



Review of prices for the Water
Administration Ministerial Corporation
from 1 October 2021 to 30 June 2025

Final Report

September 2021

Water >>



Tribunal Members

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The Independent Pricing and Regulatory Tribunal (IPART)

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Acknowledgment of country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders, past, present and emerging.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

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Chapter 1 »

Executive Summary

01

The Independent Pricing and Regulatory Tribunal of NSW (IPART) has completed its review of the maximum prices the Water Administration Ministerial Corporation (WAMC) can charge holders of water access licences in NSW regulated river, unregulated river and groundwater systems (water users).

WAMC is the entity responsible for water resource management in NSW. This includes developing plans for sharing water between users and the environment, administering water licences and allocations, and ensuring compliance with water laws and licences.

Effective management of water is important to ensure this scarce resource is used sustainably, and thus continues to support the health of the environment, the wellbeing of communities, and the security, reliability and value of water users' entitlements in NSW. Effective management will become increasingly critical and challenging in the coming decades, as the climate continues to change.

The prices WAMC charges water users aim to recover a share of the costs incurred in providing its water management functions and monopoly services. The remaining share of these costs is funded by the NSW Government on behalf of the community. WAMC's charges include:

- **Water management charges**, which aim to recover water users' share of the costs of WAMC's water planning, regulation, licensing, compliance, enforcement, customer service and other activities. They also aim to recover users' share of the funds NSW contributes to the cross-jurisdictional water management agencies, the Murray–Darling Basin Authority (MDBA) and the Dumaresq–Barwon Border Rivers Commission (BRC).
- **Consent transaction charges**, which are fee-for-service charges set to recover the administrative costs of issuing or amending water access licences, water allocation assignments and works approvals.
- **Metering charges**, including metering service charges, water take assessment charges, and meter testing and verification charges. These fee-for-service charges are set to recover the cost of maintaining and reading water meters, and of testing or verifying the accuracy of meters.

We completed our review of these prices and made decisions on the prices to apply from 1 October 2021 to 30 June 2025 (2021 determination period). This report outlines these decisions and explains how and why we reached them.

1.1 Price rises are necessary to support sustainable improvements in water management services

Since the 2016 review of WAMC's prices, the NSW Government has changed the legislative framework and structure of the water regulator and government agencies to improve water management arrangements across the state. The reforms respond to the recommendations of several independent inquiries. The inquiries identified historical underperformance in key areas including in the compliance and enforcement of water laws, management of environmental water, measurement of water take, and strategic water planning.¹

WAMC has already taken several steps to respond to the reforms and lift its performance in these areas, including establishing the Natural Resources Access Regulator (NRAR) in late 2017. WAMC's June 2020 pricing proposal outlined its plans to further improve its performance, transparency and accountability in response to feedback from water users.

Our review found additional investment in key areas is necessary to enable WAMC to lift its performance and provide a more sustainable, reliable water resource management system going forward. In particular, it is critical for WAMC to undertake comprehensive long-term planning and implement a robust compliance and enforcement framework. We expect WAMC to use this additional investment to achieve these outcomes over the 2021 determination period.

This investment will be largely funded by the NSW Government. However, as the efficient costs of providing WAMC services are increasing, water users will need to make a greater contribution through higher prices. WAMC's prices will transition towards the levels required to fully recover users' share of efficient costs over time.

Under the new water management arrangements, WAMC's functions are delivered by 2 NSW Government agencies and a utility: the Department of Planning, Industry and Environment – Water (DPIE), NRAR, and Water NSW.



1.2 Prices are more transparent and more cost reflective

In setting prices, we:

- constrained the increase in WAMC's water management component charges to a maximum of 2.5% per year and a total of 10.4% from 2020–21 to 2024–25 (before inflation) for affordability reasons
- set separate MDBA and BRC charges to enhance transparency and ensure all water users pay their fair share of these costs

- set consent transaction and miscellaneous charges to recover the costs of providing these services.

1.2.1 WAMC's water management charges increase by 2.5% per year plus inflation

We set WAMC's water management component charges to transition towards the level required to fully recover water users' share of the efficient costs of WAMC's water management services. Some water sources will achieve full cost recovery over the 2021 determination period, while others will achieve full cost recovery over a number of determination periods.

This means we are constraining the increase in WAMC's water management component charges of bills to a 2.5% increase per year, or 10.4% from 2020–21 to 2024–25 (before inflation and excluding the MDBA and BRC charges).

However, water users' actual price and bill increases will vary, depending on their water source. This is because:

- We decided to increase WAMC's efficient costs since the 2016 Determination (which is driven by higher investment in its water management activities and its corporate support systems, discussed in section 1.4). Under the WAMC proposal, water management charges would have risen by around 5% per year.²
- We decided to generally maintain the cost shares set by our 2019 review of rural water cost shares.³ During this review we examined each of WAMC's 33 activities to understand who was creating the need for the activities (and therefore who should incur the costs through revised cost shares). As a result, 77.9% of the total notional revenue requirement (NRR) is being allocated to water users, compared with 72.3% in the 2016 review of WAMC prices.
- We largely accepted WAMC's proposal to change some of the cost drivers since the 2016 Determination. We are moving to using volume of entitlements as a cost driver for several WAMC activities, as we consider it is more cost reflective than the existing drivers or alternative options.
- We accepted changes to forecasts of entitlements and water take volumes since the 2016 Determination as proposed by WAMC. Some water sources are forecast to have similar entitlements and water take volumes, which means prices will increase where the efficient costs allocated to these sources are higher. However, some water sources are forecast to have higher entitlements and water take volume, which partially offset the impact of these cost increases on prices.
- The level of current cost recovery varies for each water source. Current prices in some water sources are already close to the updated full cost recovery prices calculated in this review. This means prices in these water sources need to increase by less (and in some cases need to decline) in order to achieve full cost recovery going forward.

In section 1.2.3, we show total charges applicable for each water source from 1 October 2021. In addition, section 1.3 provides further information on bill impacts.

1.2.2 MDBA and BRC charges set separately at full cost recovery

In previous determinations, the costs of funding MDBA and BRC activities were bundled with the costs of providing WAMC's water management services and recovered through water management charges. As a result, these costs were not transparent to water users. In addition, small water users who paid the minimum water management charge did not contribute to MDBA and BRC costs.

To improve transparency and equity, we decided to unbundle these costs and set separate MDBA and BRC charges (Chapter 10 discusses the breakdown of charges). These charges will apply to all water users in NSW's sections of the Murray-Darling Basin and Border Rivers systems. We set MDBA and BRC charges to recover water users' share of the full efficient MDBA and BRC costs from 1 October 2021.

1.2.3 Total charges will broadly increase for most water sources

Based on our decisions to transition or set prices at full cost recovery, total charges will decline by up to 15% in 3 water sources, increase by up to 10% in 5 water sources and increase by more than 10% in 19 water sources, before inflation, from 2020–21 to 2024–25 (Table 1.1).

Table 1.1 Total entitlement and water take charges (\$/ML, \$2021–22)

Water sources	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Regulated rivers						
Border	4.06	5.89	5.97	6.05	6.14	51%
Gwydir	3.03	3.59	3.65	3.71	3.78	25%
Namoi	4.57	4.67	4.67	4.67	4.67	2%
Peel	7.43	8.14	8.33	8.52	8.52	15%
Lachlan	3.35	3.51	3.59	3.65	3.73	11%
Macquarie	3.56	3.74	3.82	3.89	3.97	12%
Murray	2.64	2.83	2.87	2.92	2.97	13%
Murrumbidgee	2.35	2.58	2.63	2.67	2.72	16%
North Coast	10.09	10.45	10.71	10.98	11.25	12%
Hunter	5.26	5.45	5.59	5.73	5.87	12%
South Coast	8.66	8.98	9.20	9.43	9.66	12%
Unregulated rivers						
Border	4.78	4.68	4.79	4.90	5.02	5%
Gwydir	4.78	4.68	4.79	4.90	5.02	5%
Namoi	4.78	4.68	4.79	4.90	5.02	5%
Peel	4.78	4.68	4.79	4.90	5.02	5%
Lachlan	5.60	5.79	5.93	6.08	6.22	11%
Macquarie	5.60	5.79	5.93	6.08	6.22	11%
Far West	6.66	8.09	8.09	8.09	8.09	22%
Murray	6.85	7.29	7.46	7.64	7.81	14%

Water sources	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Murrumbidgee	9.08	9.47	9.70	9.94	10.18	12%
North Coast	9.52	9.86	10.11	10.37	10.62	12%
Hunter	3.43	3.56	3.64	3.73	3.82	11%
South Coast	3.24	2.76	2.76	2.76	2.76	–15%
Groundwater						
Inland	6.99	6.23	6.23	6.23	6.23	–11%
Border	6.99	6.66	6.66	6.66	6.66	–5%
Murrumbidgee	4.64	5.04	5.17	5.29	5.41	17%
Coastal	5.05	5.24	5.36	5.50	5.64	12%

Note: Total charges are the sum of entitlement and water take charges for WAMC's water management, MDBA and BRC charges for each water source. In addition, the percentage change includes the impact of inflation from 2020–21 to 2021–22. See Chapter 10 for breakdown of WAMC water management, MDBA and BRC charges.
Source: IPART analysis.

1.2.4 Consent transaction charges are set at cost-reflective levels

From 1 October 2021 most consent transaction charges are higher than the current 2020–21 charges. This increase is because the 2016 Determination was based on a lower forecast number of consent transactions and some charges did not reflect the full efficient costs required to deliver these services.

We adopted WAMC's proposed consent transaction charges subject to a 20% efficiency adjustment. This decision reflects our view that there are considerable efficiencies that can be realised over the 2021 determination period. For the next determination period we encourage WAMC to improve its stakeholder engagement to test affordability and willingness to pay and ensure its consent transaction charges represents an informed trade-off between service delivery and cost.

We also set new consent transaction charges for Water Supply (Critical Needs) assessments.

1.3 Annual bill impacts are expected to be relatively modest

The impact of our water management, MDBA and BRC charges on annual bills for typical water users^a ranges from a decrease of \$290 to an increase of \$610 in 2021–22. We consider them relatively modest in dollar terms and will depend on the water source:

- For regulated water sources, bills for most water sources will increase by up to \$250 in 2021–22. However, in Border bills rise by around \$610.
- For unregulated water sources, bills increase by up to \$460 for 4 water sources and decrease by up to \$240 for the remaining 8 water sources.

^a We defined a typical water user as one who holds 500 ML of entitlements, uses 60% of this volume per year, and are on 2-part tariffs.

- For groundwater sources, bills in the Border and Inland regions decrease by up to \$165 for those on a 2-part tariff. In the Murrumbidgee and Coastal regions, they increase by around \$185 and \$50 respectively, for those on a 2-part tariff.
- For most small water users paying the minimum annual charge (MAC), bills increase by up to \$40. For those closer to the MAC threshold and in regions where MDBA or BRC charges apply, they increase by up to \$135 because these charges are now separately levied on all users in these regions.

Table 1.2 shows the percentage change in typical water user bills for different water sources and tariff types between 2020–21 and 2024–25.

Table 1.2 Change in typical water user bills from 2020–21 to 2024–25

Water source	Regulated water users (2-part tariff)	Unregulated water users on 2-part tariff	Groundwater users on 2-part tariff	Unregulated water users on bills 1-part tariff	Groundwater users on bills 1-part tariff
Border	55%	-11%	-1%	5%	-5%
Gwydir	25%	-11%	N/A	5%	N/A
Namoi	2%	-11%	N/A	5%	N/A
Peel	17%	-11%	N/A	5%	N/A
Lachlan	10%	4%	N/A	11%	N/A
Macquarie	12%	4%	N/A	11%	N/A
Far West	N/A	22%	N/A	22%	N/A
Murray	14%	5%	N/A	14%	N/A
Murrumbidgee	17%	9%	21%	12%	17%
North Coast	14%	10%	N/A	12%	N/A
Hunter	12%	10%	N/A	11%	N/A
South Coast	12%	-13%	N/A	-15%	N/A
Inland	N/A	N/A	-8%	N/A	-11%
Coastal	N/A	N/A	11%	N/A	12%

Source: IPART analysis.

1.4 We made considerable reductions to proposed costs, however efficient costs are increasing

WAMC's total NRR over the 2021 determination period is \$290.4 million (inclusive of MDBA and BRC costs). We increased the total operating expenditure allowance by \$13.6 million (6.8%), and capital expenditure allowance by \$20.6 million (140.3%). The increase in operating expenditure is for WAMC to provide higher levels of service in a number of water management activities. The significant increase for capital expenditure is to provide additional investment for corporate support systems that were not previously included in the allowance for the 2016 determination period.

Although WAMC's efficient costs have increased, they are considerably lower than WAMC's proposed costs for the 2021 determination period. The efficient operating expenditure is around \$63.3 million (22.8%) lower than WAMC's proposal, and the efficient capital expenditure is around \$6.7 million (16.0%) lower than WAMC's proposal (Table 1.3).

Table 1.3 WAMC's proposal and IPART's decision on expenditure for the 2021 determination period (\$ million, \$2020–21)

	Operating expenditure	Capital expenditure
WAMC proposal	277.6	42.1
IPART decision	214.3	35.3
Difference (\$)	-63.3	-6.7
Difference (%)	-22.8%	-16.0%

Note: This does not include proposed expenditure for consent transactions, metering and MDBA and BRC.
Source: IPART analysis.

For operating expenditure, our efficiency adjustments are for compliance and enforcement, regional water planning, customer management and a number of other water management activities. We reduced the compliance costs that users will pay by \$38.9 million (62.0%) compared with WAMC's proposal. However, we consider these costs are required in the short term to address historical compliance issues and should be paid for by the NSW Government. For capital expenditure, our efficiency adjustments are for Water NSW's corporate capital expenditure.

We consider our decisions deliver efficiency benefits to WAMC and water users. We applied different annual catch-up efficiency adjustments ranging from 0% to 2.1% cumulative for different WAMC agencies. This approach recognises the relative improvements each agency could make to its business processes to bring it closer to how an efficient utility operates. We did not apply any catch-up efficiency on some activities to recognise the efficiency challenges proposed by the WAMC agencies. We also applied a continuing efficiency adjustment of 0.7% per year to incentivise continuous productivity improvement.

Chapters 3 and 4 identify key areas where WAMC can make material improvements to achieve our recommended efficiency savings. By improving its processes, WAMC would obtain better quality information to improve the delivery of its water management services to users. This information will also assist IPART by having a greater level of precision in assessing both the efficient levels of expenditure and the services delivered to users. It would also improve the transparency to customers of the programs, projects and assets funded through WAMC's water management charges.

We consider there is potential for WAMC to further improve its stakeholder engagement. Although WAMC consulted with water users on what levels of service they would like it to deliver, further consultation is required to understand their willingness to pay for these service levels. Effective consultation allows customers to understand and comment on the trade-off between service, cost and risk. We would like to see the outcomes of such stakeholder engagement incorporated into future price submissions to IPART.

1.5 The user share of efficient costs has increased

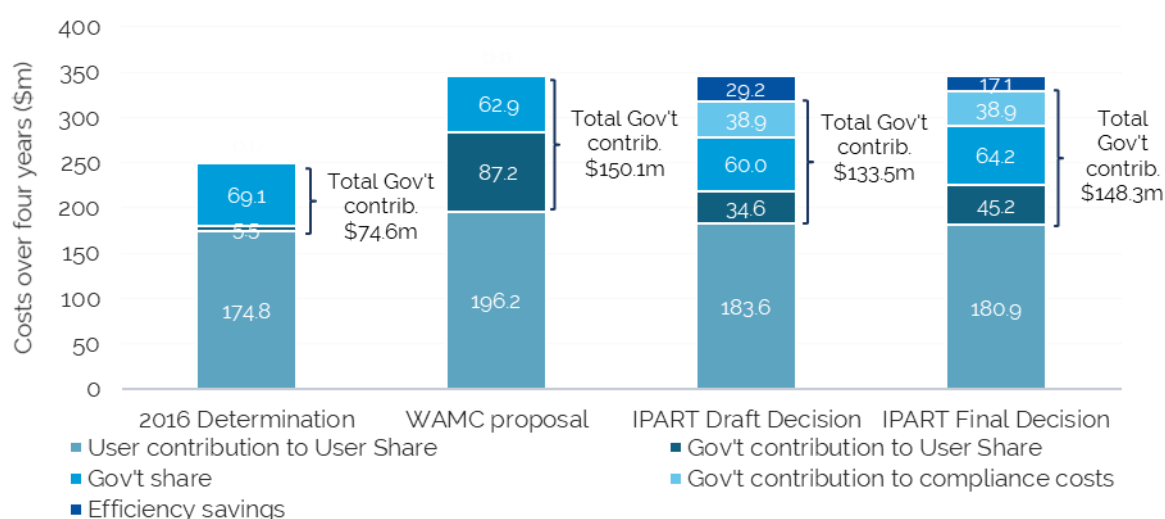
In sharing WAMC's efficient costs between water users and the NSW Government, we applied the updated cost share ratios determined in our 2019 review of rural water cost shares.⁴ The user share is 77.9%, which represents a contribution of \$226.2 million over the 2021 determination period.

