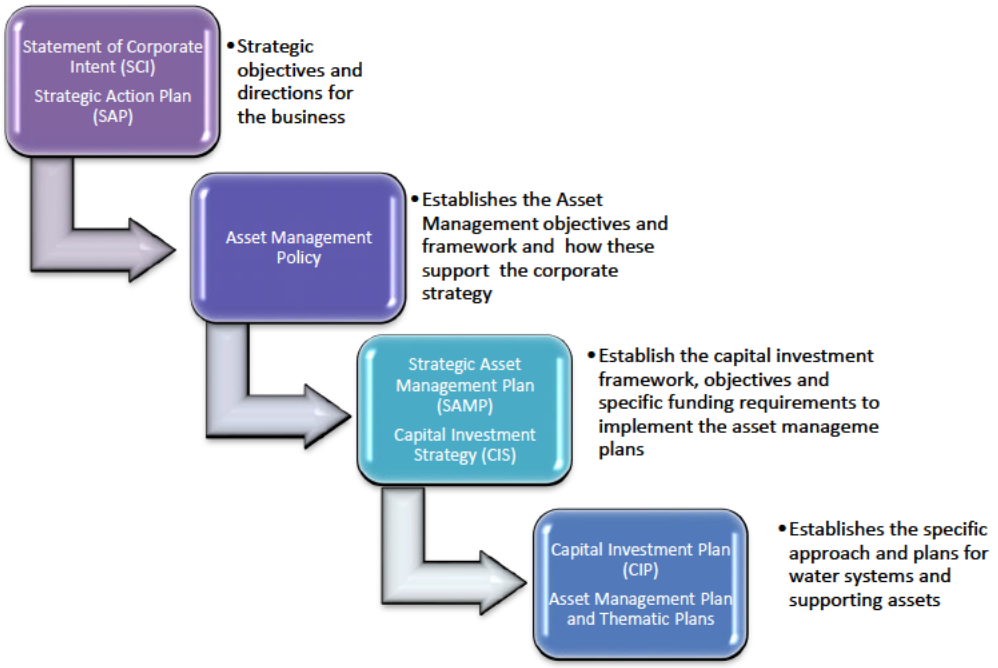
The WaterNSW Asset Management System (AMS) sets out how we manage assets to support the strategic objectives of the organisation. The AMS provides a structured and systemic life-cycle approach to optimise value from assets to achieve organisational objectives. The AMS applies to all physical assets owned, operated and controlled by WaterNSW in the conduct of its business.

WaterNSW is committed to developing and maintaining an AMS that supports responsible management of assets to deliver value to customers and support business objectives, in accordance with ISO55001 2014.

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. Implementing the AMS provides assurance that the way we manage assets including maintenance and augmentation is prudent and complies with Australian Standards

The figure below summarises the key strategic asset investment relationships addressed in the asset management system.

Figure 42 – Key strategic asset investment relationships



Source: WaterNSW analysis

Strategic Action Plan

The WaterNSW Strategic Action Plan sets priorities for the business. It outlines how the organisation plans to continue to satisfy the needs of WaterNSW customers and stakeholders, through the following components:

- Safety excellence: to improve our safety performance for employees, contractors and the public;
- Business transformation: to reform the business' organisation structure, culture and its processes in core functional areas to enable it to achieve its other strategic objectives;
- Customer value creation and responsiveness: to improve customer value;
- Growing the capabilities of our people: to enable performance through our people;
- Capability to develop and evaluate infrastructure solutions: to pro-actively scope, develop and propose infrastructure solutions that address identified deficiencies in the quantity and reliability of metropolitan and rural water supply;
- Asset health and capability management: to improve the efficiency of our asset management processes and activities and our asset development projects performance;
- Water quality research and expertise: to improve our understanding of water quality causes and effects so that we continue to deliver high quality water to customers; and
- Better business systems: to improve the efficiency of our processes through the use of technology and to provide information to our customers that assists them in improving their business and being more profitable

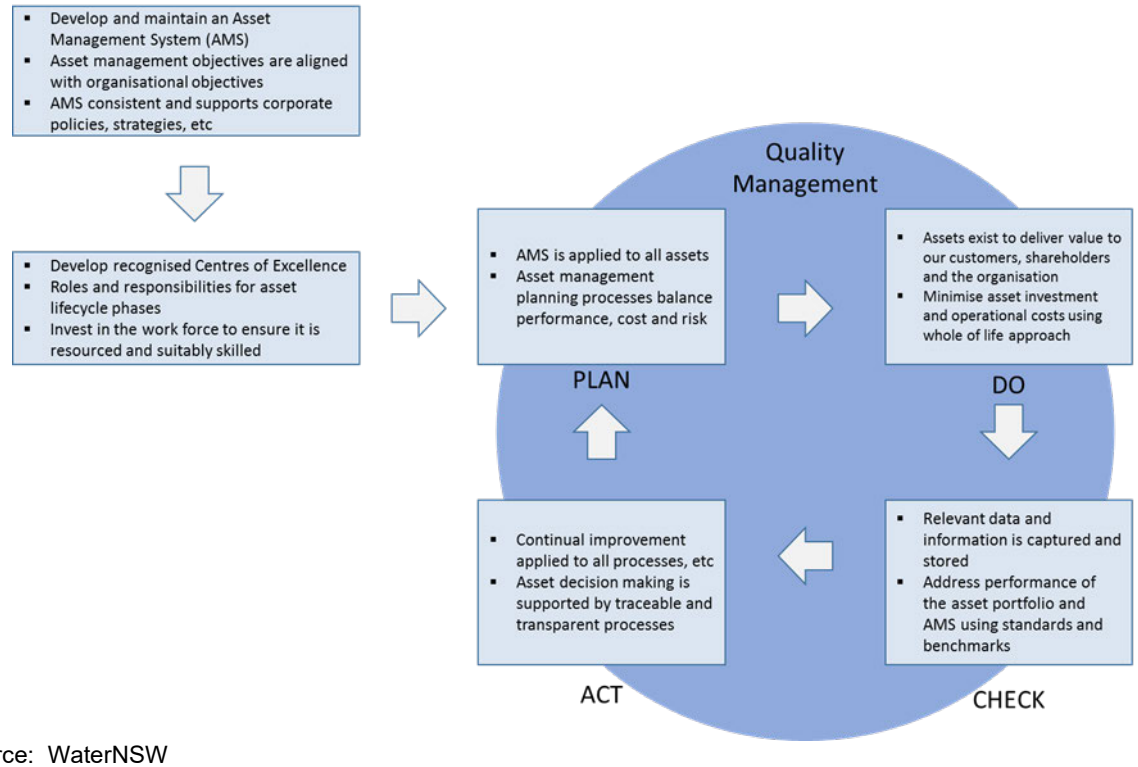
Knowledge management: to systematically capture all of the company's mission critical and mission important knowhow, methods and outcomes (knowledge) and have that knowledge readily accessible to all employees and in a form that is useable across multiple functional areas.

WaterNSW - Asset Management Policy

WaterNSW is committed to providing effective asset management in order to achieve its legislated and strategic business objectives. The WaterNSW Asset Management Policy is directed at meeting our primary objectives and regulatory commitments as set out in the WaterNSW Act.

Our Asset Management Policy is illustrated in the figure below.

Figure 43 – WaterNSW Asset Management Policy



Source: WaterNSW

Our Asset Management Policy states that meeting our primary objectives is supported by the effective management of large, long-lived water infrastructure assets and supporting assets such as buildings, information and communication technology, plant and equipment.