1.6 The NSW Government will need to contribute \$148 million

Total prices and bills will be higher for most (but not all) water users compared with 2020–21 prices. However, while prices in some water sources will achieve full cost recovery over the 2021 determination period, the prices will not recover the full user share of efficient costs across all water sources. This is because we want to achieve a balance between setting prices that recover WAMC's efficient costs and mitigating bill impacts on water users. We achieved this balance by transitioning prices towards full cost recovery.

As a result, we expect water users' contribution to fall short of the allocated full cost recovery amount by \$45.2 million. The NSW Government will need to fund this shortfall, as well as fund the Government share of the efficient costs (i.e. \$64.2 million) and contribution to additional compliance costs (i.e. \$38.9 million). This approach results in total NSW Government contributions of \$148.3 million over the 2021 determination period (Figure 1.1).

Figure 1.1 Water user and NSW Government contributions (\$ million, \$2020–21)



Source: WAMC, Pricing proposal to IPART, June 2020; and IPART analysis.

Total NSW Government contributions over the 2021 determination period have increased by \$73.7 million since the 2016 Determination:

- \$39 million of compliance costs to address historical compliance issues will be paid for by the NSW Government.
- \$40 million of higher government contributions to fund the revenue shortfall from water users based on how we set prices over the 2021 determination period.
- These additional contributions are offset by a \$4.9 million lower government share of NRR. Since the 2016 Determination, we reviewed the government and user share of WAMC's NRR or efficient costs. Overall, this approach results in lower government share and higher user share of NRR since our last review.

1.7 Metering reforms means new metering charges are needed

In response to the Matthews review⁵ on improving water resource management, Water NSW is implementing a range of non-urban metering reforms. Improving the standard and coverage of water meters in regional and rural NSW is important. It will protect water users' entitlements and build confidence that our increasingly scarce water resources are managed in a fair and equitable way.

We decided to introduce five new charges for Water NSW to recover the efficient costs of implementing the NSW Government's non-urban metering reforms:

- A 'scheme management charge' would apply as an annual fee to all licensed customers (\$/licence).
- A 'telemetry charge' would apply as an annual fee per metering installation for customers that use telemetry (\$/meter).
- A 'non-telemetry charge' would apply as an annual fee per metering installation for customers that do not use telemetry capacity (\$/meter).
- Two additional charges would apply to customers with government owned meters – 'meter service charge – operating costs' and 'meter service charge – capital costs'. These charges would be applied as an annual fee per metering installation (\$/meter).^b

We allocate the efficient costs of Water NSW's rural bulk water services and WAMC's water management costs between water customers and the NSW Government based on whichever party created the need for an activity (and its associated costs) to be incurred. We considered the underlying driver for metering reform is to protect the rights of water customers and therefore we set the metering charges to recover 100% of the efficient costs from customers.

Our decisions on the levels of non-urban metering charges, how they compare to Water NSW's proposal, and which charges are paid by customers with privately owned and government owned meters are set out in Table 1.4.

^b Customers with privately owned meters will not pay these charges because they will need to purchase and maintain a new or replacement meter themselves at their own expense.

Table 1.4 Final decisions on non-urban metering charges compared to Water NSW's proposals (\$/year, \$2021-22)

	Charge (\$/year) Water NSW 2021 revised proposal	Charge (\$/year) IPART final decision	Privately owned meter	Government owned meter
Scheme management charge ^a	79	73	✓	✓
Telemetry charge ^a	257	226	✓	✓
Non-telemetry charge ^a	257	226	✓	✓
Meter service charge – operating costs ^{b, c}	934	899	✗	✓
Meter service charge – capital costs	608	0	✗	✓

a. The scheme management charge, telemetry charge and non-telemetry charge will vary if more customers use telemetry. See Table 1.8 for further information.

b. Cost for telemetry/non-telemetry is not included in the 'meter service charge – operating costs' for government owned meters.

c. Customers with privately owned meters will not pay these charges because they will need to purchase and maintain a new or replacement meter themselves at their own expense.

Our decisions take account of the NSW and Australian Governments' suite of programs to support the uptake of metering and telemetry equipment. The NSW Government and Australian Government will each provide \$9 million in funding to deliver a telemetry rebate program across NSW. The rebate will automatically be applied as a one-off \$975 credit on a water bill when an eligible water user with a meter connects to the NSW Government's telemetry system. This will provide a financial incentive for metered non-urban water users to use telemetry to remotely transmit their water take information.

As part of our review, we found that the efficient costs to be recovered from the scheme management charge and telemetry charge decrease as more customers use telemetry. However, at this stage, it is unclear how many customers will use telemetry under the new program. We considered it important to set a charge structure that takes account of this uncertainty as well as providing an incentive for users to opt in to telemetry.

We therefore decided that the level of these charges should vary as the proportion of users that voluntarily opt in to telemetry increases, as set out Table 1.5. For example, the scheme management charge would be \$73 a year if there is 0% voluntary opt-in. However, this charge would reduce to \$51 a year if there is 75% or more voluntary opt-in.

Table 1.5 Final decisions on scheme management, telemetry and non-telemetry charges for different telemetry opt-in proportions (\$2021-22)

Telemetry opt-in	Up to 24%	25-49%	50-74%	75% or more
Scheme management charge	73	66	59	51
Telemetry charge	226	209	191	182
Non-telemetry charge	226	219	219	219

Source: IPART using information provided by Water NSW and Cardno

Note: Telemetry gets progressively less expensive at even higher levels of telemetry opt-in, as fixed costs – such as IT systems – are spread over a greater number of water users. Non-telemetry costs do not vary as telemetry uptake increases.

Our decisions ensure that customers' metering charges reflect only those activities that are necessary, and customers pay only for the efficient costs of implementing the non-urban metering reforms. However, we acknowledge that these new charges will increase customer's bills, particularly for customers with government owned meters and relatively smaller entitlement and usage volumes.

The NSW Government has recognised these impacts and is providing funding of \$14.6 million to Water NSW to cover the capital costs of upgrading government owned meters. The aim of the funding is to ensure that the costs of bringing these meters into compliance with the non-urban metering rules is not borne by users. We therefore decided to set a 'meter service charge – capital costs' of \$0 a year for the 2021 determination period.

In addition, the one-off telemetry rebate will apply to customers that upgrade their meters to use telemetry. This scheme will also mitigate the impact of the non-urban metering reforms on water users and accelerate the uptake of telemetry in NSW, increasing transparency of water take, supporting on-farm management, and positioning NSW to better deliver efficiencies in water management.

1.8 We consulted extensively with stakeholders

This review commenced on 30 June 2020 when WAMC submitted its pricing proposals to IPART. We conducted extensive consultation with WAMC and other stakeholders, including releasing an Issues Paper, a Draft Report and a Supplementary Report on metering, to which we invited written submissions and online feedback. In November 2020 and March 2021, we also held public hearings online. We took all stakeholder views into account in making our final decisions (Figure 1.2). WAMC's pricing proposals, our Issues Paper, Draft Report, Supplementary Report, stakeholder submissions and the public hearing transcript are available on our [website](#).

Figure 1.2 Timetable for this review



1.9 Cost and price structures can be improved in future reviews

WAMC's cost allocation methodology and price structures are complex. Prices are determined by an indirect cost allocation process (using cost drivers), rather than direct attribution of costs.

There are advantages and disadvantages of undertaking this cost allocation methodology. This allocation process could allow prices to be more cost reflective for each water source. However,

it may not be materially more cost reflective given the inherent uncertainty associated with the cost allocation methodology. It could also be unnecessarily complex and costly to administer.

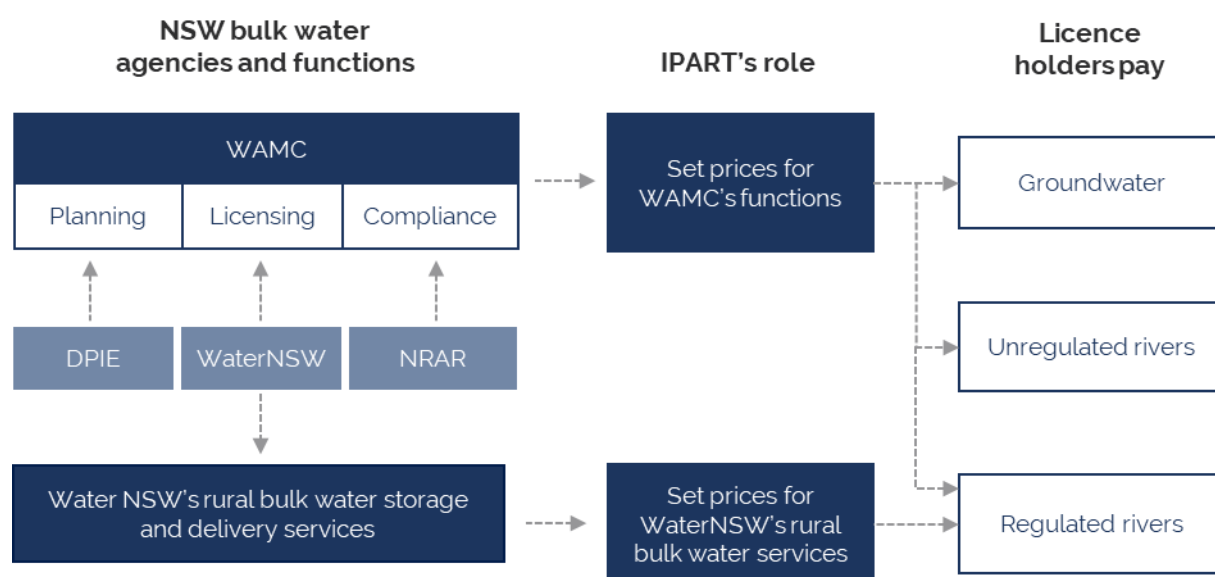
We encourage WAMC to consider this issue further over the 2021 determination period and in the lead up to the next determination. Issues to consider include whether WAMC can move towards greater direct cost attribution, whether the cost drivers used to allocate costs between water sources can be improved, and whether there would be merit in moving towards more aggregated and less complex pricing arrangements in the future. We encourage WAMC to investigate these issues and consult with stakeholders on potential options and impacts of these options on prices.

1.10 We completed our review of Water NSW's rural bulk water prices

Concurrent with this review of WAMC's prices, we completed our review of maximum prices for Water NSW's services in rural valleys. Water users in regulated water sources also pay Water NSW's rural bulk water prices. Our Final Report on Water NSW's rural bulk water prices is available on our [website](#).

Figure 1.3 illustrates how the NSW water agencies (i.e. DPIE, Water NSW and NRAR) contribute towards WAMC functions and Water NSW's services, how IPART sets prices for WAMC functions and Water NSW's services, and how WAMC prices apply to all water users (i.e. groundwater, unregulated rivers and regulated rivers), while Water NSW's rural prices apply only to water users on regulated rivers.

Figure 1.3 Overview of WAMC and Water NSW relationships and our role in setting prices



1.11 Structure of this report

The rest of this report provides more information on this review, our approach and our decisions:

Chapter

02	discusses our decisions on the regulatory settings for the 2021 determination period, including the length of this period and our approach for price setting
03	explain our decisions on WAMC's operating expenditure allowances
04	explain our decisions on WAMC's capital expenditure which informs capital allowances
05	focuses on our decisions on MDBA and BRC costs
06	sets out our decisions on the other cost allowances and WAMC's total NRR
07	discusses our decisions on the cost share ratios and cost drivers for allocating costs across water sources
08	explains our decisions on the water entitlement and take forecasts we used to set prices
09	discusses our decisions on price structures for water management services
10	sets out the WAMC's water management charges and MDBA and BRC charges that result from our decisions on efficient costs, water entitlement and take forecasts and price structures
11	discusses how these decisions impact stakeholders, including water users, WAMC and the NSW Government
12	sets out our decisions on costs and charges for water consent transactions
13	sets out our decisions on existing metering charges.
14	sets out our decisions on non-urban metering reform charges

1.12 List of decisions

1.	To adopt a 4-year determination period.	28
2.	To delay the commencement of new prices until 1 October 2021.	28
3.	To set maximum prices for WAMC services in each year of the determination period (a price cap).	29
4.	To factor the costs of most of WAMC's proposed activities into prices for its monopoly services for the 2021 determination period. The exceptions are for: – W06-07 cross-border and national commitments (we excluded 25% of the intergovernmental activity costs) – coal seam gas bore monitoring (we excluded all of these costs) since they do not relate to the WAMC monopoly services which we regulate.	32
5.	To set WAMC's total operating expenditure allowance for the 2021 determination period at \$214.3 million, as shown in Table 3.1.	39
6.	For WAMC to report annually against the output measures and in accordance with the framework in the Output Measures Report, which will be published on IPART's website.	51
7.	To set the efficient level of WAMC's past capital expenditure to be included in the regulatory asset base for the 2016 determination period as shown in Table 4.1.	55
8.	To set the efficient level of WAMC's capital expenditure to be included in the regulatory asset base for the 2021 determination period as shown in Table 4.2.	56
9.	The efficient level of WAMC's Murray–Darling Basin Authority costs for the 2021 determination period is \$34.6 million as shown in Table 5.1.	63
10.	The efficient level of WAMC's Dumaresq–Barwon Border Rivers Commission costs for the 2021 determination period is \$3.5 million as shown in Table 5.2.	63
11.	To use the building block approach to set efficient Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission costs.	71
12.	To set WAMC's operating and capital expenditure for Murray–Darling Basin Authority costs as shown in Table 5.5.	73
13.	To set WAMC's operating and capital expenditure for Dumaresq–Barwon Border Rivers Commission costs as shown in Table 5.6.	73
14.	To set WAMC's opening regulatory asset base for Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission costs at 1 July 2021 to zero.	74
15.	To set a total notional revenue requirement of \$290.4 million as shown in Table 6.1.	78
16.	To calculate the return on assets for WAMC's water management services: – using an opening regulatory asset base of \$43.4 million for 2021–22, and the RAB for each year as shown in Table 6.3 – using our standard weighted average cost of capital (WACC) methodology, which produces a real post-tax WACC of 3.0% as outlined in Appendix C – applying a true-up of annual WACC adjustments in the next determination – using a sampling date of 31 March 2021 for market observations as outlined in Appendix C.	79

17.	To calculate the regulatory depreciation for WAMC's water management services using:	82
	– the asset lives set out in Table 6.5 for depreciating WAMC's regulatory asset base – the straight-line depreciation method.	
18.	To calculate the working capital allowance for WAMC's water management services using WAMC's proposed parameters:	83
	– quarterly billing cycle for regulated water sources – annual billing cycle for unregulated water sources and groundwater – 30 days of delay between reading the meter and receiving payment – 30 days of payable – zero inventory. In addition, to have zero prepayments in each year of the determination period.	
19.	To calculate the tax allowance for WAMC's water management services using:	84
	– a tax rate of 30% – IPART's standard methodology.	
20.	To generally set cost shares consistent with our 2019 cost shares review and WAMC's proposal as shown in Table 7.2.	87
	– The exceptions are for W06-05 regional planning and management strategies (user share will decrease from 70% to 60%) and W04-01 surface water modelling (user share will decrease from 80% to 70%). – This means the user share of WAMC's efficient costs is \$226.2 million, or 77.9% of the notional revenue requirement, over the 2021 determination period as shown in Table 7.1.	
21.	To largely accept WAMC's proposed cost drivers in Table 7.3 to allocate the user share of its costs across water sources as shown in Table 7.5.	96
	– The exceptions are for W06-05 regional planning and management strategies and W10-02 business governance and support. We decided to use volume of entitlements as a cost driver for these WAMC activities. – This decision results in the user share of WAMC's efficient costs being allocated across water sources as listed in Table 7.4.	
22.	To set WAMC's water entitlements, water take and floodplain harvesting forecasts for regulated rivers as shown in Table 8.1, Table 8.2 and Table 8.3 respectively.	107
23.	To accept WAMC's proposed approach for forecasting water entitlements, water take and floodplain harvesting volumes for unregulated rivers as shown in Table 8.4, Table 8.5 and Table 8.6 respectively.	110
24.	To accept WAMC's proposed approach for forecasting water entitlements and water take volumes for groundwater as shown in Table 8.7 and Table 8.8 respectively.	113
25.	To set separate charges for WAMC's water management, Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission activities.	118
26.	For the WAMC water management component, to transition prices towards full cost recovery at a capped annual real rate of 2.5% until full cost recovery is achieved.	119
27.	For the Murray–Darling Basin Authority component, to set prices at full cost recovery from 2021–22.	119
28.	For the Dumaresq–Barwon Border Rivers Commission component, to set prices at full cost recovery from 2021–22.	119

29.	For the minimum annual charge, to transition prices towards full cost recovery at a capped annual real rate of 2.5% until full cost recovery is achieved.	119
30.	To maintain our approach of setting charges for each water source – that is, the 11 regulated rivers, 12 unregulated rivers and 4 groundwater sources.	121
31.	To maintain setting: – 2-part tariffs, comprised of a fixed charge (\$ per ML of entitlement or unit share) and a water take charge (\$ per ML of water extracted), for regulated water, unregulated water and groundwater sources, where water take is measured, and – 1-part tariffs, comprised of a fixed charge (\$ per ML of entitlement or unit share), for unregulated water and groundwater sources, where water take is not measured.	123
32.	To maintain the approach of setting 1-part tariffs as the sum of the fixed charge and water take charge set for 2-part tariffs in each water source.	123
33.	For WAMC's water management price component, to set the tariff structure for the 2-part tariffs so that 70% of forecast revenue from the 2-part tariffs is recovered via the fixed charge and 30% of forecast revenue from the 2-part tariffs is recovered via the water take charge, except for the North Coast regulated water source where this ratio is kept at current levels of 92% fixed and 8% water take.	123
34.	For MDBA and BRC price components, to set the tariff structure for the 2-part tariffs so that 80% of forecast revenue from the 2-part tariffs is recovered via the fixed charge and 20% of forecast revenue from the 2-part tariffs is recovered via the water take charge.	123
35.	To maintain setting separate prices to apply during the 2021 determination period following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for that water source.	125
36.	To accept WAMC's proposed special categories of licences as shown in Table 9.1.	126
37.	To exempt Aboriginal cultural licences from all WAMC charges for the 2021 Determination while the NSW Government considers its policy position on charges associated with these licences.	128
38.	To continue setting charges for Aboriginal Community Development and Aboriginal Commercial licences, as we have in previous determinations.	128
39.	To apply a separate WAMC price to Water NSW, which will recover the user share of metropolitan water planning costs. The price will be an additional fixed charge (\$ per ML of entitlement or unit share) applied to the water access licences held by Water NSW in the South Coast (unregulated rivers) water source.	129
40.	To set the maximum prices shown in Table 10.1, Table 10.2, Table 10.3 and Table 10.4 for water users in regulated water sources.	133
41.	To set the maximum prices shown in Table 10.5, Table 10.6, Table 10.7, Table 10.8 and Table 10.9 for water users in unregulated water sources.	136
42.	To set the maximum prices shown in Table 10.10, Table 10.11, Table 10.12, Table 10.13 and Table 10.14 for water users in groundwater sources.	141
43.	To set the maximum prices shown in Table 10.15, Table 10.16, Table 10.17, Table 10.18, Table 10.19, Table 10.20, Table 10.21, Table 10.22 and Table 10.23 in water sources where the floodplain harvesting framework may roll out.	144

44.	To set the minimum annual charges shown in Table 10.24.	149
45.	To set the separate price for Water NSW (South Coast unregulated river) shown in Table 10.25.	150
46.	To maintain our approach of setting cost-reflective consent transaction charges as proposed by WAMC.	174
47.	To set WAMC's consent transactions charges as listed in Table 12.1. These charges are based on a consistent schedule for two different customer types.	174
48.	To adopt WAMC's proposed Water Supply (Critical Needs) Assessment charges subject to a 10% efficiency adjustment as shown in Table 12.2.	178
49.	To accept WAMC's proposal and set WAMC's annual meter service charges for the 2021 determination period as shown in Table 13.1. We have set these charges based on meter size and telemetry of the meters.	181
50.	To set WAMC's annual water take assessment charges for the 2021 determination period as shown in Table 13.2 .	182
51.	To set WAMC's annual ancillary charges for the 2021 determination period as shown in Table 13.3 .	182
52.	That the efficient cost of implementing the NSW Government's non-urban metering reforms under Water NSW's proposed base case is \$47.8 million over the 2021 determination period (see Table 14.1).	186
53.	That the efficient cost of implementing the NSW Government's non-urban metering reforms varies from \$39.4 million to \$47.8 million based on the proportion of customers that voluntarily opt in to telemetry (see Table 14.2).	187
54.	To adopt a 100% customer share of efficient costs incurred by Water NSW implementing the NSW Government's non-urban metering reforms.	194
55.	To recover the wider costs of introducing the reform, such as recording and reporting, customer self-reporting, general enquiries and education, through a 'scheme management charge' to be applied annually to all licence holders.	195
56.	To recover the costs of compliance activities, water take assessments, meter reading and meter data services through: – a telemetry charge to be applied annually to customers who use telemetry – a non-telemetry charge to be applied annually to customers who do not use telemetry.	195
57.	To recover the costs of bringing government owned meters up to the required standard under the non-urban metering reforms through a 'meter service charge – capital costs' and maintaining these meters to ensure regulatory compliance through a 'meter service charge – operating costs'. These charges are applied annually to customers with a compliant government owned meter.	195
58.	To set charges for Water NSW's non-urban metering reforms as set out in Table 14.6 and Table 14.7.	200
59.	To apply the following transitional arrangements in moving from existing to new metering charges: – Scheme management charge to apply annually from the start of the determination period, 1 October 2021.	202

- Telemetry or non-telemetry charge for customers with privately owned meters to be prorated using the number of days remaining in the financial year from the relevant compliance date set out in the <i>Water Management (General) Regulation 2018</i>. - Telemetry or non-telemetry charge and government owned 'meter service charge – operating costs' for customers with government owned meters to be prorated using the number of days remaining in the financial year from the later of the relevant compliance date set out in the <i>Water Management (General) Regulation 2018</i> or the date the meter is made compliant.	
60.	Not to provide an unders and overs mechanism to Water NSW for the rollout of the non-urban metering reforms. 204
61.	That the Tribunal intends to consider the impact of any further deferral of the floodplain harvesting policy and potentially make an adjustment to future charges if needed at the next determination. 204
62.	To set an exit charge for the 2021 determination period of \$0. 204

Chapter 2 »

Context and regulatory settings

02

Summary of our decisions for regulatory settings

We set prices for a 4-year determination period

We accepted WAMC's proposed determination period.

The timing of the next WAMC and Water NSW rural bulk water reviews remain aligned.

We continued to set maximum prices

We consider setting maximum prices (i.e. price caps), as proposed by WAMC, remains appropriate.

We use the building block approach to calculate WAMC's notional revenue requirement. This approach involves breaking down WAMC's costs into operating, capital allowance, tax and working capital allowances, and making separate calculations for these allowances. The sum of the building blocks represents the total efficient costs WAMC should incur in delivering its services.

We used a 3-step process to assess expenditure

This process is consistent with our approach for other recent water reviews. It involves making scope, catch-up and continuing efficiency adjustments, taking into account any efficiencies proposed by WAMC.

We included costs for most of WAMC's proposed activities in prices for monopoly services

In particular, we included the costs of recycled water and desalination planning (which are part of WAMC's metropolitan water planning activities)^a and the Nimmie–Caira project in prices for WAMC monopoly services. These costs were either not accepted or not proposed in the 2016 Determination.

However, we excluded 25% of WAMC's intergovernmental agency costs from the prices for its monopoly services. These costs should not be recovered from water users.

We also excluded the costs of coal seam gas bore monitoring, because they do not relate to water use.

Before setting prices, IPART needs to decide how long to set prices for and the 'form of regulation' to use to regulate prices.

^a The costs included for metropolitan water planning are recovered from Water NSW's Greater Sydney customers through a specific charge levied on its Greater Sydney business.

2.1 We set prices for a 4-year determination period

Our decisions are:



1. To adopt a 4-year determination period.



2. To delay the commencement of new prices until 1 October 2021.

For each water pricing review, we decide how long to set prices for (the length of the determination period) – generally between one and 5 years – and consider a range of factors (Box 2.1).

Box 2.1 Factors we consider in deciding the length of the determination

In general, we consider the following factors when deciding the length of a determination period:

- our confidence in the utility's forecasts
- the risk of structural changes in the industry
- the need for price flexibility and incentives to increase efficiency
- the need for regulatory certainty and financial stability
- timing of other relevant reviews
- views of stakeholders.

WAMC proposed a 4-year determination period to provide price stability for water users.⁶ It also considered, on balance:⁷

... the benefits of a four-year determination period in providing certainty and minimising both regulatory burden and administrative costs outweigh the costs and benefits of moving to a period shorter or longer than four years.

In our Issues Paper we sought stakeholder feedback on the length of the determination period. We also sought views on the merits of aligning the price determination periods for WAMC and our concurrent review of Water NSW's rural bulk water services.

Most stakeholders supported setting a 4-year determination period for WAMC. There was no support for shortening the determination period, while one stakeholder supported a 5-year determination period. Stakeholders also generally supported aligning the 2 rural water price determination periods.

We agree a 4-year determination period is appropriate. It provides a stable and predictable regulatory environment for WAMC and water users, while limiting regulatory costs. It would also align with the determination period for Water NSW.

We are delaying the commencement of new prices under the 2021 Determination by 3 months, until 1 October 2021. Current prices will apply from 1 July 2021 until 30 September 2021.

2.2 We continued to use price caps

Our decision is:



3. To set maximum prices for WAMC services in each year of the determination period (a price cap).

Our decision is to continue to set maximum price caps for WAMC. We consider price caps provide transparency and pricing certainty to customers. Price caps also help ensure prices reflect efficient costs, and signal the long-run cost of providing the service.

WAMC supported our approach for the 2021 determination period.⁸ No stakeholders suggested alternative forms of regulation.

2.3 We used the building block approach

We continued to use the building block approach to calculate WAMC's notional revenue requirement. We break down WAMC's costs into the following components (or building blocks):

- **operating allowance**, to cover costs such as administration costs
- **capital allowance**, comprised of:
 - return on assets that WAMC uses to provide its services
 - regulatory depreciation (or a return of the assets that WAMC uses to provide its services), which involves deciding on the appropriate asset lives and depreciation method
- **tax allowance**, which approximates the tax liability for a comparable commercial business
- **working capital allowance**, which represents the holding cost of net current assets.

The annual sum of these building blocks is the notional revenue requirement and is our assessment of the total efficient costs WAMC should incur in delivering its services.

We then convert WAMC's notional revenue requirement into prices by setting the target revenue requirement for each year – that is, the actual revenue we expect WAMC to generate from prices and charges for that year. We consider a range of factors including price levels, the rate prices would change and any other impacts on WAMC and water users.

Figure 2.1 shows our approach to calculating the notional revenue requirement and how we set prices.

Figure 2.1 The building block model



2.4 We assessed the expenditure using a 3-step process

We use a 3-step process to establish WAMC's efficient expenditure, outlined in Figure 2.2 and Chapters 3 and 4. This approach is consistent with the approach adopted by our consultant Cardno and our other recent water pricing reviews.

Step 1 – Reviewing changes in activities and costs:

- If the utility's proposed changes in activities (and associated costs) are not efficient, a **scope adjustment** is made.
- This step identifies any inefficiencies where the utility has proposed changes to its specific activities. It does not apply to the utility's base expenditure (to avoid double counting with step 2).
- These adjustments are clearly distinct from the types of efficiencies identified in step 2, because they correct for an inefficient proposed change to a utility's activities (and associated costs) rather than the business processes employed by the utility to deliver the utility's services.

Step 2 – Reviewing business processes relative to the frontier:

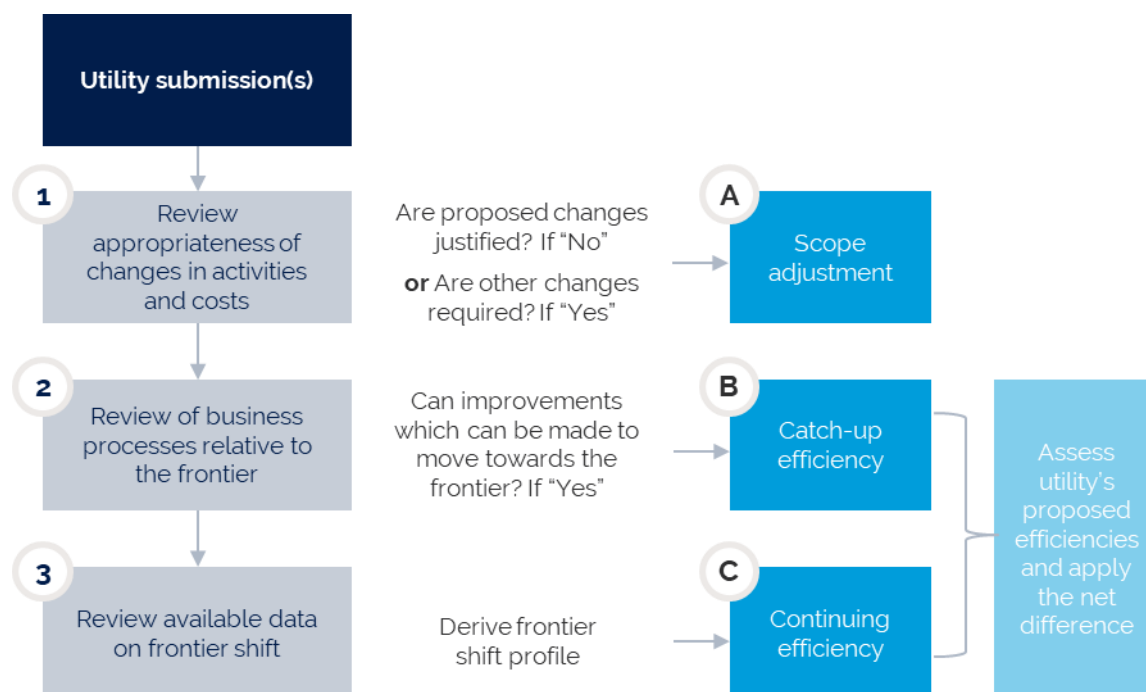
- Where we identify improvements to the utility's business processes, we apply a **catch-up efficiency adjustment**. It takes into account the efficiencies we consider the utility will be able to achieve in the 2021 determination period. This encourages the utility to move to the efficiency frontier.
- This step identifies the effectiveness of the utility's business processes (e.g. decision making and procurement processes) relative to a 'frontier' company.

Step 3 – Reviewing available data on frontier shift:

- We apply a **continuing efficiency adjustment** to take account of the ongoing improvements that even efficient utilities should be able to make over time, as more productive ways of working emerge. We refer to long-term multi-factor productivity trends to set this adjustment.
- This step recognises that in competitive markets (which we are trying to replicate through our regulatory framework) firms must innovate to achieve continuing efficiency gains over time.

We compare the total efficiency challenge derived from steps 2 and 3 with the efficiencies applied by the utility in its own submission. We then apply the net difference as an adjustment to the utility's submission.

Figure 2.2 Our approach to assessing efficiency



Once we establish WAMC's efficient expenditure, we then allocate it between water users and the NSW Government. Further, we allocate the user share of these costs across water sources. This process is discussed in more detail in Chapter 7. Appendix B outlines how we use these allocations to set prices.