In order to achieve our legislated and strategic business objectives, WaterNSW will:

- Operate from the principle that assets exist to deliver value for our customers, shareholders and the organisation;
- Develop recognised Centres of Excellence in the development, management and operation of the assets and infrastructure needed to collect, store, transfer and release bulk water;
- Develop and maintain an AMS that complements and supports our business in accordance with ISO55001 and which maximises the net worth of the State's investment in WaterNSW;
- Apply the AMS to all physical assets;
- Develop asset management planning processes that facilitate the balancing of performance, risk and cost across the asset portfolio, consistent with the objectives of the corporate risk management framework and potential current and future climate change impacts;
- Ensure relevant data and information is captured and stored in a common systematic and efficient manner, for the purposes of informed and timely decision-making;
- Ensure asset investment is supported by traceable and transparent decision-making processes, including associated relevant asset criticality, capability and condition information and data analysis;
- Optimise asset investment and operational costs using a whole-of-life approach and utilising suitable life-cycle models as appropriate;
- Address performance of the asset portfolio and AMS in consideration of relevant industry standards and benchmarks; and

- Invest in the workforce to ensure it is resourced and suitably skilled for the productive and efficient delivery of asset management.

The Asset Management Policy has shaped the capital expenditure forecasts for this pricing proposal.

Strategic Asset Management Plan

The Strategic Asset Management Plan is the key document for describing the WaterNSW AMS and how various asset management activities are to be undertaken in support of achieving organisational objectives.

Capital Investment Strategy

The Capital Investment Strategy (CIS) provides a strategic view of WaterNSW approach to capital investment and supports the delivery of WaterNSW's Strategic Asset Management Plan. The CIS describes how we optimally manage capital investment in both new and existing assets and considers how customer, community and regulatory requirements will be met at least cost.

The CIS guides investment planning and decisions and aligns with the Strategic Asset Management Plan and WaterNSW corporate objectives. The CIS defines how the capital program is formulated and designed and identifies key factors that influence capital allocation and spending.

The CIS is used to develop the 20-year WaterNSW Capital Investment Plan and is a key component of the AMS.

Capital Investment Plan

The Capital Investment Plan describes the way we optimally manage investment to meet the needs of customers and comply with regulatory obligations.

The 10-year Capital Investment Plan is developed within the context of the AMS. The 10-year Capital Investment Plan covers water infrastructure, ICT, fleet, property and minor assets. At a minimum it is reviewed annually and used as the basis for capital expenditure forecasts for the Statement of Corporate Intent (SCI), budget and regulatory proposals.

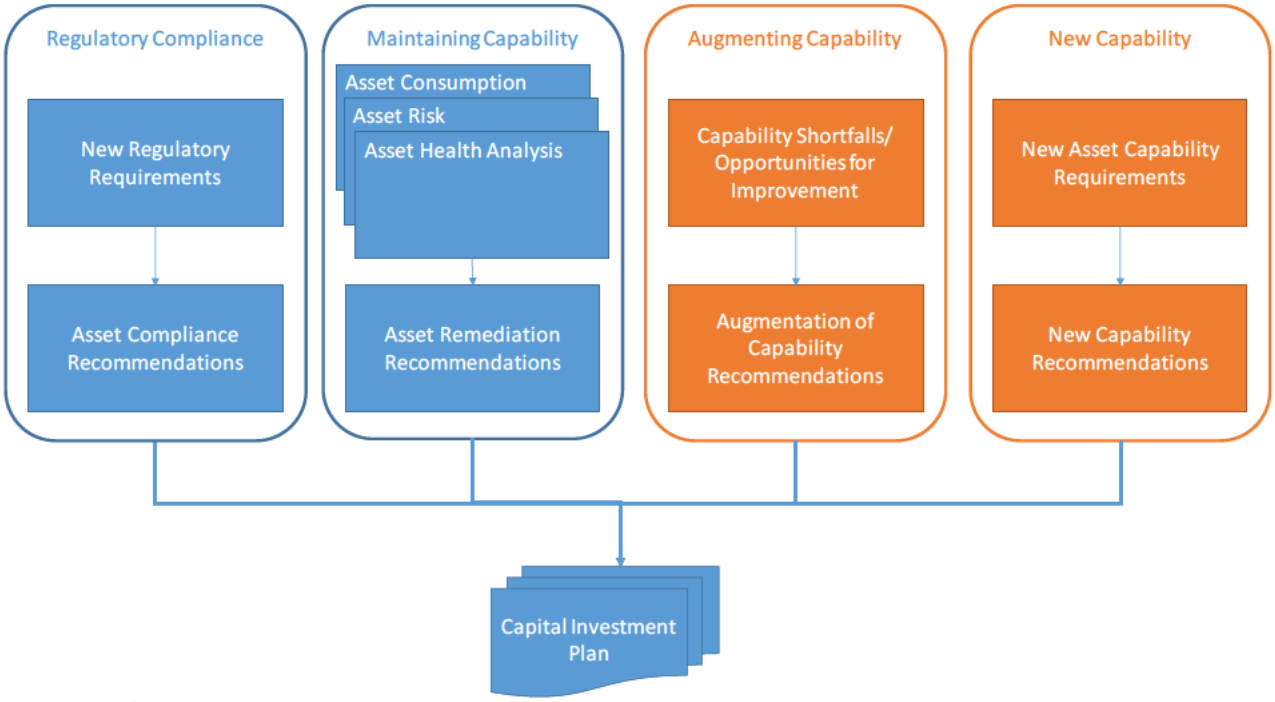
Key capital expenditure categories

WaterNSW classifies capital investment in four broad categories:

- Maintaining Capability;
- Augmenting Capability;
- New Capability/Solutions; and
- Regulatory Compliance.

The figure below represents in simple terms how the broad capital investment categories flow through to the development of short, medium and long-term plans.

Figure 44 – Capital Investment categories and their relationship with the Capital Investment Plan



Source: WaterNSW

To achieve a successful capital investment strategy and appropriate customer levels of service, investment is mapped to the investment categories in the following ways:

Maintain Capability

- Driven by assessment of assets against the WaterNSW Asset Health Standards including physical condition, functional reliability of equipment, technical and commercial obsolescence, serviceability and regulatory compliance; and
- Asset health data assembled through various means is then analysed using the WaterNSW risk-based asset management processes to determine the optimal point at which intervention should occur.

Augment Capability

- Need for the organisation to respond to emerging or expanding customer requirements and emerging market conditions; and
- Involves investment to augment 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 (e.g. 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

New Capability – Solutions

- Characterised by responding to needs or opportunities to deliver services or provide a capability of a nature which was not previously available; and
- Investment in this program will predominantly be driven by WaterNSW's 20-Year Infrastructure Strategy. The 20-Year Infrastructure Strategy is a major feature of WaterNSW's 3-year corporate strategic action plan

Regulatory Compliance – Environmental, safety and dam safety

- Comply with relevant environmental protection legislation;
- Comply with two sub-strategies of the 20-Year Infrastructure Strategy, namely:
    - State-wide 20-Year Fishway Implementation Strategy; and
    - Cold Water Pollution Implementation Strategy;
- Comply with Work Health and Safety requirements that apply to WaterNSW ; and
- Comply with the Dams Safety Act 2015 (NSW) which is intended to underpin a new dam safety regulatory framework. Dam Safety related risks are managed in accordance with the WaterNSW Dam Safety Management System as described in Section 5.5.

The investment strategy for this program is to determine a prudent, efficient and sustainable level of expenditure. The intent of this strategy is to ensure that the optimal level of funding is available, whilst providing the organisation the flexibility to substitute and reprioritise projects based upon need.

WaterNSW Dam Safety Management System

WaterNSW's AMS applies to the physical assets utilised by the organisation to deliver its services including infrastructure, water quality management, catchment protection and internal support. The Strategic Asset Management Plan provides alignment between the corporate objectives, the Asset Management Policy and the Asset Management Objectives.