2.5 Costs of most proposed activities should be factored into prices

Our decision is:

4. To factor the costs of most of WAMC's proposed activities into prices for its monopoly services for the 2021 determination period. The exceptions are for:
- W06-07 cross-border and national commitments (we excluded 25% of the intergovernmental activity costs)
 - coal seam gas bore monitoring (we excluded all of these costs) since they do not relate to the WAMC monopoly services which we regulate.

At a preliminary stage of our review, we determine which WAMC activities are sufficiently relevant to its monopoly services (the services we set prices for in Chapter 10) for their costs to be factored into prices. We then examine the efficiency of these costs, as outlined in Chapters 3, 4 and 5.

Under the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004*, WAMC's declared monopoly services involve the making available of water, the making available of the water supply facilities, and the supply of water. In the past, we referred to the *Water Management Act 2000*, as well as the pricing principles under the National Water Initiative (NWI), to assist with this decision. These principles – agreed to by the Commonwealth, state and territory governments – provide guidance on the types of water planning and management costs that should be recovered through prices.

We asked our consultant, Cardno, to review WAMC's proposed activities. Cardno found the scope of these activities was largely unchanged compared with previous WAMC reviews. However, it proposed several changes to the activities and costs which constitute WAMC's monopoly services. We accepted these recommendations.

2.5.1 We factored metropolitan water planning costs into prices

The costs included for metropolitan water planning are recovered from Water NSW's Greater Sydney customers through a specific charge levied on its Greater Sydney business. We discuss this charge in further detail in Chapter 9.

In the 2016 Determination, we excluded 25% of metropolitan water planning costs – those relating to recycled water and desalination planning – on the basis that the costs were outside the scope of the *Water Management Act 2000* framework. Further, there were separate pricing principles for water planning and recycled water under the NWI.

However, DPIE/NRAR submitted we should adopt a different approach for this price review. They considered strategic, integrated water planning should take into account all viable options. Removing options from the planning framework can result in piecemeal investment decisions.⁹

We agree with this reasoning, and note it is consistent with views we expressed in recent price reviews. In particular, we emphasised the importance of planning being:

... comprehensive and rigorous in terms of the options assessed for long-term water supply and drought response, as well as co-ordinated across the relevant agencies.¹⁰

Cardno supported this position. It noted:

- Supply measures should not be considered separately. Rather, good practice water resource planning should consider all water supply measures in an integrated way.
- This approach is consistent with the NWI pricing principles' fundamental objective to promote economically efficient use of water. Further, it was reinforced through the planning undertaken in response to the recent drought.¹¹

We have some discretion when determining what costs are included in prices for WAMC's monopoly services. While in the past we used the *Water Management Act 2000* framework and NWI pricing principles as a guide, ideas about integrated water planning have changed.^b

^b For example, the Productivity Commission's review of the NWI noted that best-practice system planning involves planning that integrates water supply, wastewater and stormwater planning and management (Productivity Commission, *National Water Reform*, Draft Report, February 2021, p 141).

Therefore, we decided to no longer exclude recycled water and desalination planning costs from prices for WAMC's monopoly services. WAMC has proposed metropolitan water planning costs of around \$2.6 million per year. We discuss the efficiency of these costs in Chapter 3.

2.5.2 We factored Nimmie–Caira costs into prices

DPIE/NRAR included operation and maintenance costs for a new Sustainable Diversion Limit Adjustment Mechanism (SDLAM) project in their pricing proposal. The project delivers environmental flows to the Nimmie–Caira floodplain in the Murrumbidgee River valley.

Cardno recommended accepting this proposal and including Nimmie–Caira's costs in WAMC's monopoly services. It considered the project addresses the environmental impacts of water extraction, and noted the costs of other SDLAMs are already factored into prices for WAMC's monopoly services.¹²

We accepted the proposal from DPIE/NRAR. Water users are already supporting the costs of existing SDLAM projects through their WAMC prices. Further, the Nimmie–Caira SDLAM involves works that remediate the environmental impacts of extractive water use. As such, we decided to factor its operation and maintenance costs (around \$0.13 million per year) into prices for WAMC's monopoly services.

In its submission to the Draft Report, Coleambally Irrigation Co-operative Limited disagreed with including Nimmie–Caira costs into prices for WAMC's monopoly services.¹³ We maintained our decision from the Draft Report, because the project addresses the environmental impacts of water extraction. Further, the costs of other SDLAMs are already factored into prices for WAMC's monopoly services.

2.5.3 We excluded 25% of intergovernmental activity costs from prices

WAMC undertakes intergovernmental activities through participating in a range of committees. In the 2016 Determination, we accepted these activities as WAMC monopoly services.

In this review, Cardno has been able to investigate these costs in more detail. It identified some of the activities, relating to W06-07 cross-border and national commitments, were more akin to policy development rather than implementation^c (representing around 25% of expenditure for this activity), and so should be excluded from prices for WAMC's monopoly services.

We decided to exclude these costs (around \$0.3 million per year). The NWI pricing principles outline that policy development costs should not be recovered from water users, but policy implementation costs are recoverable. Our decision is consistent with Cardno's recommendation.

^c According to the NWI pricing principles, 'policy development' involves making comprehensive strategies that articulate the long-term policy objective for sustainable water management and overarching policy and institutional framework (for example, *Water Management Act 2000*): National Resource Management Ministerial Council, National Water Initiative Pricing Principles, 2010, pp 13–14.

In its submission to the Draft Report, Coleambally Irrigation Co-operative Limited generally supported our decision to exclude some intergovernmental activity costs from prices for WAMC monopoly services, on the basis they related to policy development. However, it considered 50% of intergovernmental activity costs should be excluded (not 25%).¹⁴ In contrast, DPIE/NRAR disagreed with our decision to exclude some intergovernmental activity costs from prices. They noted, while the intergovernmental activities contained a policy development component, they supported the delivery of WAMC activities.¹⁵

Cardno reviewed additional information provided by DPIE about its intergovernmental activities. It still found that around one-quarter of these activities were more akin to policy development, rather than policy implementation.¹⁶ We therefore have maintained our decision from the Draft Report and excluded 25% of intergovernmental activity costs.

Coleambally Irrigation Co-operative Limited also considered water management planning should be classified as a policy development activity, and therefore the costs be excluded from prices for WAMC's monopoly services.¹⁷ We consider these are 'policy implementation' activities. The NWI pricing principles set out that these types of costs should not be automatically allocated to government.¹⁸ Therefore, we have not excluded the costs for this activity. Rather we have determined both the efficient level of costs for WAMC's water management planning activities, and the share to be allocated to water users (see Chapters 3 and 7).

2.5.4 We excluded costs of coal seam gas bore monitoring from prices

Water NSW did not include coal seam gas (CSG) bore monitoring costs in its pricing proposal, due to uncertainty around the timing of bores being transferred to it. Therefore, we did not consider this issue for the Draft Report.

In its submission to our Draft Report, Water NSW stated it now knew the scope and costs of CSG bore monitoring, and considered additional operating expenditure should be included for monitoring CSG bores. That is, we should consider appropriate funding arrangements to support Water NSW owning, operating and maintaining the bores.¹⁹

In its Supplementary Report, Cardno noted this activity was not historically provided by WAMC. Further, it considered whether the costs for this activity related to WAMC's monopoly services. It recommended excluding them, since the bores are for monitoring the impact of CSG extraction and therefore do not relate to 'water use' as defined under the NWI pricing principles. We agree with Cardno's analysis and have not factored these costs into prices for WAMC's monopoly services.

After Cardno finalised its Supplementary Report, DPIE provided us with additional information about the CSG bores. It stated the information provided to Cardno was incomplete and outlined further reasons why it considered these monitoring costs should be included in WAMC prices.

We have continued to exclude CSG bore monitoring costs from WAMC prices for several reasons:

- Water NSW and DPIE had multiple opportunities throughout the 6 months of Cardno's expenditure review to provide adequate information about these costs.
- Providing additional information after the expenditure review has concluded does not allow us to properly scrutinise the costs or other stakeholders an opportunity to comment on them.

- In any case, it is not clear based on the additional information that CSG bore monitoring costs should now be included in WAMC prices.

If Water NSW or DPIE propose to include CSG bore monitoring costs in WAMC prices at the next determination, they need to undertake further work to demonstrate these costs relate to 'water use' as defined under the NWI pricing principles. They also need to provide evidence about who is creating the need for this monitoring activity (and therefore who should incur the costs).

Chapter 3 »

Operating expenditure

03

Summary of our decisions for operating expenditure

WAMC's efficient operating expenditure is higher than when we last set prices

We set WAMC's efficient level of operating expenditure for the 2021 determination period at \$214.3 million. This is \$13.6 million (6.8%) higher than the costs used to set prices in 2016.

We found the step change in operating expenditure is required for WAMC to lift its performance and provide a more sustainable, reliable water resource management system going forward.

We recognise WAMC has conducted extensive stakeholder engagement to support the increased levels of service. However, we would like to see further consultation to understand users' willingness to pay and ensure future proposed expenditure represents an informed trade-off between service, cost and risk.

WAMC could make \$63.3 million in efficiency savings

We found around \$63.3 million (22.8%) of the proposed operating expenditure is not efficient. We excluded these costs from the 2021 allowance. Our recommended reductions for the forecast operating expenditure are comprised of:

- \$58.9 million in scope adjustments
- \$3.7 million in catch-up efficiency adjustments, and
- \$3.7 million in continuing efficiency adjustments.

Our adjustments recognise the efficiency challenges proposed by the WAMC agencies. We also provided guidance to WAMC on how it can achieve our recommended efficiency savings over the forecast regulatory period.

We recommended the government pays for the intensive phase of compliance management

We recognise that in the short term there is a need for NRAR to perform more intensive compliance and enforcement activities to address historical water theft and compliance issues. However, these costs should not be paid for by users through its water management prices.

We have recommended that WAMC seek government funding to recover the balance of the reduced compliance costs of \$38.9 million. This means WAMC will have \$253.2 million of operating expenditure to provide its water management services.

This chapter sets out our assessment of Water NSW's efficient level of operating expenditure. To inform our decision on operating expenditure, we engaged Cardno to review WAMC's expenditure and recommended the efficient amount of operating expenditure allowance for the 2021 determination period. As part of its review, Cardno also reviewed WAMC's performance against output measures over the current determination period, and made recommendations about WAMC's proposed output measures.

We engaged Atkins to undertake a separate review of Water NSW's corporate costs. We have taken into account recommendations from both consultants, as well as stakeholder submissions, in making our final decisions on efficient operating expenditure.

This chapter does not include proposed expenditure for Murray–Darling Basin Authority (MDBA) and Dumaresq–Barwon Border Rivers Commission (BRC) (Chapter 5), consent transactions (Chapter 12), existing metering charges (Chapter 13) and proposed non-urban metering reform charges (Chapter 14).

3.1 WAMC's efficient level of operating expenditure is \$214.3 million

Our decision is:



5. To set WAMC's total operating expenditure allowance for the 2021 determination period at \$214.3 million, as shown in Table 3.1.

Table 3.1 Decision on efficient operating expenditure for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposed	70.0	70.6	68.9	68.2	277.6
IPART decision	54.9	54.8	52.6	52.0	214.3
Difference	–15.0	–15.7	–16.4	–16.1	–63.3
Difference (%)	–21.5	–22.3	–23.8	–23.7	–22.8

Note: Proposed expenditure for consent transactions, metering and MDBA and BRC is not included.

Source: WAMC (DPIE/NRAR), Pricing proposal to IPART, July 2020; WAMC (Water NSW), Pricing proposal to IPART, July 2020; and IPART analysis.

WAMC proposed operating expenditure of \$277.6 million for the 2021 determination period.²⁰ Our decision is to set WAMC's efficient level of operating expenditure for the 2021 determination period at \$214.3 million. This amount is around \$13.6 million (6.8%) higher than the costs we used to set prices in 2016 (Table 3.1).

We found that WAMC requires some additional expenditure in these key areas for WAMC to lift its performance and provide a more sustainable, reliable water resource management system going forward. In particular, it is critical for WAMC to undertake comprehensive long-term planning and implement a robust compliance and enforcement framework.

WAMC noted it has conducted extensive stakeholder consultation, and increased expectations for a range of water management activities is one of the main drivers of its increased operating expenditure.²¹ Although WAMC engaged with water users on what levels of service they would like it to deliver, we consider further consultation is required to understand users' willingness to pay for these higher service levels.

We agree with Cardno that the efficient level of expenditure should represent an informed trade-off between service, cost and risk.²² We would like to see the outcomes of appropriate stakeholder engagement on both cost and service incorporated into future price submissions to IPART.

While we have increased the efficient operating expenditure compared to the 2016 allowance, this is not to the extent requested by WAMC. Our recommended \$63.3 million reduction in the operating expenditure proposed by WAMC comprises:

- \$58.9 million in scope adjustments
- \$3.7 million in catch-up efficiency adjustments, based on a catch-up efficiency factor of 1.1% per year
- \$3.7 million in continuing efficiency adjustments, based on a continuing efficiency factor of 0.7% per year.

We also reallocated \$3.0 million of corporate overheads into the WAMC business.

Our draft decision was to reduce the operating expenditure allowance by \$68.9 million (or 24.8%). The increase in operating expenditure between our Draft Report and Final Report reflects additional information provided by WAMC to support its proposed:

- regional water planning
- water modelling
- customer management activities.

We have also made an adjustment to the allocation of corporate overheads.

Our recommended adjustments to WAMC's proposed operating expenditure for the 2021 Determination are summarised in Table 3.2. Figure 3.1 shows our decisions in comparison to WAMC's historical expenditure and proposed expenditure.

Table 3.2 Decision on efficient operating expenditure for the 2021 determination period (\$ millions, \$2020–21)

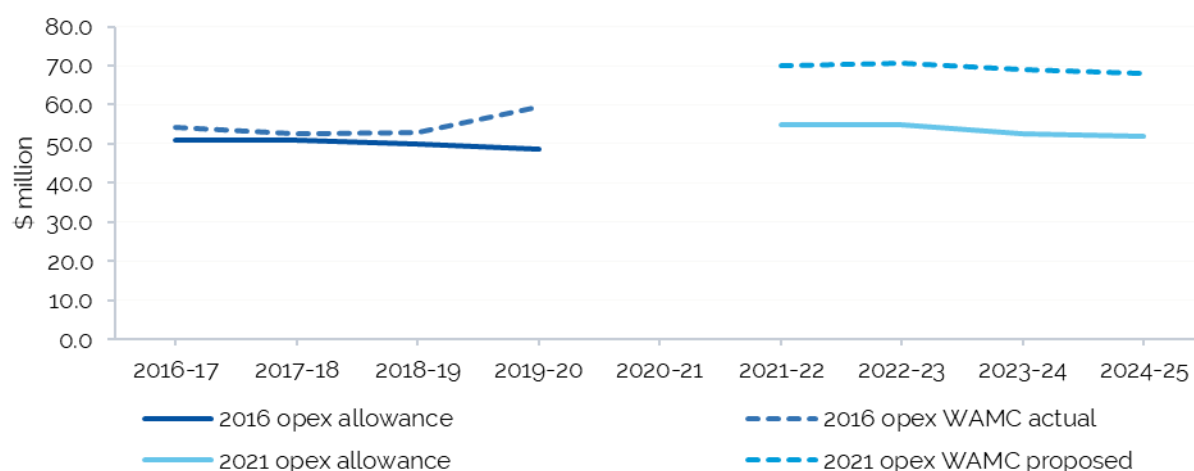
	2021–22	2022–23	2023–24	2024–25	Total
WAMC's proposal	70.0	70.6	68.9	68.2	277.6
Specific adjustments					
Compliance management	-9.9	-9.9	-9.6	-9.6	-38.9
Regional planning and management strategies	-0.5	-0.5	0.0	0.0	-1.1
Customer management	-1.2	-1.2	-1.1	-1.1	-4.6
Development of water planning and regulatory framework	-0.7	-0.7	-0.7	-0.7	-2.8
Water plan and performance assessment	-1.0	-1.0	-1.0	-1.0	-4.1
Drainage management plan	-0.5	-0.5	-0.5	-0.5	-2.2
Cross-border and national commitments	-0.4	-0.4	-0.4	-0.4	-1.6
Business governance and support	-0.6	-0.6	-1.5	-1.1	-3.8
Efficiency adjustments					
Catch-up efficiency	-0.4	-0.8	-1.1	-1.4	-3.7
Continuing efficiency	-0.4	-0.7	-1.1	-1.4	-3.7
Other adjustments					
Reallocation of Water NSW overheads to WAMC ^a	0.5	0.7	0.6	1.2	3.0
Total efficient operating expenditure					
Total	54.4	54.8	52.6	52.0	214.3
Difference	-15.2	-15.7	-16.4	-16.1	-63.3
Difference (%)	-21.5	-22.3	-23.8	-23.7	-22.8

a. This adjustment is based on Atkins' separate review of Water NSW's corporate operating expenditure.