Dams, as an asset type, require special treatment within the AMS due to the specific regulatory compliance requirements hence WaterNSW has developed a Dam Safety Management System (DSMS) to provide asset management standards for this asset type.

WaterNSW has implemented a DSMS as a tool to achieve the corporate objective of "Safety Excellence" by ensuring health and safety implications are considered in asset management activities and appropriate controls implemented to manage risks.

The DSMS provides WaterNSW with a framework for dam safety management activities, decision-making and supporting processes. WaterNSW applies the following Dam Safety Management objectives:

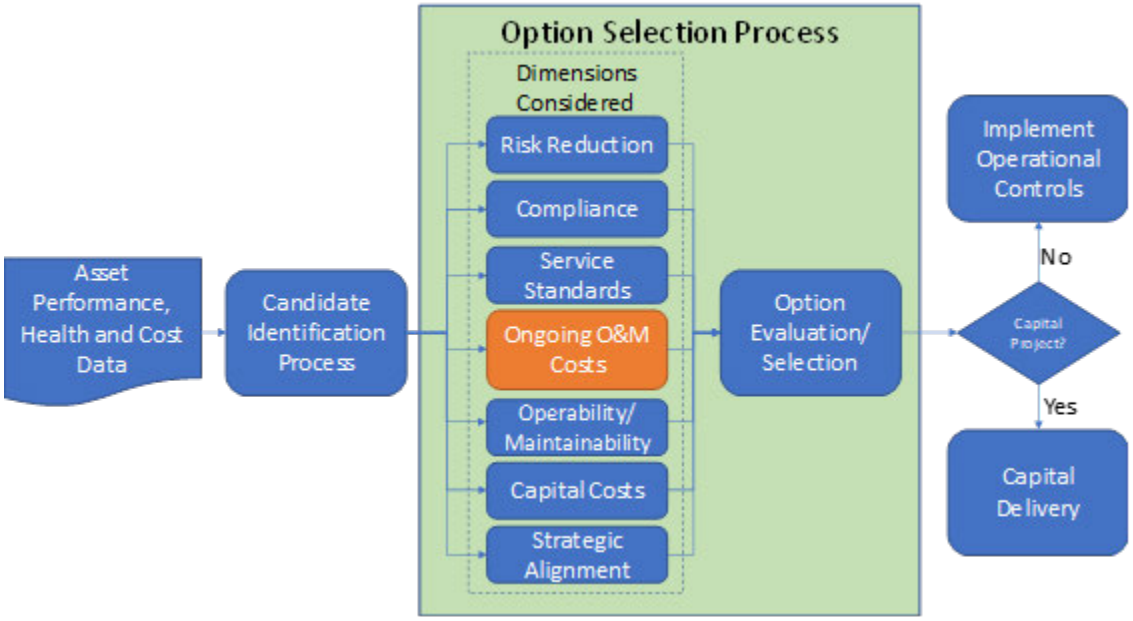
- All reasonably practicable measures are taken to prevent and mitigate dam failures and uncontrolled releases to protect people, property and the environment;
- Satisfy the legal and regulatory framework for dam safety by providing an overarching position for dam safety assurance;
- Effective leadership and arrangements for dam safety are established and sustained;
- Appropriate resources are allocated to allow effective implementation of the dam safety management program;
- Dam Safety Management is optimised using a risk-based framework to provide the highest level of safety that can reasonably be achieved at least cost ;
- The organisation has in place appropriate emergency preparedness and response plans and measures in place for dam failures and incidents;
- Safety status and performance are evaluated through regular surveillance, safety reviews, risk assessments and monitoring regimes in compliance with guidelines produced by the Dam Safety Committee and Australian National Committee on Large Dams; and
- The dam safety management practices are regularly reviewed and audited to ensure they remain appropriate and in line with current good practice.

Trade-offs between capital expenditure and operating expenditure

In managing 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 operating expenditure). 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 capital expenditure) would result in an effective escalation of average life-cycle cost.

The optimisation of operational and maintenance costs is considered along with several other dimensions in the process of option evaluation and selection for capital works. Operating cost reduction may be considered as either the primary driver for undertaking capital works, or as a secondary driver influencing the selection of one amongst several options for a capital project. This is shown conceptually in the figure below.

Figure 45 – Operational and Maintenance Operational expenditure as a dimension considered during option analysis and evaluation



Source: WaterNSW

Our capitalisation policy

We have applied our internal accounting policies, in accordance with Federal and State accounting standards, to identify the forecast expenditures that are related to capital expenditure and those expenditures that should be expensed. Our capitalisation policy, as updated from time to time, sets out the criteria for determining whether an asset is created, and the materiality thresholds applied to assess whether an asset should be capitalised or expensed.

Our capitalisation policy complies with the NSW Treasury Policy TPP06-6 "Capitalisation of Expenditure on Property, Plant and Equipment", which is consistent with relevant Accounting Standards including AASB 116 Property, Plant and Equipment.[117] WaterNSW incurs corporate support costs which are triggered by capital and operating projects related to our significant property, plant and equipment portfolio. Corporate support costs have been allocated to projects and determinations as specified in our CAM (Attachment 4). Our CAM provides a practical

[117] https://arp.nsw.gov.au/sites/default/files/tpp06_6.pdf

approach to identify and allocate a supportable proportion of corporate costs to capital projects consistent with the AASB 116.

Under the updated AASB 16 Leases, which applies from the 2019-20 financial year, operating lease payments are now recognised in the balance sheet. Our consolidated accounts will reflect the updated standard. However, the IPART secretariat has expressed a preference for regulated entities to continue to treat operating lease payments as an expense item for pricing purposes, contrary to the new standards. On this basis, WaterNSW's continues to treat operating leases as an expense item in its proposed expenditures.

WaterNSW is currently in the process of implementing new and improved reporting systems and analytical capabilities to identify operating leases payments for future regulatory reports as well as to comply with the updated AASB 16 standards.

WaterNSW reviewed and issued an updated capitalisation procedure, 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 AASB, New South Wales Treasury and other relevant agencies
- WaterNSW makes an appropriate distinctions 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.

Appendix 7 – ICT Capital expenditure

WaterNSW's ICT environment

WaterNSW's ICT systems support every aspect of our role in providing bulk water services to our customers. At its inception in 2015, WaterNSW inherited a mix of ICT legacy systems that were found to be outmoded, overly complex and costly to support. For the following regulatory period, WaterNSW was not a steady state business, changing substantially due to the NSW Government reforms and merger of water agencies.[118]

At the time of the merger, there was significant duplication and inefficiencies in ICT systems, resulting in ineffective or limited business process automation capability. This complex and diverse technology platform created risks in our business.

The newly formed WaterNSW established a new corporate direction and Strategic Action Plan for our ICT environment. The new Strategic Action Plan required an 'enterprise' view of the ICT environment.

The objectives of the Strategic Action Plan for our ICT environment are implemented through our ICT Road Map.

ICT Expenditure in the current regulatory period

ICT expenditure is incorporated into the 'corporate systems' category with the amount of capital expenditure shared across the four IPART pricing determinations, based on our approved CAM.

In the current period, our actual capital expenditure in corporate capex (including ICT) is expected to be $36.3 million ($2020-21). This amount is $0.6 higher than IPART's 2017 allowance of $35.7 million ($2020-21) as shown in the table below.