Note: Proposed expenditure for consent transactions, metering and MDBA and BRC is not included.

Source: Cardno, *WAMC expenditure review – Final Report for IPART*, March 2021, pp 59–61; Cardno, *WAMC expenditure review – Supplementary Report for IPART*, September 2021, pp 13–17; and IPART analysis.

Figure 3.1 Our decision and WAMC's past and proposed operating expenditure



Source: IPART analysis.

The sections below outline our findings in relation to WAMC's current and proposed operating expenditure.

3.2 Actual operating expenditure was higher in the 2016 period

Over the 2016 determination period, WAMC's total actual operating expenditure was \$219.0 million – \$18.2 million (or 8.3%) higher than the allowance we used to set prices (Table 3.3).

Table 3.3 WAMC's operating expenditure over the 2016 determination period (\$ millions, \$2020–21)

	2016–17	2017–18	2018–19	2019–20	Total
IPART allowance	51.1	50.9	50.1	48.7	200.8
WAMC actual	54.2	52.5	53.0	59.4	219.0
Difference	3.1	1.5	2.9	10.7	18.2
Difference (%)	5.8	2.9	5.4	18.0	8.3

Note: Proposed expenditure for consent transactions, metering and MDBA and BRC is not included.
Source: IPART analysis.

Cardno's review of WAMC's operating expenditure over the 2016 determination period found:

- There has been an increased scope and expectation of WAMC to improve the quality of its compliance management activities, demonstrated by the creation of NRAR.
- The 2016 Determination did not reflect the full costs of delivering some WAMC services, in particular for business customer service activities. However, Water NSW did not adopt the activity code framework to accurately record and report its costs, making it difficult for Cardno to confirm the amount that has been understated.²³
- WAMC achieved its output measures for most of its activities. However, for 2 activities (water plan performance assessment, and development of water planning and regulatory framework) outputs were not achieved.²⁴ DPIE explained this was due to a reprioritisation of its efforts to deliver Basin Plan activities.

Responding to our Draft Report, stakeholders raised concerns about potential duplication of services and roles between the 3 WAMC agencies. Stakeholders consider the merged functions should bring cost savings and better customer service, which was not evident from WAMC's pricing proposal. Stakeholders also raised concerns about paying for past poor performance and under delivery of water management activities.²⁵

We acknowledge these stakeholder concerns and have included only the efficient costs for performing water management activities in WAMC's operating expenditure allowance. This amount provides WAMC the flexibility to deliver its roles and responsibilities and prioritise its expenditure accordingly over the regulatory period.

WAMC has already taken several steps to respond to legislative reforms and lift its performance including establishing the NRAR in late 2017, resulting in an overspend of its 2016 determination allowance. Because we do not conduct a post review of its operating expenditure, any overspend is borne by WAMC. Where WAMC has underspent on particular activities, it should be careful that its reprioritisation of expenditure does not lead to under-delivery of its water management activities in future determination periods.

3.3 We maintained our reduction in compliance costs, but recognise that efficient costs may change in the future

We recognised in our Draft Report that WAMC's increased proposed and actual compliance management expenditure reflects a step change in resourcing to address compliance and enforcement issues raised in the Matthews review (Box 3.1).

Box 3.1 WAMC's performance in water regulation

During the 2016 determination period, DPIE's compliance and enforcement program focused on increasing voluntary compliance by conducting audits, on-site and remote monitoring, and providing advice and education to customers. NRAR was established in early 2018, in response to an independent inquiry that found existing water compliance and enforcement arrangements were ineffectual and required urgent improvement. Establishing NRAR resulted in a change in WAMC's compliance and enforcement regime, its resource priorities, and costs required to deliver this activity.

Source: NSW Department of Industry (Ken Matthew AO), *Independent investigation into NSW water management and compliance – Final Report*, November 2017.

Our draft decision was to reduce WAMC's proposed compliance costs by around \$38.9 million for the 2021 determination period, consistent with Cardno's recommendation.²⁶ We agree that in the short term a higher level of expenditure is required to address historical ineffective compliance management and delays in undertaking metering reform.²⁷ Our decision is unchanged from the Draft Report.

We consider our decision represents the efficient level of expenditure that would be required for a steady-state organisation with a mature and effective compliance function. This is derived from comparative benchmarks against other states (i.e. Victoria).²⁸ We acknowledge there are limitations with benchmarking and we understand NRAR has commenced some work in this area with MDBA and other states.²⁹

We reduced WAMC's proposed compliance costs and excluded the balance of costs from the efficient costs that users pay. However, we have not reduced the total value of NRAR's proposed compliance expenditure other than applying a catch-up efficiency. Given NRAR is currently operating under an intensive phase of compliance and enforcement, we recommended NRAR seek funding from the government to recover these costs.³⁰ By reducing WAMC's proposed compliance costs, we ensure users do not pay for past inefficiencies in compliance and enforcement. However, our recommendation also ensures NRAR obtains sufficient funding to perform its compliance and enforcement functions.

In response to our Draft Report, WAMC was concerned that the efficient costs of compliance are too low. It considered this may result in potential underfunding in the future if WAMC does not receive funding from the government and cannot recover compliance management costs from users.³¹ We assessed the efficient level of compliance based on the current operating environment. This operating environment may change in the future especially in light of the non-urban metering reform policy. For future determinations, we will assess the efficient level of compliance management costs required based on the circumstances prevailing at that time.

3.4 We re-profiled regional water planning costs

In our Draft Report, we decided to defer regional water planning costs for 2 years for DPIE to develop a more robust and integrated state-wide regional water planning program, and to appropriately engage with its stakeholders on its policies.³² This decision was consistent with Cardno's recommendation, and resulted in a reduction of WAMC's proposed costs by \$2.6 million over the 2021 determination period.

DPIE did not agree with this recommendation and considers its stakeholder engagement and planning work is more advanced than was acknowledged by Cardno. It considers the reductions made will delay the implementation of these regional water strategies.³³

Based on the additional information supplied, we have some additional assurance regarding the effectiveness and timing of DPIE's stakeholder engagement. However, we are still concerned that circumstances are changing quickly and DPIE has not effectively considered the changing context. For example, drought conditions are easing and DPIE should take time to consider what planning initiatives should take priority. Therefore, our decision is to lower the scope adjustment for regional water planning from 25% to 10%.³⁴

Our decision aims to incentivise WAMC to rebalance its efforts to ensure appropriate and effective resource planning, effort prioritisation and stakeholder consultation is undertaken before significant costs are incurred. By deferring the costs allowed, we also aim to incentivise DPIE to carefully structure its planning and fulfil its obligations at the lowest cost.

3.5 We increased customer management costs but lowered them from WAMC's proposal

WAMC has proposed customer management costs of \$5.2 million per year (or \$20.4 million for 4 years) for the 2021 determination period. Of the \$5.2 million per year proposed, \$4.6 million (89%) is for Water NSW and \$0.6 million (11%) is for NRAR.

Our draft decision was to set the efficient level of expenditure using the prorated 2020–21 financial year out-turn of costs for this activity, consistent with Cardno's recommendation. This approach recognises there may be some underfunding of WAMC's costs from the 2016 determination period. However, the efficient expenditure required to deliver this activity is lower than was proposed by WAMC.

Water NSW considers our draft decision is not achievable and that Cardno has not put sufficient weight on its actual expenditure over the 2016 determination period.³⁵ Cardno assessed Water NSW's submission, but did not change its recommendation. The additional information provided did not alleviate its concerns about the accuracy of Water NSW's allocation of costs to customer management and other account and billing activities.³⁶

We maintained a conservative approach to the proposed increases in customer management expenditure, based on available evidence. However, we updated our adjustment using more recent 2020–21 financial year customer management cost data,³⁷ resulting in \$1.5 million of customer management costs being reinstated.

Our decision on NRAR's customer management costs is unchanged. That is, we consider NRAR's customer management costs are justified under the current operating environment, but do not represent the costs of a steady state organisation in the medium to long term.³⁸ Aligned with the treatment of compliance management costs, the efficient costs of NRAR's customer management costs are recovered from users based on the Deed of Transfer,^a and we recommend the NSW Government pay the remaining balance proposed by NRAR.

As discussed in our Draft Report, we are working to amend Water NSW's reporting manual to require Water NSW to correctly report its costs by activity against the WAMC activity codes. This approach should address cost allocation issues for the next determination period. We expect NRAR and Water NSW will be able to provide more reliable and robust forecasts in future expenditure reviews as they improve their business processes to better deliver WAMC's services.

3.6 We reinstated some costs for water modelling while other activities remain unchanged

In our Draft Report, we made \$15.9 million in adjustments to WAMC's proposed operating expenditure for a number of activities. DPIE on behalf of WAMC did not agree with our adjustments for water modelling, water plan and performance assessment, and intergovernmental activities.

- **Surface water and groundwater modelling** – Based on the additional information provided by DPIE, we consider there is a material change in WAMC's scope of work for water modelling to support government priorities including floodplain harvesting, regional water strategies and Sustainable Diversion Limit Adjustment Mechanism projects.³⁹ Therefore, we decided to reinstate \$2.8 million relating to surface water and groundwater modelling costs.
- **Water plan and performance assessment** – In our Draft Report, we considered WAMC's obligations were largely business as usual and were unchanged from the current determination period.⁴⁰ We also noted WAMC reprioritised its expenditure and significantly underspent in this area, resulting in WAMC not achieving its output measures and performance.

^a The Deed of Business Transfer sets out the roles and responsibilities between the WAMC agencies following the transfer of functions from DPI Water to Water NSW and the creation of NRAR during the 2016 determination period.

In its submission to our Draft Report, DPIE considered the recommended adjustments will result in it being unable to meet its statutory requirements. The submission also referred to recent reports from the Natural Resources Commission and Independent Commission Against Corruption recommending NSW should commit additional resources to water sharing plan monitoring programs and establish a dedicated unit.⁴¹

Cardno reviewed DPIE's submission and additional information provided. It found the resourcing required to complete the proposed additional reporting and monitoring work is broadly in line with the recommended efficient expenditure. However, it is still concerned that DPIE's proposed additional expenditure does not represent an informed trade-off between service, cost and risk. Cardno also noted that DPIE is still developing an evaluation framework of the service and costs required to deliver this activity.⁴²

We support Cardno's conclusion that it is not efficient to include increases in expenditure at this time if the objectives of the expenditure are unclear. We consider there is insufficient evidence to change our draft decision.

- **Intergovernmental activities** – We reviewed the additional information provided by DPIE and our decision on intergovernmental activities is unchanged from our Draft Report. That is, we still consider around 25% of the effort for intergovernmental activities falls outside the scope of WAMC monopoly services. We also consider a 5% scope adjustment is warranted to reflect the Claydon review recommendations for greater efficiency through improved governance arrangements and less involvement in committee work.⁴³

Stakeholders did not comment and we did not change the following draft decisions:

- **Development of water planning and regulatory framework** – We consider the efficient expenditure for this activity should be set at the actual level of expenditure for this activity in the 2016 determination period. This provides an appropriate incentive for DPIE to deliver more with less, as it has done in the current period. We consider DPIE should also seek to implement long-term proactive government policy and reduce the amount of reactive work required for this activity.
- **Drainage management** – We consider all costs on drainage management should be excluded.⁴⁴
- **Business governance and support** – DPIE has included costs for W10-02 for transparency purposes. We made an administrative adjustment to remove these costs to avoid duplication.⁴⁵

3.7 We reallocated some corporate costs to WAMC

We engaged Atkins to separately review Water NSW's corporate costs. The review included the efficiency of corporate costs by functional team and how these costs should be allocated across its regulated businesses (i.e. WAMC, Water NSW Rural Valleys, Water NSW Greater Sydney and Broken Hill pipeline).

In our Draft Report, we considered whether using direct costs to allocate corporate costs (including non-core expenditure), rather than total expenditure as proposed by Water NSW, is more appropriate. We applied Atkins' recommended adjustment using this approach, which increased WAMC's allocation of corporate overheads by \$2.1 million.

In response to our draft decision, Water NSW maintained its total expenditure approach meets accounting standards, is consistent with IPART's cost allocation guidelines, and has been used by utilities in other jurisdictions. Water NSW also questioned whether allocating additional overhead to non-core activities would be consistent with the requirements of the *Water Charge (Infrastructure) Rules 2010*. It argued our draft approach would have unintended consequences, including allocating additional overhead costs to the Broken Hill pipeline.⁴⁶

Atkins assessed Water NSW's submission, including additional information provided on the number of full-time equivalent work hours. Atkins concluded there was insufficient information to change its recommended approach to cost allocation. However, it supported Water NSW's submission that there is a need to adjust the allocation to the Broken Hill pipeline and include costs for additional regulatory resources.⁴⁷ We considered Atkins and Cardno's adjustments to Water NSW's corporate overhead allocation and consider there is merit in maintaining this approach.⁴⁸ We decided to update this adjustment to include additional operating expenditure for the allocation of corporate costs consistent with our consultants' recommendations.

We did not apply catch-up efficiency adjustments to this reallocation to avoid double counting. Consistent with our Draft Report, we did not apply Atkins' high-level scope adjustments for customer management to avoid double counting of Cardno's scope adjustments from its detailed review of that activity.⁴⁹ Consistent with our Draft Report, we did not make any adjustments to DPIE's corporate overhead costs.

3.8 WAMC could make efficiency savings of \$7.3 million

We applied catch-up and continuing efficiency adjustments to WAMC's forecast operating expenditure, resulting in \$7.3 million in savings.

In making our decisions, we compared the total efficiency savings applied to WAMC against efficiencies achieved by other water utilities when they were at a similar stage of efficiency maturity. This comparison provides a sense of the scale of efficiency that should be achievable for the 2021 determination period (Table 3.4).

Table 3.4 Comparison of operating expenditure efficiencies

Determination	Start year	Catch-up efficiency (%)				Continuing efficiency (% p.a.)	Total efficiency challenge (% p.a.)	Conclusion at ex post review
		Year 1	Year 2	Year 3	Year 4			
Hunter Water	2009	1.0%	1.0%	1.0%	1.0%	0.8%	1.8%	Achieved
Sydney Water	2012	1.5%	2.0%	2.0%	2.0%	0.25%	2.1%	Overachieved
WAMC ^a	2021	0.5%	1.1%	1.6%	2.1%	0.7%	2.6%	Achievable

a. Catch-up efficiency is calculated based on Cardno's total recommended catch-up efficiencies for all WAMC agencies including activities where no catch-up efficiency was applied.

Source: Atkins, *Water NSW Expenditure Review – Final Report for IPART*, March 2021, Table 5–12; and Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, pp 62–64.

3.8.1 WAMC could make catch-up efficiency savings of \$3.7 million

Catch-up efficiency reflects the efficiency needed to be achieved over time to catch up with a company operating at the efficiency frontier. Our decision results in \$3.7 million of catch-up efficiency savings over the 2021 determination period (Table 3.5). This includes:

- 2 levels of catch-up efficiency on an activity basis for DPIE/ NRAR
- 1 level of catch-up efficiency on a business process basis for Water NSW.

We considered WAMC's submissions, however our decision is unchanged from our Draft Report Table 3.5 sets out the recommended levels of catch-up efficiency adjustments applied to WAMC's operating expenditure.