Table 112 – Capital expenditure (including ICT) in the 2017 Determination ($000s, $2020-21)

Corporate Capex	2017-18	2018-19	2019-20	2020-21	Total
Actuals $2020-21	4,747	5,807	10,714	15,007	36,274
Allowance $2020-21	13,433	12,090	4,868	5,255	35,646
Variance	-8,686	-6,283	5,846	9,752	629

Current period spend is mostly attributed to the implementation of CIMs, which is discussed in further detail below. Most of the underspend in FY18 and FY19 is due to the delay in the redevelopment of the Water Accounting System, which was deferred in the current period. This project has morphed over time to become larger in scope and has been developed into the WAVE program which we are forecasting to deliver over the next 3 years.

The ICT Road Map on which the current period allowances are based set out WaterNSW's ICT capability requirements over the 2017 Determination period, and was submitted to IPART as part of the 2017 Rural Valleys Pricing Review. It comprised five themes and programs:

[118] Aither, Final Report, WaterNSW Greater Sydney expenditure review, February 2016, p.vi

Table 113 – ICT Road Map themes and programs

Program	Aim
Customer Value Program	To provide clarity on our customer and retail aspirations and deliver the enabling technology to support new and improved services.
Insightful Information Program	To develop the necessary capabilities to make the best use of our information and knowledge, gaining insights into improvement opportunities and our customer's needs.
Improved Productivity Program	To reduce inefficiencies and duplication, giving our people the right systems and technologies to support their work.
Proactive Planning and Governance Program	To develop the guiding frameworks and knowledge to better understand, plan for and deliver on the business aspirations of Water NSW.
Healthy Assets Program	To optimally manage the ICT assets of WaterNSW to reduce business risk and cost, and to ensure they support the business needs now and into the future.

Source: WaterNSW

The ICT Road Map has guided ICT investment in the current regulatory period. Implementation of the ICT Road Map has delivered transformation objectives which were contained in the WaterNSW Strategic Action Plan.

In April 2019, the final stage of the Consolidated Information Management System (CIMS) project was delivered. This is one of our key projects to deliver modern business systems capability across our core organisational functions. CIMS is changing and improving the ways we work and provides a modern whole of business systems platform. CIMS supports everyone at WaterNSW to "Achieve Together" by sharing information and developing our strategic forecasting and decision-making skills and capability.

Substantial progress was made by WaterNSW in the current regulatory period towards increasing the efficiency and effectiveness three legacy systems from SCA, SWC and DOI. The improvements included ICT systems used by employees, the consolidation to a single login environment, updated website content, integration of water market systems and implementation of a unified Enterprise Resource Management system. These improvements will continue into the 2021 Determination period.

Water NSW is harmonising its Information and Communications Technology (ICT) systems (including a unified Enterprise Resource Management system) with the goal of reducing the number of end of life and duplicate systems. Our Customer Information Management System (CIMS) has been successfully launched, which will lead to the retirement of outdated legacy ICT systems. WaterNSW has significantly consolidated its information and communications systems during the last regulatory period to replace the fragmented systems that supported processes within SCA, State Water and DPIE. The improvements have resulted in consolidation of websites, infrastructure (email systems, desktop, data centre and collaboration tools) and key corporate applications across business functions including Finance, Customer Billing, Asset Management, HR, Safety, Project Management and Legal.

The implementation in April 2019 of our Consolidated Information System (CIMS is an ERP solution using Microsoft Dynamics D365 as the foundation) has meant that systems such as TechOne, Proclaim, Maximo, Smart Assets and Manage Engine are no longer required, and the costs of these systems are being removed as the data is archived for business access. As at June 2020, decommissioning of these systems is underway. In addition, the new CIMS platform

is now being leveraged to continuously improve the efficiency and efficacy of business processes across these functional areas.

ICT Expenditure in the upcoming regulatory period

Our proposal to invest in ICT in the 2021 Determination period will ensure that we continue transforming the ICT environment to meet the needs of our customers in an efficient and prudent way.

Our ICT forecast for the 2021 Determination period is based on the 2020-2029 ICT Strategic Plan. The 2020-2029 ICT Strategic Plan identifies themes closely aligned to our strategic priorities to better support our people and contribute to WaterNSW's core functions, with the goal to deliver operational efficiency and ultimately customer value. We are now beginning the implementation of the next wave of technology platforms that will establish the future capabilities that WaterNSW needs.

The ICT Road Map for future years is shown in the figure below.

Figure 46 – ICT Road Map (corporate perspective)

The ICT Strategic Plan includes nine strategic programs focusing on customer, efficiency and technology foundations. We note that the costs in the following table are for the total WaterNSW business. A proportion of these costs are allocated to Rural Valleys in accordance with our CAM.

Table 114 - ICT Capital expenditure Program costs – total for WaterNSW

Program Theme	Program	Proposed Activities
Customer and Community	Water Market Systems	• Implement a water licensing system to improve trading functions • Implement water accounting to improve billing • Install a Customer Relationship Management system • Install a Customer Portal • Integrate the above with existing WaterNSW systems (e.g. CIMS)
	Analytics	• Build an analytics program that couples a data repository with Power BI to enhance analytics capability • Under a data integration strategy, enable better sharing of data between internal and external parties through a portal or common access point
Supporting our People	Corporate Systems	• Replaces legacy corporate applications (prior to creation of WaterNSW)

Program Theme	Program	Proposed Activities
		• Implement an integrated enterprise resource planning capability (i.e. Microsoft Dynamics 365) to manage assets, human capital and costs.
	EUC/Collaboration	• Establish a single online sign-on system for WaterNSW staff to unlock core corporate systems • Automate processes to on-board and off-board staff • Provide virtual systems to increase staff collaboration and agility (e.g. through O365 solutions)
	Business Process Automation	• A Business Process automation system to improve the operational efficiency of WaterNSW internal ICT processes • This includes an ICT asset management system and event management system
Enabling reliable services and agile solutions	Operations Technology	• Install five telemetry systems to collect data at remote locations • Consolidate rural and metro SCADA systems into a single system • Investigate IOT technologies to lower costs of asset and operational monitoring • Centralised control room for the integration of SCADA systems to better control and monitor river and dam operations
	Information Security	• Improve cyber security management as WaterNSW maintains and operates critical infrastructure • Conduct threat and risk assessments • Periodic testing of critical IT systems
	Telecommunications	• Improve telecommunications network connectivity between corporate offices and sites (e.g. dams) across 85 locations • Improve the operational network across 46 locations (e.g. routers, switches, SCADA servers) • Renew and improve voice and other telecommunications networks for field staff
	Data Centre Services	• Periodic renewal of data centre infrastructure from assets reaching end of life • Improving disaster recovery capability for data centre services
Business as usual	ICT Technology	• Enhance the ICT Project Management Office function and embed the Project Delivery framework governing the provision of ICT services • Establish periodic strategic planning process
	Renewals	• Renewal and refresh of ICT infrastructure for WaterNSW covering hardware (e.g. laptops, printers), software procurement and telecommunications devices (e.g. mobile phones). • The renewal and refresh of ICT infrastructure will improve the reliability of IT assets and optimize lifecycle costs.

Cybersecurity issues have been identified as one of the top risks in the Power and Utilities industry[119]. The increased convergence of information technologies (IT) and operational technologies (OT), along with the reliance on IoT and Cloud services, represent a new pathway for security threats.