Table 3.5 Catch-up efficiency for operating expenditure (\$ millions, \$2020–21)

Level of catch-up efficiency	2021–22	2022–23	2023–24	2024–25
DPIE/NRAR				
Catch-up efficiency – Level 1 (cumulative %)	–0.90%	–1.79%	–2.68%	–3.55%
Catch-up efficiency – Level 2 (cumulative %)	–1.40%	–2.78%	–4.14%	–5.48%
Total catch-up efficiency (\$ million)	–0.3	–0.6	–0.9	–1.1
Water NSW				
Catch-up efficiency (cumulative %)	–1.10%	–2.19%	–3.26%	–4.33%
Total catch-up efficiency (\$ million)	–0.07	–0.2	–0.2	–0.3

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, pp 62–64; and Cardno, *WAMC Expenditure Review – Supplementary Report for IPART*, September 2021, pp 13–17.

DPIE/NRAR's catch-up efficiency

We applied catch-up efficiency adjustments of 0.9% (level 1) and 1.4% (level 2) per year to DPIE/NRAR's activities for the 2021 determination period. Level 1 catch-up efficiency has been applied to more mature activities. Level 2 catch-up efficiency has been applied to less mature activities. This approach recognises the relative efficiency of different WAMC activities without being unduly specific.⁵⁰ We discuss WAMC's areas of improvement in greater detail below. We have not applied catch-up efficiencies to activities where we accepted DPIE/NRAR's own efficiency challenge to avoid double counting. The overall impact of the catch-up efficiency adjustments is around 0.8%^b per year for DPIE/NRAR's operating expenditure.⁵¹

DPIE/NRAR did not agree with our draft decision and considers:

- it has already made \$73 million of targeted efficiency savings
- IPART has applied further untargeted and arbitrary cuts
- the recommended level of efficiency challenge is not achievable.

^b This includes activities for which no catch-up efficiency adjustments were applied.

We considered DPIE/NRAR's submission and have not changed our draft decisions. We agree with Cardno that DPIE's proposed efficiency savings do not represent genuine efficiencies. For example, 44% of DPIE's efficiency challenge relates to the exclusion of costs for duplicate services delivered by Water NSW.⁵²

We consider efficiency savings applied to inflated or conservative cost estimates are not genuine. However, we acknowledge DPIE has put forward some genuine efficiency savings, which we accepted. As noted above, we did not apply a catch-up efficiency adjustment for activities where we accepted DPIE's own efficiency challenge to avoid double counting. However, we consider there are further catch-up efficiencies that can be realised by DPIE/NRAR over the 2021 determination period.

We do not agree with DPIE/NRAR that our scope and catch-up adjustments are untargeted and arbitrary. We completed a detailed review of its proposed program and outputs for each activity. Further, we applied 2 levels of catch-up efficiency to clearly distinguish the different levels of maturity for each activity. This approach should assist DPIE in identifying which activities require a greater level of effort to achieve efficiencies. It also provides appropriate incentives to better manage activities with a level 2 catch-up over the 2021 determination period.

We also consider our catch-up efficiencies are realisable compared with efficiencies achieved by other water utilities. Cardno identified 2 areas where DPIE/NRAR could make material improvements to its processes for all of its activities and move towards the efficiency frontier over time:

- **Improvements to resource planning** – Cardno considered for many activities there was little granular historical cost information, and poor quantification of the desired outputs and the timing of these outputs. It also noted DPIE/NRAR performs limited risk analysis to determine how it would optimise its resources. Cardno also considered DPIE could better estimate its expected expenditure through a bottom-up approach using its existing resources to perform the required outputs, rather than a top-down approach to estimate future resource requirements.
- **Improvements in effort prioritisation** – Cardno considered many of DPIE's activities have subjective outputs. DPIE is seeking to increase the quality of its outputs to meet customer expectations and better achieve policy obligations. However, it has not identified how it would prioritise its efforts to achieve these outcomes. Cardno considers DPIE should improve its stakeholder consultation to appropriately balance the cost of performing its activities and the level of service required.⁵³

Water NSW's catch-up efficiency

In our Draft Report, we applied Cardno/Atkins' recommended catch-up efficiency adjustments of 1.1% per year, resulting in \$1.4 million in efficiency savings for Water NSW over the 2021 determination period. We consider that it is more appropriate for catch-up efficiency adjustments to be applied at the activity level instead of broad categories of costs. However, we recognise the limitations of this approach due to the unreliability of Water NSW's allocation of WAMC's costs at an activity level.

Water NSW did not agree with our draft decisions and considers there is no justification (or theoretical basis) given the absence of an 'efficiency frontier' on which to base these reductions. It also submitted the draft decision:

- was based on flawed benchmarking analysis applied inconsistently compared with other IPART decisions
- has potential for double counting given that uncontrollable costs should be excluded and (some) programs have already been specifically 'adjusted' once to ensure (scope) efficiency.⁵⁴

Atkins has reviewed and responded to Water NSW's comments in its Supplementary Report, and notes it has already addressed some of Water NSW's issues in its Final Report.⁵⁵ We are satisfied with Atkins' response regarding its methodology and application of catch-up efficiency. Therefore, we have not changed our draft decision.

We have not applied a catch-up efficiency adjustment for Water NSW's water monitoring activities to avoid double counting and to acknowledge Water NSW's proposed efficiency challenges, which have already been incorporated in its proposed costs.

In making our decisions, we considered catch-up efficiencies applied to other water utilities at a similar stage of efficiency maturity, and how Water NSW can achieve these efficiencies. Atkins has identified 4 key areas where Water NSW could make material improvements to its processes and move towards the efficiency frontier over time, including:

- greater management focus on cost performance, including alignment of incentives, embedding genuine challenge into budgeting processes and governance of initiatives (such as hardwiring the savings associated with an initiative directly into future budgets)
- clearer internal accountability for performance of each regulated business and water source, with clear profit and loss (P&L)-style ownership and accountability
- P&L-style accountability for corporate expenditure and directly allocating charges to the regulated businesses
- continued progress in improving procurement, including tracking of benefits.⁵⁶

3.8.2 WAMC could make continuing efficiency savings of \$3.7 million

Our decision is to apply continuing efficiency adjustments of 0.7% per year,^c totalling \$3.7 million in efficiency savings over the 2021 determination period (Table 3.6). The continuing efficiency adjustment (in percentage terms) is unchanged from our draft decision.

Table 3.6 Continuing efficiency for operating expenditure (\$ millions, \$2020–21)

Level of efficiency	2021–22	2022–23	2023–24	2024–25	Total
Continuing efficiency (cumulative %)	–0.70%	–1.40%	–2.09%	–2.77%	
Continuing efficiency (\$ million)	–0.4	–0.7	–1.1	–1.4	–3.7

Source: Cardno, *WAMC Expenditure Review – Supplementary Report for IPART*, September 2021, pp 13–17; and IPART analysis.

^c We derived the continuing efficiency adjustment from the compound long-run average of the Australian Bureau of Statistics multi-factor productivity in the Australian economy.

The continuing efficiency adjustment is important because it ensures our maximum prices capture the impact of innovation and new technologies that enable firms to do more with less inputs. We favour a forward-looking adjustment because it:

- incentivises the regulated firms to pursue productivity enhancing activities over the determination period
- recognises market-based firms' continuous push to innovate and become more productive over time
- is consistent with the incentive-based framework under which we set prices for public water utilities.

By putting a quantitative target in place, we establish an expectation of continuous productivity improvement that efficient businesses should reasonably be able to achieve over the next determination period.

In response to our draft decision, Water NSW submitted that including a continuing efficiency factor is not unreasonable. However, it disagreed with 0.7% and suggested a range of 0% to 0.35%. It considered that most weight should be given to the measured productivity of the utility industry (rather than the market sector) since the utility industry most closely reflects the input and output characteristics of water businesses. It also argued for giving most weight to multi-factor productivity (MFP) estimates over the most recent historical years (rather than 40 years), to produce more realistic estimates of the scope for productivity gains over the forthcoming regulatory period.⁵⁷

We consider that our current approach, which uses all available data, is preferable to a shorter time period. A longer time series provides more data points and helps to reduce the impacts on final estimates of unusual MFP growth over a single business cycle. Further, this approach does not require judgement about what part of the business cycle we will experience over the forthcoming regulatory period.

We also consider it is appropriate to base the continuing efficiency factor on the market sector data rather than data specific to the utilities sector or a subset of industries. This approach represents the efficiencies that could be available to utilities, through internal initiatives or incorporated through supply chains.

3.9 WAMC will continue reporting its output measures annually

Our decision is:



6. For WAMC to report annually against the output measures and in accordance with the framework in the Output Measures Report, which will be published on IPART's website.

We require WAMC to report against a set of output measures for each year of the 2021 determination period. These are discussed in the Output Measures Report. They relate to a range of activities including surface water and groundwater quantity and quality monitoring, floodplain management plan development and compliance, and customer and billing management. These measures are intended to:

- ensure accountability for delivering the water management services paid for by water users through regulated prices
- provide transparency to stakeholders in terms of the water management services delivered and activities undertaken by WAMC
- inform future expenditure and price reviews.

We expect over time WAMC would be collecting, monitoring and acting on data in addition to these output measures, to improve its performance.

Chapter 4 »

Capital expenditure

04

Summary of our decisions for capital expenditure

WAMC's efficient historical capital expenditure is higher than the capital expenditure reflected in current prices

When we set the allowance in 2016, WAMC did not propose including any capital expenditure for its corporate systems. WAMC proposed including corporate capital expenditure incurred to deliver its functions over the 2016 determination period in the regulatory asset base (RAB).

We consider it is efficient to include an additional \$27.3 million of corporate capital expenditure in WAMC's RAB (including \$15.8 million for the additional year of deferral). Increasing the RAB will result in higher prices.

The efficient level of forecast expenditure is higher than the 2016 allowance but less than WAMC proposed

We set WAMC's efficient level of capital expenditure for the 2021 determination period at \$35.3 million, significantly higher (\$20.6 million or 140.3%) than the forecast used to set prices in 2016. The main driver of this increase is additional investment in WAMC's corporate systems.

The efficient capital expenditure is \$6.7 million (16.0%) less than WAMC proposed, comprising:

- \$4.2 million in scope adjustments
- \$2.0 million in catch-up efficiency adjustments
- \$0.6 million in continuing efficiency adjustments.

Our adjustments recognise the efficiency challenges proposed by the WAMC agencies for water monitoring. We also identify how WAMC can achieve our recommended efficiency savings.

This chapter sets out our assessment of WAMC's efficient level of capital expenditure. We reviewed the efficiency of WAMC's actual capital expenditure over the current determination period^a and its proposed capital expenditure for the 2021 determination period.

As with operating expenditure, we engaged Cardno to review WAMC's historical and forecast capital expenditure and recommend the efficient amount to include in the regulatory asset base (RAB). We engaged Atkins to undertake a separate review of Water NSW's corporate costs. We considered recommendations from both consultants and stakeholder submissions in making our decisions on the efficient capital expenditure.

^a Our review of WAMC's capital expenditure over the 2016 determination period includes the last year of the 2011 Determination (2015–16), the 2016 Determination (2016–2020) and the year of the deferral (2020–21).

As discussed in Chapter 3, Water NSW did not allocate its WAMC costs using the activity code framework. Instead, it has allocated its capital expenditure based on its own defined business units. Capital expenditure is split into 2 broad categories – water monitoring (groundwater and surface water monitoring activities) and corporate capital expenditure (licensing, billing and customer service activities).

Cardno considered Water NSW should directly allocate its costs to WAMC activities. Water NSW's current approach loses granularity and traceability of expenditure to these activities. Recognising the data Water NSW has provided is the best information available, Cardno assessed Water NSW's current and proposed capital expenditure against the 2 categories.

4.1 Efficient historical capital expenditure is \$43.3 million

Our decision is:



7. To set the efficient level of WAMC's past capital expenditure to be included in the regulatory asset base for the 2016 determination period as shown in Table 4.1.

Table 4.1 Decision on efficient capital expenditure for the 2016 determination period (\$ millions, \$2020–21)

	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
WAMC actual	2.4	4.7	4.9	6.8	9.8	15.8
IPART decision	1.3	4.7	4.9	6.8	9.8	15.8
Difference	-11	0.0	0.0	0.0	0.0	0.0
Difference (%)	-46.8	0.0	0.0	0.0	0.0	0.0

Note: Our review of WAMC's capital expenditure for the 2016 determination period includes the last year of the 2011 Determination (2015–16), the 2016 Determination (2016–2020) and the year of the deferral (2020–21).

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021; Cardno, *WAMC Expenditure Review – Supplementary Report for IPART*, September 2021 and IPART calculations.

Our decision is to set WAMC's efficient historical capital expenditure over the 2016 determination period at \$43.3 million.^b This is \$1.1 million (2.5%) lower than WAMC's actual capital expenditure over the period.

Overall, WAMC overspent on its capital expenditure allowance by \$11.5 million (78.3%) over the 2016 determination period.^c Cardno noted it is likely the 2016 allowance was lower than the expenditure required to deliver WAMC's functions because the allowance did not include corporate capital expenditure. We consider it is appropriate for WAMC to recover its capital expenditure for office accommodation and information and communication technology (ICT) systems.⁵⁸

^b This figure includes the last year of the 2011 Determination (2015–16), the 2016 Determination (2016–2020) and the year of the deferral (2020–21).

^c This figure does not include Water NSW's actual spend of \$15.8 million in the year of the deferral.

In arriving at the efficient level of historical capital expenditure, we deducted \$1.1 million due to DPIE's error in recording costs of decommissioning groundwater bores in WAMC's 2015–16 RAB.⁵⁹ We made no further adjustments to the historical capital expenditure.

Our draft decision was to reallocate \$7.4 million of Water NSW's corporate capital expenditure from the WAMC business to its other regulated businesses and phase in corporate capital expenditure over the 2016 determination period.⁶⁰ Water NSW did not agree with our draft decision because the capital expenditure relates to accommodation and information and computer technology (ICT) projects. It considers costs should be allocated to the WAMC business because they are incurred by WAMC and should be recovered from WAMC customers, who directly benefit from the asset over the useful life of these assets.⁶¹ Cardno considered this additional information and revised its recommendation.

We consider the additional information provided by Water NSW supports its proposal that this expenditure should not be reallocated and phased in. We also reviewed Water NSW's corporate capital expenditure allocation over the 2016 period across its other business segments (that is, Greater Sydney and Rural Valleys) to ensure there is no double counting of historical capital expenditure. Therefore, we accepted WAMC's proposed historical capital expenditure and only made an adjustment for the error in 2015–16.

4.2 Efficient forecast expenditure is higher than the 2016 allowance

Our decision is:



8. To set the efficient level of WAMC's capital expenditure to be included in the regulatory asset base for the 2021 determination period as shown in Table 4.2.

Table 4.2 Decision on efficient capital expenditure for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposal	9.9	10.4	12.7	9.0	42.1
IPART decision	9.0	9.2	9.8	7.5	35.3
Difference	-1.0	-1.3	-2.9	-1.6	-6.7
Difference (%)	-10.0	-12.3	-22.7	-17.4	-16.0

Note: Proposed expenditure for consent transactions, metering and MDBA and BRC is not included.

Source: Cardno, *WAMC Expenditure Review – Supplementary Report for IPART*, September 2021 and IPART analysis.

WAMC proposed capital expenditure of \$42.1 million for the 2021 determination period. Our decision is to set WAMC's efficient level of capital expenditure for the 4-year 2021 determination period at \$35.3 million consistent with Atkins' and Cardno's recommendations (Table 4.2). This amount is a \$6.7 million (16.0%) expenditure reduction to WAMC's proposed capital expenditure for the 2021 determination period and \$20.6 million (140.3%) higher than the capital expenditure we used to set prices in 2016.

The main driver of the increased expenditure for the 2021 determination period is the inclusion of corporate capital expenditure. We consider it is appropriate for WAMC to recover its corporate capital expenditure for office accommodation and ICT systems used to deliver its functions.

Our reductions in forecast capital expenditure comprise:

- \$4.2 million in scope adjustments, which applies to some of WAMC's corporate capital expenditure
- \$2.0 million in catch-up efficiency adjustments, based on a catch-up efficiency factor of 1.1% per year
- \$0.6 million in continuing efficiency adjustments, based on a continuing efficiency factor of 0.7% per year.

Table 4.3 summarises our adjustments for the 2021 determination period. This expenditure has increased by \$1.1 million since our draft decision due to additional information provided by Water NSW on vehicle procurement.