Breaches of payment systems and confidential information is an emerging issue faced by essential infrastructure services, both in Australia and globally. CERT Australia, an Australian Government body focused on cyber threats to national infrastructure and systems, identifies a strong relationship between the use of the internet and information and communication

[119] EY Power and Utilities Risk Pulse: https://www.ey.com/gl/en/industries/power---utilities/ey-see-how-your-risk-pulse-measures-up

technology (ICT) in critical infrastructure delivery, and the risk and impact of a cybersecurity incidents.[120] For example, the Water Corporation in Western Australia observed that there were 7,000 malicious connection attempts per day, and an attempt in Syria saw hackers breach a water utility's control system and alter chemical systems for treatment.[121]

A cybersecurity or data breach incident at WaterNSW would have adverse implications for public health, employee and contractor safety, regulatory compliance, as well as our reputation and public trust. While new technologies have the potential to lead to efficiency gains and benefits for consumers, they require improvements to security in parallel.[122] Therefore, WaterNSW has recognised the need for a more mature cyber security capability to mitigate cyber risk and respond to potential and emerging threats.

Further, the increasing concern around cyber security for critical infrastructure more generally was reflected in the 2017 Finkel Review of the energy sector. This highlighted the trade-off between the innovation benefits of adopting digital technologies and the risk of cyber security threats. To improve preparedness of electricity infrastructure to such threats, the review recommended the publication of an annual report into cyber security preparedness of the National Electricity Market. This is to assess and action any issues related to the cyber maturity of energy market participants.[123] In relation to water, IPART incorporated cyber security requirements as part of Sydney Water's 2020-25 Operating Licence.[124]

The WAVE Program

The WAVE Portfolio constitutes a substantial share of the WaterNSW ICT Capital investment plan for the next three years and involves a proposal to transform operational business processes. The WAVE program represents a significant step change in customer service, water delivery and water data management. The WAVE program will significantly enhance our ability to serve our customers, providing for improvements to our customer interfaces:

- An online licensing and transactions system (Customer, Stakeholder and Water Markets stream);
- Streamlining our delivery and operational decisions for our customer transactions (Water Delivery and Visualisation stream); and
- Enhancements to our ability to monitor and model our water system (Water Monitoring and Modelling stream).

The key objectives of the WAVE Program include:

- Service and efficiency improvement;
- Centralised management of water information;
- Consolidation of IT systems; and
- Mitigation of risks.

[120] CERT Australia, *Critical infrastructure & big business* (2019) <https://www.cert.gov.au/critical-infrastructure-big-business>.
[121] Thea Cowle, 'Caught in the network', *The Australian Water Association Magazine* (online), November 2016 <https://issuu.com/australianwater/docs/current_november_2016/1?ff&e=32264009/57258143>
[122] WaterSource, 'Water utilities set to tackle cyber security', *Water source* (online), 28 November 2016 <https://watersource.awa.asn.au/business/assets-and-operations/water-utilities-set-to-tackle-cyber-security/>.
[123] Commonwealth of Australia 'Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future' (2017) <https://www.energy.gov.au/sites/default/files/independent-review-future-nem-blueprint-for-the-future-2017.pdf>.
[124] IPART, *Review of the Sydney Water Corporation Operating Licence 2015-20 – Final Report*, April 2019, Recommendations 77 and 78. Available at https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/licensing-public-water-business-licence-end-of-term-review-of-operating-licence-2015-2020-sydney-water/working-papers/iparts-report-to-the-minister-sydney-water-licence-review-12-april-2019.pdf

For each of the three WAVE streams, the table below sets out the current state of our service delivery, and the proposed solutions which WAVE will deliver. These include:

1. Customer and Water Markets Program
2. Water Delivery and Visualisation Program
3. Water Data Program

The table sets out the key activities for each program.

Table 115 - WAVE program by work stream

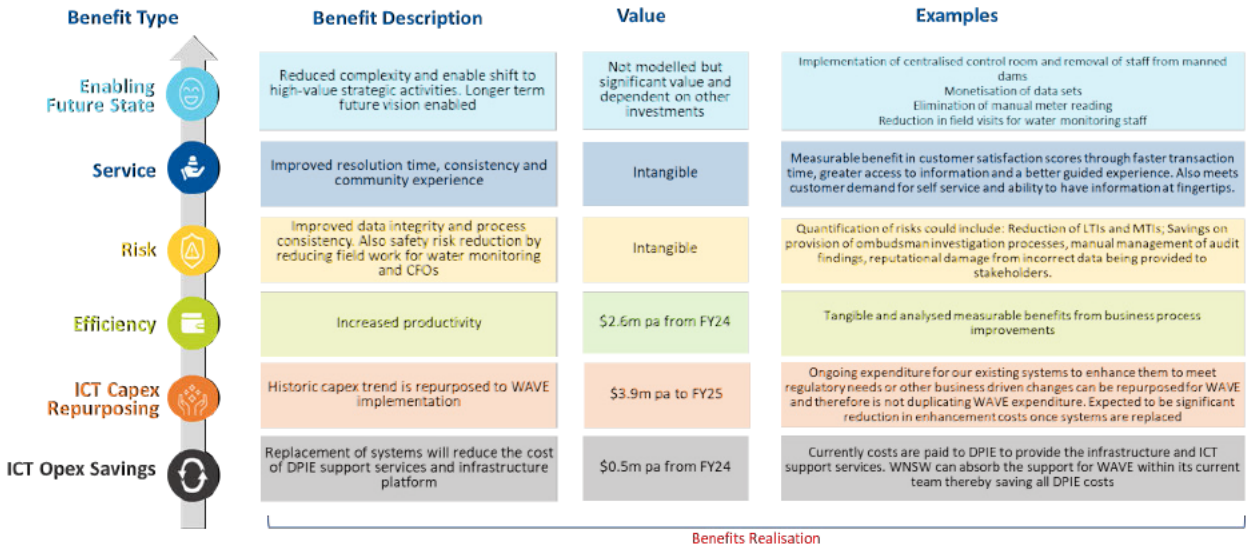
Stream	Current Issues	Proposed Solution: Key Activities by Stream
Customer, Stakeholder and Water Markets	• Difficult for customers to get access to information in a central location • Licence and trade transactions done over the phone or by paper • Inefficient administration processes for customer service staff.	• Online self-service customer portal to make it easier for customers to make transactions and licensing applications • Enables WaterNSW staff to focus on complex customer queries as simpler customers transactions are automated online • Workflow based on customer queries and transactions can be more efficiently allocated and addressed to relevant WaterNSW staff
Water Delivery and Visualisation	• Manual water delivery operations • Time consuming to provide water delivery and operations advice as data is dispersed across multiple sources.	• An online 'Water Insights' portal that allows dam operators, water delivery planners and the broader community to understand a range of water system information (e.g. dam inflows, extractions, evaporation). This information will be presented spatially and with graphs over a historical time period. • A centralised control room for integration of the SCADA systems with the ability to monitor and control of river and dam operations.
Water Monitoring and Modelling	• Poor data quality and data drawn from disparate sources • Reports, graphs and charts are manually developed • Groundwater data not integrated between	• Streamline and make consistent the process for quality checking, rating and publishing data across all data sources. • Unify the way data is collected from the field by integrating data

Stream	Current Issues	Proposed Solution: Key Activities by Stream
	licences, sites and other technical data.	collection processes for asset maintenance with telemetry collected data. • Provide a data portal for all end users of data to make it easier to access and analyse data.

The WAVE Program will deliver a range of efficiency benefits and improved value for our customers through more streamlined service delivery and greater access to information. These benefits are outlined below:

- **Replacement of systems** – 41 applications that provide a piecemeal solution currently will be replaced by just 7 new systems. The solution will eliminate the cost of and reliance on DPIE support services and infrastructure platform for applications transferred to WaterNSW in 2016. It also allows proper separation of function between the entities resolving the legacy uncontrolled access that has persisted since "stage 2" of the Bulk Water Reforms in 2016.
- **Risk mitigation** - in relation to manual data management, key person risk, cyber security or other major incidents that consume business resources and create reputational damage from incorrect data being provided to stakeholders.
- **Efficiency gains** in substantial productivity uplift across the business from planned improvements in processes.
- **Improved customer service** from meeting customer expectations that now include web-based transactions, real time visibility of transaction status and water information
- **Enabling future state** by providing a simplified, integrated and modern platform that allows development of new and improved processes and services.

Figure 47 - Expected benefits from the WAVE Program



Appendix 8 – Request from DPI-E with respect to MDBA/BRC costs

NSW | Planning, Industry & Environment

Our ref: OUT20/2627

Michael Martinson
Manager Economic Regulation
WaterNSW
1 Parramatta Square
169 Macquarie Street
Parramatta NSW 2150

Dear Mr Martinson

Murray Darling Basin Authority and Border Rivers Commission Cost Recovery Arrangements

I am writing to advise of the costs arising from the forward program of the Murray-Darling Basin Joint Venture and the Dumaresq-Barwon Border Rivers Commission (DBBRC) that should be included in the WaterNSW submission to the review of prices for Rural Bulk Water Services in the Murray-Darling Basin, commencing 1 July 2021.

The Murray-Darling Basin Authority (MDBA) administers Joint Programs on behalf of the Murray-Darling Basin jurisdictions. The costs outlined in this letter are based on the Joint Program budget forecasts included in MDBA 2019-20 to 2022-23 Work Plan and Budget (Amended 17 December 2019).

The Joint Programs include natural resource management related non-river operations (Non-RM) and bulk water infrastructure projects relating to river operations (RMO). The Water Administration Ministerial Corporation (WAMC) pricing submission for water management charges has historically sought recovery of the user share of the State's MDBA Non-RM costs from water users. RM contributions are passed on to water users via WaterNSW's Rural Bulk Water Services pricing determination.

The NSW Government currently recovers around 35% of the annual DBBRC via the WAMC Determination and 65% via the NSW Rural Bulk Water Pricing Determination, based on historical natural resource management and river operations costs respectively. This has been revised to 42% WAMC and 58% Rural Bulk Water for the 2021 Determination price path based on the DBBRC five year budget forecast out to 2024-25.

Table 1 in the attachment to this letter provides the cost recovery between the Rural Bulk Water Services and WAMC (water management charges) Determinations.

Table 2 provides the non-RM costs that reflect the WAMC share of funded activities and uses Independent Pricing & Regulatory Tribunal (IPART) cost sharing criteria to determine the costs that are attributable to water users.

Please note that the MDBA data provided extends only to the 2022/23 financial year, which is the limit of Joint Venture forward planning at this point in time. In the absence of MDBA Work Plan and Budget data out to 2025/26, past practice has been to repeat the previous year for the remainder of the price path period (i.e. in this case, 2022/23 figures).

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IPART will review the prudence and efficiency of MDBA and DBBRC operations in its review of prices for both the WaterNSW (Rural Bulk Water Services) and the WAMC (water management charges) Determinations. In this regard, I note that the Commonwealth Minister for Water Resources recently announced the first triennial review of River Murray operations costs, due to be completed during 2019-20 and published on the MDBA website.

Yours sincerely,

[redacted]

Amanda Chadwick
Executive Director
Reform Implementation

13 March 2020

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Attachment A

Table 1: MDBA Joint Program and DBBRC costs and WAMC/ WNSW split ($19/20 '000)

NSW contribution to MDBA and DBBRC	2021/22	2022/23	2023/24	2024/25	2025/26
NSW Contribution to MDBA	$30,199	$32,318	$32,318	$32,318	$32,318
NSW Contribution to BRC	$1,856	$1,896	$1,953	$2,011	$2,011
Total NSW Contribution	$32,055	$34,213	$34,270	$34,329	$34,329
MDBA Contribution based on forecast total cost as at February 2020					
WNSW Bulk Water	$23,825	$25,868	$25,868	$25,868	$25,868
WAMC	$6,374	$6,449	$6,449	$6,449	$6,449
DBBRC Contributions based on forecast total cost as at February 2020					
WNSW Bulk Water	$1,073	$1,097	$1,130	$1,163	$1,163
WAMC	$782	$799	$823	$848	$848
Total MDBA and DBBRC contribution					
WNSW Bulk Water	$24,899	$26,965	$26,998	$27,032	$27,032
WAMC	$7,157	$7,248	$7,272	$7,297	$7,297

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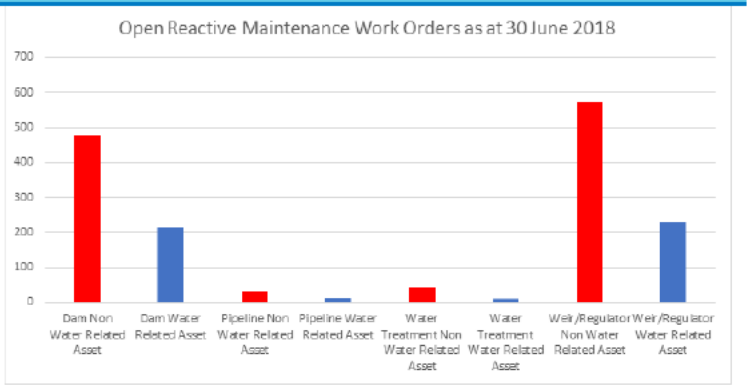
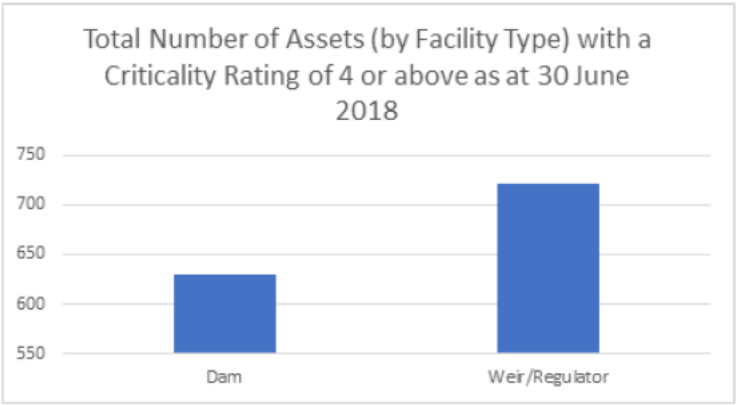
Table 2: WAMC cost recovery from users for MDBA and DBBRC ($19/20 '000)

	2021/22	2022/23	2023/24	2024/25	2025/26
NSW Contribution to MDBA	$30,199	$32,318	$32,318	$32,318	$32,318
WAMC share of MDBA costs	$6,374	$6,449	$6,449	$6,449	$6,449
User share of WAMC MDBA costs	$4,485	$4,580	$4,634	$4,526	$4,526
Government share of WAMC MDBA costs	$1,889	$1,869	$1,815	$1,924	$1,924
User share %	70%	71%	72%	70%	70%
	2021/22	**2022/23**	**2023/24**	**2024/25**	**2025/26**
NSW Contribution to DBBRC	$1,856	$1,896	$1,953	$2,011	$2,011
WAMC share of DBBRC costs	$782	$799	$823	$848	$848
User share of WAMC DBBRC costs	$740	$755	$778	$801	$801
Government share of WAMC BRC costs	$43	$44	$45	$47	$47
User share %	95%	95%	95%	95%	95%
Total WAMC MDBA and DBBRC user allocation	$5,225	$5,335	$5,412	$5,327	$5,327

Appendix 9 – Performance against key performance indicators

This Appendix sets out WaterNSW performance against the 2017-21 Determination output measures for the 2017-18 and 2018-19 financial years. Our 2019-20 performance will be provided to IPART as part of the 2021 IPART review, and after the end of the 2019-20 year.