Table 4.3 Efficient capital expenditure for the 2021 determination period (\$ millions, 2020–21)

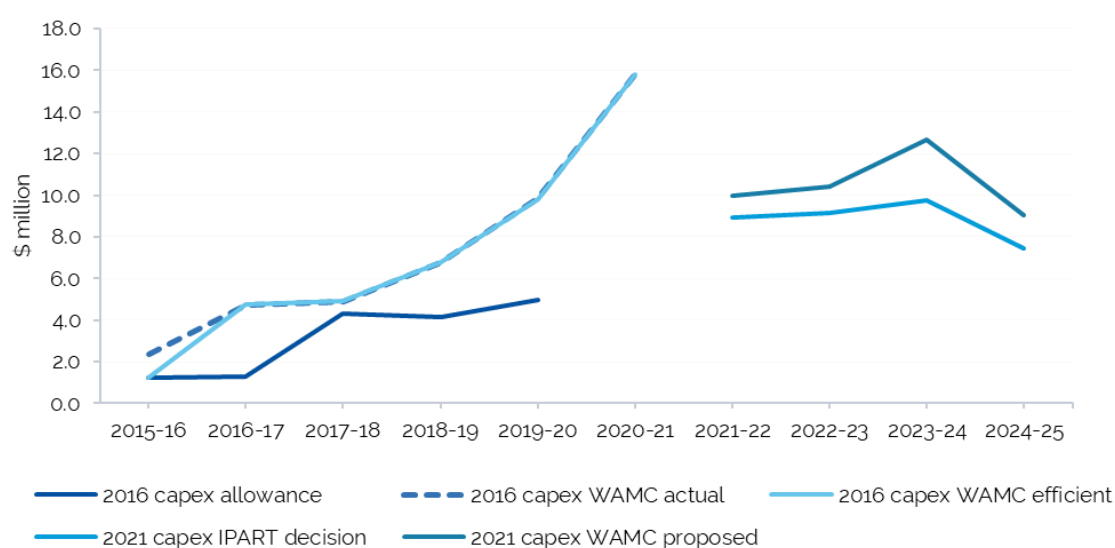
	2021–22	2022–23	2023–24	2024–25	Total
WAMC's proposal	9.9	10.4	12.7	9.0	42.1
Specific adjustments					
Atkins's scope adjustments	-0.7	-0.7	-1.9	-0.7	-4.2
Efficiency adjustments					
Catch-up efficiency	-0.2	-0.4	-0.7	-0.6	-2.0
Continuing efficiency	-0.1	-0.1	-0.2	-0.2	-0.6
Total efficient capex					
Total	9.0	9.2	9.8	7.5	35.3
Difference	-1.0	-1.3	-2.9	-1.6	-6.7
Difference (%)	-10.0	-12.3	-22.7	-17.4	-16.0

Note: Proposed expenditure for consent transactions, metering and MDBA and BRC is not included.

Source: Atkins, Water NSW Expenditure Review – Supplementary Report for IPART, June 2021 and IPART analysis.

Figure 4.1 compares our decision with WAMC's historical and forecast capital expenditure.

Figure 4.1 Our decision compared with past and proposed capital expenditure



Source: IPART analysis.

The sections below outline our findings relating to WAMC's forecast capital expenditure.

4.2.1 We reduced corporate capital expenditure to directly allocate costs based on cost drivers

We reduced Water NSW's corporate capital expenditure by \$4.2 million (excluding efficiency adjustments) over the 2021 determination period. Our decision is based on Atkins's separate review of Water NSW's corporate expenditure (Box 4.1). Cardno did not make any separate recommendations on WAMC's corporate capital expenditure to avoid double counting of cost savings.

The corporate capital expenditure reduction comprises:

- a \$3.0 million reallocation of Water NSW's corporate capital expenditure to its other business units for ICT projects and its Integrated Business Systems project,
- a \$1.2 million reduction for vehicle procurement expenditure. We considered the additional information provided by Water NSW in response to our Draft Report and agree with Atkins's conclusion that a lower reduction should be applied to take into account the impact of a longer useful life of vehicles on maintenance costs.⁶²

Based on Atkins' recommendation on Water NSW's corporate capital expenditure, an ex-post adjustment to the NRR may be required at the next Water NSW Greater Sydney price review.

Box 4.1 Method for allocating corporate capital expenditure

Water NSW has several business segments, including part of WAMC (the subject of this price review), Rural Valleys, Greater Sydney and the Broken Hill pipeline. Water NSW allocates capital expenditure for its corporation-wide projects – such as ICT, property and fleet – across these business segments.

In 2020, Water NSW amended its Cost Allocation Manual to allocate its corporate capital expenditure using salaries.

We engaged Atkins separately to review Water NSW's current capitalisation method as a whole for all its business segments.

Atkins considers each capital project should have a clear view of the scope, assets, deliverables and efficiencies at the business plan stage to allocate costs to the relevant regulated business segments. That is, the corporate capital expenditure should be directly allocated based on its cost drivers.

Atkins has reviewed each project with significant expenditure, and assessed the impact of direct cost allocation at individual project level to determine the relevant corporate capital expenditure that should be reallocated to the WAMC business.

Source: Atkins, *Water NSW Expenditure Review – Final Report for IPART*, March 2021, pp 202–205.

4.3 WAMC could make efficiency savings of \$2.6 million

Consistent with our approach for operating expenditure, we applied catch-up and continuing efficiency adjustments to WAMC's forecast capital expenditure. We consider WAMC could make \$2.6 million (6.1%) savings from catch-up and continuing efficiencies.

The total efficiency savings applied to WAMC is comparable to efficiencies applied to other water utilities at a similar stage of efficiency maturity (Table 4.4). We consider the efficiency applied is comparable to that of Sydney Water in 2016.

Table 4.4 Comparison of capital expenditure efficiencies

Determination	Start year	Catch-up efficiency (%)				Continuing efficiency (% p.a.)	Conclusion at ex-post review
		Year 1	Year 2	Year 3	Year 4		
Water NSW GS	2020	2.1%	4.1%	6.7%	7.3%	0.8%	N/A
Central Coast	2019	3.25%	7.5%	10.8%	13.0%	0.3%	N/A
Sydney Water	2016	2.9%	5.8%	7.2%	8.6%	0.3%	Achieved
WAMC	2021	2.1%	4.2%	6.8%	7.4%	0.7%	Achievable

Source: Atkins, *Water NSW Expenditure Review – Final Report for IPART*, March 2021, Table 6–15, pp 134–147; IPART, *Review of prices for Water NSW Greater Sydney from 1 July 2020 – Final Report*, June 2020, p 3; IPART, *Review of Central Coast Council's water, sewerage and stormwater prices to apply from 1 July 2019*, May 2019, p 42 and IPART, *Review of prices for Sydney Water Corporation from 1 July 2016 to 30 June 2020*, June 2016, p 111.

4.3.1 WAMC could make catch-up efficiency savings of \$2.0 million

Catch-up efficiency is the efficiency that needs to be achieved to catch up with a frontier company. Our decision is to apply catch-up efficiency savings of \$2.0 million over the 2021 determination period.

In our Draft Report, we applied catch-up efficiency savings of \$1.9 million. We did not apply a catch-up efficiency adjustment for Water NSW's water monitoring activities. This approach aimed to avoid double counting and to acknowledge Water NSW's proposed efficiency, which has already been incorporated in its proposed costs. Our catch-up efficiency adjustment applies to Water NSW's corporate capital costs. The adjustment is based on Atkins's judgment, its review of Water NSW's capital processes, and analysis of a sample of its representative capital program as a whole.⁶³

Atkins identified 4 key areas how Water NSW could move towards the efficiency frontier over time:

- Improvements to capital program development, optimisation and prioritisation
- Improvements to value engineering
- Improvements in cost estimating and the management of contingencies
- The impact of new procurement processes and the likely savings from more effective program management.⁶⁴

In response to our draft decision, Water NSW raised concerns that our catch-up efficiency adjustments did account for progress on developing a number of its capital processes. It also questioned whether the catch-up efficiencies are achievable for a relatively young organisation.⁶⁵

Atkins reviewed Water NSW's submission, but does not consider its concerns are sufficient to justify a change to its catch-up efficiency adjustments. Water NSW does not appear to challenge its capital program internally, and the various areas identified above should assist Water NSW in achieving its catch-up efficiencies. Atkins also recognises Water NSW is employing new initiatives that ought to have projected benefits and efficiency savings. However, these savings have not been factored into its expenditure proposals. On this basis, Atkins considers the catch-up efficiency adjustments are warranted.⁶⁶

We agree with Atkins's assessment and have decided to adopt its catch-up efficiencies. Atkins's total combined capital efficiency challenge for Water NSW is set out in Table 4.5.

Table 4.5 Catch-up efficiency for capital expenditure (\$ millions, \$2020–21)

Level of efficiency	2021–22	2022–23	2023–24	2024–25	Total
Catch-up: capital program development, optimisation and prioritisation	0.1%	0.2%	0.3%	0.4%	
Catch-up: value engineering	0.5%	1.0%	1.5%	2.0%	
Catch-up: cost-estimating	0.5%	1.0%	2.0%	2.0%	
Procurement	1.0%	2.0%	3.0%	3.0%	
Total catch-up efficiency (cumulative %)	2.1%	4.2%	6.8%	7.4%	
Total catch-up efficiency (\$ million)	-0.2	-0.4	-0.7	-0.6	-2.0

Source: Atkins, *Water NSW Expenditure Review – Supplementary Report for IPART*, June 2021, p 31; and IPART analysis.

4.3.2 WAMC could make continuing efficiency savings of \$0.6 million

The continuing efficiency adjustment reflects the long-run shift in the efficiency frontier. It ensures our maximum prices capture the impact of innovation and new technologies that enable firms to do more with less inputs. By setting a quantitative target, we establish an expectation of continuous productivity improvement that efficient businesses should reasonably be able to achieve over the next determination period.

Our draft decision was to apply a continuing efficiency adjustment of 0.7% per year (Table 4.6).^d Water NSW did not agree with our draft decision and considered this adjustment unachievable.⁶⁷ We have not changed our decision, for the reasons outlined in section 3.8.2. Our continuing efficiency adjustment for Water NSW results in \$0.6 million in efficiency savings over the 2021 determination period.⁶⁸

Table 4.6 Continuing efficiency for capital expenditure (\$ millions, \$2020–21)

Level of efficiency	2021–22	2022–23	2023–24	2024–25	Total
Continuing efficiency (cumulative %)	-0.7%	-1.4%	-2.1%	-2.8%	
Continuing efficiency (\$ million)	-0.1	-0.1	-0.2	-0.2	-0.6

^d The value of the continuing efficiency adjustment is derived from the compound long-run average of the Australian Bureau Statistics multi-factor productivity in the Australian economy.

Chapter 5 »

Murray–Darling Basin Authority and
Dumaresq–Barwon Border Rivers
Commission costs

05

Summary of our decisions for MDBA and BRC costs

WAMC's efficient level of building block MDBA costs is \$34.6 million and BRC costs is \$3.5 million

Despite applying efficiency adjustments, our building block Murray–Darling Basin Authority (MDBA) and Dumaresq–Barwon Border Rivers Commission (BRC) costs for WAMC are higher than DPIE/NRAR's proposal (51.6% and 13.8% respectively).

This outcome is mainly because we did not accept DPIE's allocation of total MDBA and BRC costs across the WAMC and Water NSW rural bulk water determinations.

Instead, we shifted Salt Interception Scheme costs of \$13.1 million from Water NSW rural bulk water to WAMC. Regulated and unregulated river users in the Murray–Darling Basin are both driving the need for this scheme, so its costs should be allocated to them (via the WAMC determination).

We applied the building block approach to WAMC's MDBA and BRC costs

We consider this approach is more efficient and equitable than recovering expenditure in the year it occurs (our previous approach).

In particular, capital expenditure would be recovered over the useful life of the assets it creates.

WAMC contributes to 2 inter-jurisdictional water management organisations on behalf of the NSW Government – the MDBA and BRC.

We reviewed the method for allocating MDBA and BRC costs between the WAMC and Water NSW rural bulk water price determinations, as well as the efficiency of these costs. We engaged Atkins to assist with this review. We considered Atkins' recommendations and stakeholder submissions in making our decisions.

5.1 WAMC's efficient costs for MDBA is \$34.6 million and BRC is \$3.5 million

Our decisions are:

9. The efficient level of WAMC's Murray–Darling Basin Authority costs for the 2021 determination period is \$34.6 million as shown in Table 5.1.
10. The efficient level of WAMC's Dumaresq–Barwon Border Rivers Commission costs for the 2021 determination period is \$3.5 million as shown in Table 5.2.

DPIE/NRAR proposed MDBA costs of \$22.8 million be allocated to WAMC for the determination period. Our decision is to allow MDBA costs of \$34.6 million (Table 5.1). Although this is 51.6% higher than DPIE's proposal, it is lower than the 2016 allowance and actuals (by 11.2% and 20.5%, respectively).

The higher allowance is mainly driven by our reallocation of Salt Interception Scheme (SIS) costs of \$13.1 million from the Water NSW rural bulk water determination to the WAMC determination, as discussed in section 5.4.

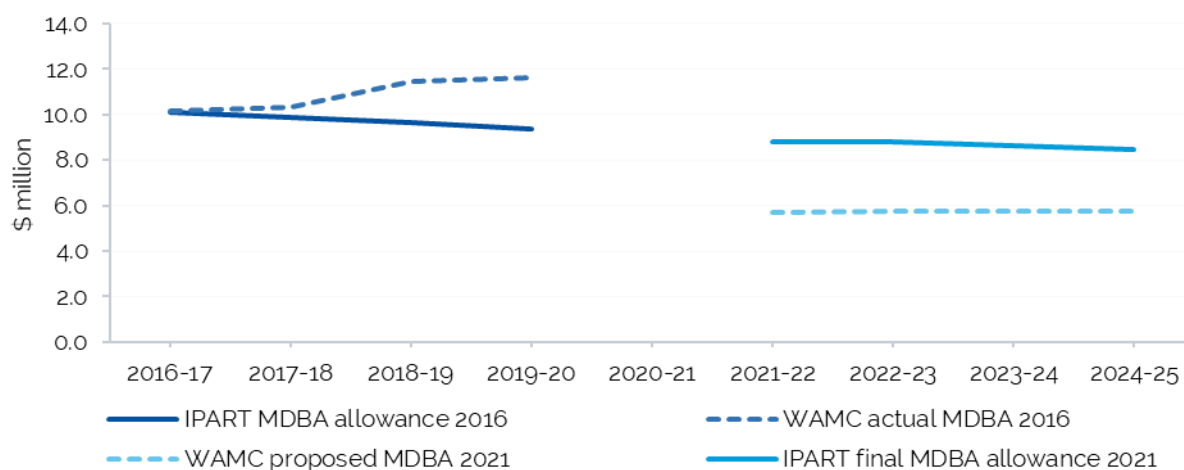
Table 5.1 Decision on efficient building block MDBA costs for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposed	5.7	5.7	5.7	5.7	22.8
IPART decision	8.8	8.8	8.6	8.5	34.6
Difference	3.1	3.1	2.9	2.7	11.8
Difference (%)	54.9%	53.3%	50.5%	47.8%	51.6%

Note: Totals may not add due to rounding.

Source: IPART calculations and Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, p 11; and IPART analysis.

Figure 5.1 Our decision and WAMC's past and proposed MDBA contributions (\$ millions, \$2020–21)



Source: IPART analysis.

DPIE also proposed BRC costs of \$3.0 million be allocated to WAMC for the determination period. Our decision is to allow BRC costs of \$3.5 million (Table 5.2). Our allowance is higher because we rebalanced the BRC's corporate costs between the WAMC and Water NSW rural bulk water determinations.