Activity against output measures 2017-18 – Rural

Project	Output measure	Expected completion	Activity 2017-18
Asset renewals and condition	Report on: ▼ Service orders requiring reactive maintenance, broken down by asset sub-types. ▼ Number of assets with a criticality rating of 4 or above, broken down by asset sub-types.	Report annually	 Majority of the open reactive work orders have been raised on non-water delivery assets located on Dam and Weirs.  All the high criticality assets are located on Dam and Weir sites.
WaterNSW Enterprise Resource Planning (ERP)	Ceased use of legacy information/ERP systems.	1 July 2020	Project progressed through development and configuration during 2017-18. Core ERP replacement currently scheduled to go-live in Q3FY2018/19. Following successful go-live and progressive addition of remaining modules through 2018-19 legacy information and ERP systems will retired.

Project	Output measure	Expected completion	Activity 2017-18
Regulatory Health and Safety expenditure by valley on 'Renewals – Safety'	WHS risks lowered to As Low As Reasonably Practicable (ALARP), providing a safe working environment for staff, reducing risk to the public, and maintaining operability.	30 June 2020	Significant progress has been made in the delivery of a program of works to address safety issues on a number of Lowbidgee and Murrumbidgee weirs and regulators, with completion expected in early 2019. In addition to this the following projects are currently underway: • Dam Survey Points – A project to address multiple safe access risks on dam survey points around the state, with a forecast completion date of late 2019. • Rural Small Flow Regulators – A project to replace several Small Flow Regulators at dam sites, which have been assessed as presenting an unacceptably high risk for operators. • Burrinjuck Dam Southern Spillway Access – A project to provide safe access to the southern spillway for dam surveillance and maintenance purposes. • Murrumbidgee Maintain Capability Package 2 – A water infrastructure renewals project in the Murrumbidgee, which includes concurrent delivery of a number of health and safety initiatives.
Keepit Dam	Completion of works meeting the stated needs & requirements.	30 June 2020	Upgrade works is continuing and is targeted for completion in mid 2019. Total upgrade works to date (based on separate packages) approximately 50% complete
Keepit Dam safety project	Life safety risk position from Keepit Dam reduced to below Australian National Committee on Large Dams (ANCOLD) Limit of Tolerability for societal risk (ANCOLD Guidelines on Risk Assessment Figure 7.4).	30 June 2020	Post tensioning works have been in progress throughout 2017-18 and once complete will further contributed to the reduction of life safety risks in accordance with ALARP principles. Planning work on studies to identify further risk reduction measures are in progress.
Future Dam Safety capital works strategy	Following expected changes in dam safety regulations, formulate a medium-term (5-10 year) plan of capital works required.	24 months following confirmation of applicable dam safety regulations in NSW	This work will be based on new dam safety regulation and has not started.

Activity against output measures 2018-19 - Rural

Project	Output measure	Expected completion	Activity 2018-19
Asset renewals and condition	Report on: - Service orders requiring reactive maintenance, broken down by asset sub-types. - Number of assets with a criticality rating of 4 or above, broken down by asset sub-types.	Report annually	The Rural Valleys had 2,441 reactive work orders in 2018-19 The Rural Valleys have 1,361 assets with a criticality of 4 or 5. A breakdown by asset sub-types for each of these responses is found in Attachment 1.
WaterNSW Enterprise Resource Planning (ERP)	Ceased use of legacy information/ERP systems.	1 July 2020	Work is continuing on building suitable solutions for components of legacy applications that were not completed at CIMS go live. Also data archiving and access processes are also in progress
Regulatory Health and Safety expenditure by valley on 'Renewals – Safety'	WHS risks lowered to As Low As Reasonably Practicable (ALARP), providing a safe working environment for staff, reducing risk to the public, and maintaining operability	30 June 2020	Works were substantively completed to undertake safety improvements on 42 sites in the Murrumbidgee and Lowbidgee Valleys. Planning activities were undertaken on a further program of works across rural valleys the 'Rural MCP Program (All Valleys)'. The program comprises of works across 170 sites, approximately 40% of which has health and safety improvement as the primary driver. Additionally, a project has progressed to execution to address 161 inherent hazards with access to survey points at 17 dams across WaterNSW.
Keepit Dam	Completion of works meeting the stated needs & requirements	30 June 2020	Additional strengthening works outside the original scope are being carried out on the spillway section of the dam, extending the works until December 2020.

Keepit Dam safety project	Life safety risk position from Keepit Dam reduced to below Australian National Committee on Large Dams (ANCOLD) Limit of Tolerability for societal risk (ANCOLD Guidelines on Risk Assessment Figure 7.4).	30 June 2020	As above, the benefits will be realised on completion of the project.
Future Dam Safety capital works strategy	Following expected changes in dam safety regulations, formulate a medium-term (5-10 year) plan of capital works required.	24 months following confirmation of applicable dam safety regulations in NSW	The new regulations commenced on 1 November 2019. The standards and guidance material that stipulate regulatory requirements below the safety threshold are still to be developed. This is expected to be delivered within a 2-year window starting at the inception of the new regulations. The development of the corporate strategy is dependent on the publication of these requirements and guidelines. When the standards and guidance material have been gazetted, we will require at least 12 months to develop the strategy i.e. apply the methodology, assess compliance and develop risk mitigation solutions.

Reactive Work Orders – Rural Valleys

WaterNSW transitioned to a new Enterprise Asset Management System in April 2019. This transition included a revision of standard asset classes. As such the reactive work orders for 2018/19 financial year are presented in terms of both the legacy system and the new Enterprise Asset Management System for the respective periods.

Rural Valleys July 2018 – April 2019, Reactive Work Orders

Asset Type	Reactive Work Orders
PLANT	171
BUILDINGS	169
LAND	156
MISCELLANEOUS	120
REGULATOR	118
LIFTING EQUIPMENT	87
STRUCTURE	84
WEIR	75
ELECTRICAL POWER & LIGHTING	64
PIPEWORK	60
DAM SAFETY	56
WATER MONITORING	47
GATES	47
ROADS	46
VALVES	45
VEHICLES	37
EMBANKMENTS	37
SAFETY	37
SPILLWAY	35
WALLS	34
ACCESS	33
SCADA EQUIPMENT	30
OUTLET STRUCTURE	24
FISHWAY	23
WATER TREATMENT PLANT	22
COMPLIANCE	17
TUNNEL	17
CONTROLS	16
INTAKE WORKS	15
BRIDGE	14
OPERATIONS	13
COMMUNICATIONS	13
GALLERY	13
PUMPS AND MOTORS	12
FENCING	12
MARINE EQUIPMENT	11
PROTECTIVE COATING	10

Asset Type	Reactive Work Orders
LOCK CHAMBER	9
DISSIPATOR	9
TRASHRACKS	8
GAUGE BOARDS	7
BOREHOLES	7
GUARD RAILING	6
SIGNS	6
RESERVOIR	5
FUSE PLUGS	5
TANKS	5
LEVEE	4
DAMS	4
EROSION CONTROL	3
HYDRAULIC	3
SECURITY	3
CHANNEL	2
DRAINAGE	2
SAFETY	2
BARBEQUES	2
COLD WATER CURTAIN	1
TANK	1
Grand Total	**1914**

Rural Valleys April 2019 – June 2019, Reactive Work Orders

Asset Type	Reactive Work Orders
Water Infrastructure-Water Storage Equip-Weir Facility	46
Water Infrastructure-Water Transfer Equip-Valve	32
Compliance-Assets subject to Environmental/Water Quality Checks	30
Compliance-Valley Management	28
Water Infrastructure-Water Storage Equip-Gate	22
Plant and Equipment-Lifting Equip-Crane	21
Water Infrastructure-Water Storage Equip-Dam Wall	20
Land & Related Infrastructure-Property	20
Plant and Equipment-Minor Plant	19
Land & Related Infrastructure-Operational	17
Compliance-Assets subject to Audit Inspections - Dam Surveillance	16
Water Infrastructure-Water Storage Equip-Trunnion	14
Water Infrastructure-Water Storage Equip-Dam Facility	12
Land & Related Infrastructure-Structures-Minor Support Structure	12
Plant and Equipment-Transport Vehicles-Trailers	11
Building Structures & Equip-Building Fabric	11
Building Structures & Equip-Building (General)	11

Asset Type	Reactive Work Orders
Building Structures & Equip-Building (General)-Buildings (General)	10
Elect, Instrument & Control Equip-LVolt Equip-Monitor Instrumnt & Equip	10
Water Infrastructure-Water Storage Equip-Minor Weir Facility	8
Water Infrastructure-Water Transfer Equip-Channel	7
Land & Related Infrastructure-Signage	7
Elect, Instrument & Control Equip-LVolt Equip-Elec Control Equip	7
Water Infrastructure-Process Equipment-Actuator	7
Compliance-Assets subject to Water System Operational Checks	5
Land & Related Infrastructure-Borehole	5
Water Infrastructure-Water Transfer Equip-Screens	5
Land & Related Infrastructure-Structures-Handrails and Decking	5
Land & Related Infrastructure-Fencing-Rural Fencing	5
Water Infrastructure-Process Equipment-Filter	5
Water Infrastructure-Water Transfer Equip-Pipes and Pipework	5
Elect, Instrument & Control Equip-LVolt Equip-Power and Lighting	5
Elect, Instrument & Control Equip-LVolt Equip-Power Gen & Distrib	5
Elect, Instrument & Control Equip-LVolt Equip	4
Plant and Equipment	4
Water Infrastructure-Water Transfer Equip-Lock Facility	4
Plant and Equipment-Marine Equipment-Buoy	4
Plant and Equipment-Lifting Equip	4
Plant and Equipment-Transport Vehicles-Trucks	3
Land & Related Infrastructure-Roads-Sealed	3
Water Infrastructure-Water Transfer Equip-Water Main Facility	3
Plant and Equipment-Safety Equipment-Emergency Eye Wash & Shower	3
Building Structures & Equip-Building (General)-Filtration Shed	3
Land & Related Infrastructure-Fencing-Security Fencing	3
Land & Related Infrastructure-Grounds & Gardens-Recreational Area	3
Water Infrastructure-Water Transfer Equip-Levee	2
Land & Related Infrastructure-Roads-Unsealed	2
Elect, Instrument & Control Equip-LVolt Equip-Electrical Boards	2
Plant and Equipment-Safety Equipment-First Aid Kit	2
Water Infrastructure-Water Storage Equip-Regulator	2
Plant and Equipment-Transport Vehicles-Front End Loader	2
Plant and Equipment-Lifting Equip-Winch	2
Plant and Equipment-Marine Equipment-Boats	2
Land & Related Infrastructure-Bridge	1
Plant and Equipment-Dam Surveillance Equipment-Piezometers/Uplifts/Boreholes Instrument	1
Building Structures & Equip-Domestic Hyd Equip & Fitting-Water Tank	1
Elect, Instrument & Control Equip-HV Equip-Power Gen & Distrib	1
Elect, Instrument & Control Equip-LVolt Equip-Lighting	1
Plant and Equipment-Lifting Equip-Hoist	1
Water Infrastructure-Water Transfer Equip-Control Gate	1
SCADA Equipment	1
Plant and Equipment-Dam Surveillance Equipment	1

Asset Type	Reactive Work Orders
Plant and Equipment-Dam Surveillance Equipment-Survey Equipment	1
Plant and Equipment-Safety Equipment-Asbestos Containment Equipment Bins	1
Plant and Equipment-Safety Equipment-Defibrillators	1
Water Infrastructure-Water Storage Equip-Valve House	1
Building Structures & Equip-Building (General)-Storage Buildings/Facilities	1
Building Structures & Equip-Building Fabric-Roof	1
Hydropower Station	1
Plant and Equipment-Safety Equipment-Safety Harnesses & Fall Arrest Equipment	1
Plant and Equipment-Marine Equipment-Outboard Motor	1
Water Infrastructure-Water Transfer Equip-Minor Pipes & Valves	1
Water Infrastructure-Water Storage Equip-Fishway	1
Water Infrastructure-Water Transfer Equip-Pump	1
Building Structures & Equip-Security Systems & Equipment-Security System	1
Water Infrastructure-Water Transfer Equip-Tunnel & Shaft	1
Land & Related Infrastructure-Sewerage-Septic System	1
Plant and Equipment-Safety Equipment-Gas Detector	1
Plant and Equipment-Fire Protection Equipment-Fire Fighting Extinguishers/Hoses	1
Water Infrastructure-Process Equipment-Compressor	1
Grand Total	**527**

Assets with Criticalities 4 and 5 by Asset Sub Class

Asset Sub Class with Criticalities 4 & 5	Count
Dam	228
Dam Gate (Fixed Wheel, Stoney, Drum, Radial). Note: Use VLV for regular Gate Valve. Use DOR for a fence gate)	148
Structure – Concrete – Minor	138
Structure – Steel – Minor	120
Building	90
Hoist	70
Road / Track / Car Park	56
Bridge (Civil Structure) NOTE: For a Network Bridge, use EEX)	44
Crane (As per AS1418 definition)	33
Fence	33
Sheetpiling	30
Channel	27
Rope (Wire, Chain etc)	26
Valve	26
Pipes/Pipework	23
Actuator (Electrical/Pneumatic/Hydraulic)	21
Intake Works/Intake Tower	17
Local Isolating Switch	17
Spillway	17
Rockfill / Rock Protection	14
Sign – Information / Direction / Interpretive	11
Tunnel	11
Bulkhead/Steel Baulk/Bypass Baulk	9
Lifting Equipment (Jib/Monorail/Davit/Mobile Gantry/A-Frame, etc)	9
Protective Coating	9
Surveillance/Piezzometer/Uplift	9
Gallery	8
Property or Land	8
Roads – Culvert	7
Screen	6
Telephony Equipment	6
Vee Notch / Seepage Weir	6
Distribution Board	5
Flow Transmitter (also use for pressure sensors giving a flow signal)	5
Stop Board or Stop Log	5
Crash Barrier	4
Flow Control Valve	4
Local Control Panel	4
Pumps (e.g. centrifugal, submersible, etc)	4
Safety Equipment	4
Winch	4
Building Fabric (Roof, Gutters, Windows, etc)	3
Radio (Fixed or Mobile)	3
Valve House	3

Asset Sub Class with Criticalities 4 & 5	Count
Barbeque	2
Fire Extinguisher	2
Lift (Passener or Service Hoist)	2
Lighting / Lights	2
Marine Equipment	2
Penstock Gate	2
Security System	2
Ventilation Panel or System	2
Workshop Equipment	2
Bearing	1
Chain Block (Also use for Pulley)	1
Drain	1
Filter	1
Fire Fighting Equipment	1
Flow Indicator or Gauge, or Rotameter	1
Hydraulic Power Pack	1
Lower Support Structure (Concrete)	1
Plant Equipment	1
Post Tension Anchor	1
Power Supply - Local Isolators	1
Sewer Septic System	1
Switchboard	1
Timber	1
Transport Vehicle or Trailer	1
Trunnion	1
Water Quality Monitoring Station	1
Weather Station	1
Total	**1,361**