Table 5.2 Decision on efficient BRC costs for the 2021 determination period (\$ millions, \$2020–21)

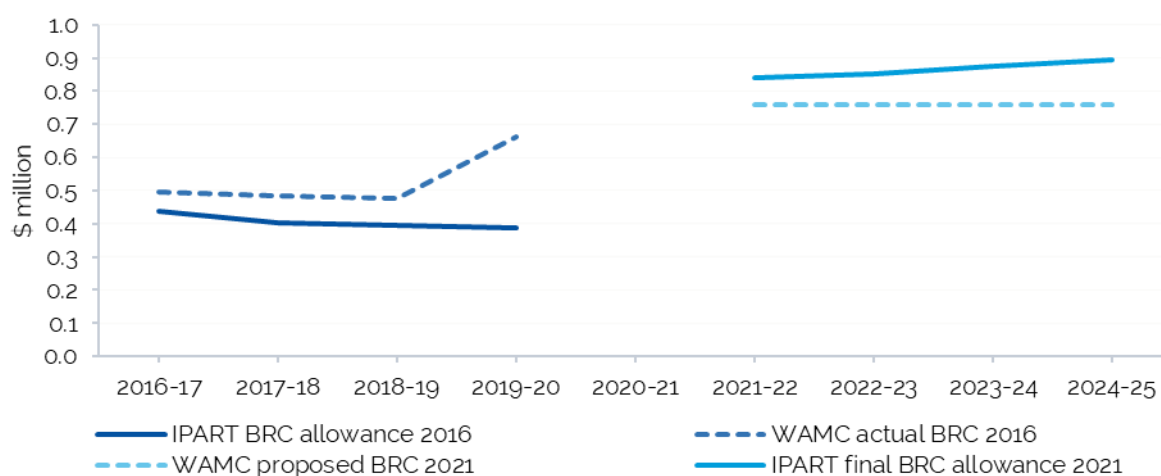
	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposed	0.8	0.8	0.8	0.8	3.0
IPART decision	0.8	0.9	0.9	0.9	3.5
Difference	0.1	0.1	0.1	0.1	0.4
Difference (%)	10.6%	12.0%	14.9%	17.9%	13.8%

Note: WAMC's proposal includes only operating expenditure. IPART's decision includes operating and capital expenditure (building block). Totals may not add due to rounding.

Source: IPART calculations and Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, pp 14–15; and IPART analysis.

DPIE's proposal, and our decision, represent a step change in BRC costs compared with the 2016 determination period (Figure 5.2).

Figure 5.2 Our decision and WAMC's past and proposed BRC contributions (\$ millions, \$2020–21)



Source: IPART analysis.

5.2 DPIE proposed increases in total MDBA and BRC costs

DPIE proposed increases in total MDBA and BRC contributions across the WAMC and Water NSW rural bulk water reviews.^a

5.2.1 MDBA costs would increase by 8.1% overall under DPIE's proposal

DPIE proposed total MDBA contributions of \$126.8 million,⁶⁹ compared with \$117.3 million for the previous price reviews (an increase of 8.1%).

It proposed recovering 18.0% of these costs from the WAMC determination and 82.0% from the Water NSW rural bulk water determination. This cost allocation is based on DPIE assigning MDBA's non-river management costs to WAMC and river management costs to Water NSW rural bulk water.⁷⁰

In the previous price reviews, the MDBA contributions were split 33.2% to WAMC and 66.8% to Water NSW rural bulk water.

5.2.2 BRC costs would increase by 24.9% overall under DPIE's proposal

DPIE proposed total BRC contributions of \$7.2 million⁷¹ (compared with \$5.8 million for the previous WAMC and Water NSW rural bulk water price reviews – a 24.9% increase).

Currently, 28.1% of BRC contributions are recovered from the WAMC determination and 71.9% from the Water NSW rural bulk water determination. This allocation is based on historical natural resource management and river operations costs.⁷²

For the 2021 determination period, DPIE proposed revising this split (42.2% to WAMC and 57.8% to Water NSW rural bulk water) to reflect the BRC's forward work plan.

5.2.3 Stakeholders were concerned about efficiency of proposed cost increases

Several stakeholders were concerned about the magnitude of the proposed MDBA and BRC contributions.⁷³ They strongly supported improving DPIE's incentive to actively engage in negotiating these contributions, so only efficient costs are passed onto water customers.⁷⁴ Water NSW considered this engagement is already occurring.⁷⁵

In particular, some stakeholders considered there should be greater transparency and efficiency requirements for MDBA contributions. They questioned the justification for MDBA charges and the efficiency of the MDBA's operations, and urged IPART to scrutinise these costs.⁷⁶

As outlined below, we examined the efficiency of these costs. We also reviewed the method for allocating these costs between the WAMC and Water NSW rural bulk water reviews. We were assisted in these tasks by our consultant, Atkins.

^a The MDBA stated its program costs were not proposed to increase. Rather, the NSW Government was proposing to assign a greater proportion of its contribution to the MDBA program to water users compared to past reviews (MDBA, Submission to IPART's Draft Report for the Water NSW rural bulk water review, April 2021, p 1).

5.3 We made efficiency adjustments to MDBA and BRC costs

Our decisions allowed for:

- Total MDBA costs of \$117.6 million for the 2021 determination period. This is \$9.2 million (7.3%) lower than DPIE proposed for the WAMC and Water NSW price reviews.
- Total BRC costs of \$7.0 million for the 2021 determination period. This is \$0.2 million (2.5%) lower than DPIE proposed for the WAMC and Water NSW price reviews.

5.3.1 We reduced proposed MDBA costs by 7.3%

In our previous WAMC price review, we expressed concerns about the transparency and efficiency of the MDBA's operations. For example, we noted the MDBA's activities may not have been subject to a sufficient level of independent review to ensure its costs were efficient.⁷⁷

In its proposal, DPIE/NRAR highlighted that the MDBA had subsequently implemented several independent review and transparency measures.⁷⁸ For example, new projects are subject to cost-benefit analysis. Further, the Commonwealth Government has committed to undertaking triennial independent reviews of the MDBA's River Murray Operations costs to provide greater transparency and assure water users that expenditure is reasonable.

We recognise improvements have been made in this area. However, we consider there is still scope to deliver efficiency savings. As such, we accepted Atkins' recommended adjustments, including:

- **Scope adjustments** of \$3.7 million, to remove MDBA corporate overheads from Water NSW MDBA costs. DPIE confirmed that corporate MDBA costs should be recovered through the government share, and not through either WAMC or Water NSW prices to customers.⁷⁹
- **Catch-up efficiency adjustments** of 1.1% per year cumulative, totalling \$3.4 million in efficiency savings over the 2021 determination period.⁸⁰
- **Continuing efficiency adjustments** of 0.7% per year cumulative, totalling \$2.2 million in efficiency savings over the 2021 determination period.⁸¹

The catch-up and continuing efficiency adjustments are consistent with those we applied to WAMC expenditure in this review, as well as Water NSW's expenditure in the concurrent rural bulk water review.

Public Interest Advocacy Centre Limited (PIAC) supported our adjustments to MDBA costs in its submission to our Draft Report for the Water NSW rural bulk water review, noting they would help facilitate greater efficiency in the recovery of costs for water services.⁸² Coleambally Irrigation Co-operative Limited also supported catch-up and continuing efficiency adjustments being applied to MDBA costs.⁸³ However, Murray Irrigation Limited considered IPART had only applied modest 'efficiency dividends' to the MDBA's operations.⁸⁴

In its submission to our Draft Report for the Water NSW rural bulk water review, the MDBA raised the following main objections to the efficiency adjustments:

- It submitted it was unclear how Atkins had given consideration to the findings of a previous independent review into efficiency improvements for River Murray Operations when recommending additional generic efficiency requirements.
- It was concerned that further untargeted reductions in expenditure would lead to limitations to service delivery and increased risk of a service failure.
- It questioned the utility of a 'continuing efficiency' at the frontier without information on a comparable frontier company.⁸⁵

We asked Atkins to review the MDBA's submission. Atkins noted the previous independent review related to actual costs rather than forward looking expenditure (which was the focus of Atkins' recommendations). Further, it considered its recommended efficiency adjustments were modest and proportionate to the control the MDBA had over its costs. Finally, while it acknowledged the lack of comparator organisations for the MDBA, the concept of frontier efficiency encourages new innovations, ways of working and a drive towards efficient outcomes.⁸⁶ It therefore maintained its recommended efficiency adjustments, and our decision is consistent with these adjustments.

5.3.2 We reduced proposed BRC costs by 2.5%

Atkins recommended several adjustments, which we accepted. These involve:

- **Scope adjustments** comprising:
 - A water infrastructure adjustment (-\$1.2 million): The BRC does not have a formalised agreement in place for the operation and maintenance works carried out by Sunwater. This adjustment aligns expenditure with the BRC's historical operation and maintenance costs (i.e. before Sunwater applied a significant risk premium to these costs).
 - A resource management adjustment (+\$0.2 million). BRC's costs appeared to be going down. However, this was due to problems with its accruals accounting and late invoicing by Water NSW. This adjustment means budgets are based on actual costs including accruals.
 - An Annuity Fund Contribution adjustment (-\$0.3 million). We netted off this contribution from operating expenditure as it is linked to capital expenditure. We have made a separate capital expenditure allowance for the BRC.⁸⁷
- **Catch-up efficiency adjustments** of 1.1% per year cumulative, with efficiency savings totalling \$0.2 million for operating expenditure and \$0.1 million for capital expenditure over the 2021 determination period.⁸⁸
- **Continuing efficiency adjustments** of 0.7% per year cumulative, with efficiency savings totalling \$0.1 million for operating expenditure and \$0.1 million for capital expenditure over the 2021 determination period.⁸⁹

PIAC supported our efficiency adjustments in its submission to our Draft Report for the Water NSW rural bulk water review.⁹⁰ However, the BRC considered the catch-up and continuing efficiency adjustments may be challenging to achieve during the determination period, given the governance improvement program it had recently undertaken.⁹¹

In its submission to our Draft Report, the BRC also partly agreed with our views on the efficiency of charges under Sunwater's service contract. However, it considered a material component of the increase was justified, due to changes in approach to risk and insurances. Therefore, it disagreed with our decision to align Sunwater's costs with historical expenditure.⁹²

After considering the BRC's submission, we have decided to maintain our draft decision on its efficiency adjustments. The BRC did not provide any new information relating to how much of the additional costs related to Sunwater contract negotiations and how much the BRC considered to be unjustified. Atkins also reviewed the BRC submission and maintained its recommended efficiency adjustments.⁹³

5.3.3 MDBA and BRC operations could be more efficient

Atkins identified several ways the MDBA and BRC could improve their processes, which would bring them closer to how an efficient agency operates (Box 5.1).

Box 5.1 MDBA and BRC catch-up efficiencies

Decision making: Hardwire justification and timing challenge into requests to State Contracting Authorities and MDBA/BRC decision making.

Reporting activities and expenditure: Enhance reporting of activities and expenditure from State Contracting Authorities.

Outputs and outcomes: Put in place a benefits realisation process from definition to tracking.

Incentives: Ensure efficiency is a key metric for MDBA management. Ensure BRC management drive permeates governance processes. Consider measures such as delegated management contracts with State Contracting Authorities to formalise requirements and put in place performance incentives.

Multi-year planning: Create more detailed budget projections and formalise multi-year budget agreements, with firmer commitments for some elements where this will aid efficiency and effectiveness.

Source: Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, pp 9–10, 13–14.

Atkins found:

- Efficiency was not a key focus of the MDBA. The BRC was in a similar situation before the recent change in its management, but this is now changing.
- There were limited incentives for the MDBA or BRC to pursue efficiencies, with no entity clearly accountable for efficiency.
- While MDBA has strengthened prioritising investments, the justification framework remained weak.⁹⁴

Adopting catch-up efficiencies of the type outlined in Box 5.1 would assist the MDBA and BRC address these concerns.

5.4 We changed the allocation of MDBA and BRC costs

Our main change to DPIE's proposed allocation of costs between the WAMC and Water NSW rural bulk water determinations involved the MDBA's SIS.^b

5.4.1 We have shifted the MDBA's SIS costs from Water NSW to WAMC

In the previous determination period, SIS costs were borne by users in the WAMC determination. In its pricing proposal, DPIE has instead allocated these costs (\$13.1 million)⁹⁵ to Water NSW's Murray and Murrumbidgee valleys. We consider these costs should remain with WAMC.

- The SIS activity relates to water resource management, which is a WAMC monopoly service, rather than Water NSW's bulk water storage and delivery services.
- The prices for Water NSW's rural bulk water services apply only to regulated river users. However, Atkins found that salinity issues were not just caused by regulated river licence holders. Rather, salinity was the result of basin-wide land use, drainage and water abstraction effects.⁹⁶
- Both regulated and unregulated river users across the entire Murray–Darling Basin contribute to high salinity, so regulated river licence holders should not bear all the cost of the SIS. Rather, the SIS's efficient costs should be added to WAMC and applied to all regulated and unregulated river management costs in the Murray–Darling Basin (Box 5.2).

PIAC supported our allocation of costs across the Water NSW and WAMC determinations.⁹⁷ The Commonwealth Environmental Water Holder and Coleambally Irrigation Co-operative Limited also supported the decision to move SIS costs to WAMC.⁹⁸

Murray Valley Private Diverters disagreed that irrigation itself was by far the dominant driver of salinity in the Murray–Darling Basin. It considered salinity investments, land management and new modelling had significantly changed predicted salinity risks.⁹⁹ The driver of salinity costs was also discussed at the public forum, where it was outlined that these costs are allocated 80% to users and 20% to government.¹⁰⁰ At this stage we have not been provided with evidence to change this cost share.

^b The SIS is a MDBA program that aims to intercept high salinity groundwater before it reaches river systems. Bores are constructed in the Murray valley to capture groundwater, which is pumped to evaporation beds.

Box 5.2 Allocating the costs of managing salinity

In allocating the MDBA costs of the Salt Interception Scheme (SIS), we considered what factors were driving the need for the scheme.

Broadly, salinity in waterways is caused by the mobilisation of salts that are (in the undisturbed natural environment) bound to soils. Salt mobilisation is driven by 2 factors:

1. **Land clearing generally, including for agriculture:** Land clearing removes natural root systems that access groundwater, helping to keep it in a relatively steady state. This causes the groundwater table to rise and dissolve salts in the soil. Salinity costs caused by land clearing should *not* be allocated to water licence holders, because it is not the use or holding of a water licence that is causing the costs to be incurred
2. **Irrigation specifically:** Irrigation removes water from rivers and applies it on productive land. This water percolates through soils and mobilises salts, and can increase groundwater flow rates and salt loads into rivers. Salinity costs caused by irrigation should be allocated primarily to licence holders, because water use is the primary driver of salinity and hence costs.

DPIE confirmed irrigation itself is by far the dominant driver of salinity in the Murray Darling Basin. However, it also confirmed that groundwater licence holders are unlikely to contribute to the problem, so we have ring-fenced them from these SIS costs.

Table 5.3 sets out DPIE's proposed allocation of MDBA contributions between the WAMC and Water NSW rural bulk water determinations, and our allocation after shifting the SIS costs.

Table 5.3 Allocation of MDBA contributions

	DPIE's proposed allocation	IPART's allocation
WAMC determination	18.0%	29.2%
Water NSW rural bulk water determination	82.0%	70.8%

Source: IPART calculations and Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, p 64 and IPART analysis.

5.4.2 Our scope adjustments to BRC's expenditure allocated costs differently

In allocating its proposed BRC costs between Water NSW and WAMC, DPIE used the following method:

1. Water infrastructure operational costs allocated 100% to Water NSW rural bulk water.
2. Water resource management operational costs allocated 100% to WAMC
3. BRC corporate costs then apportioned based on the relative costs from steps 1 and 2 above.¹⁰¹

As set out in section 5.3, we adjusted propose expenditure on water infrastructure services (reducing it by \$1.2 million). We also increased resource management costs by \$0.2 million. These adjustments shifted the allocation of costs between WAMC and Water NSW rural bulk water (Table 5.4).

We used these proportions to allocate both efficient operating costs and efficient capital costs.

Table 5.4 Allocation of BRC contributions

	DPIE's proposed allocation	IPART's allocation
WAMC determination	42.2%	56.4%
Water NSW rural bulk water determination	57.8%	43.6%

Source: IPART calculations and Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, p 82.

5.5 We applied a building block approach to set WAMC's MDBA and BRC costs

Our decision is:



11. To use the building block approach to set efficient Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission costs.

Sections 5.3 and 5.4 outline how we adjusted the total MDBA and BRC costs proposed by DPIE:

- firstly, we reduced these costs to an efficient level
- secondly, we allocated costs between the WAMC and Water NSW rural bulk water determinations based on which water users are creating the need for these costs to be incurred.

This section explains how we have applied the building block approach to WAMC's share of these efficient MDBA and BRC costs. We consider there are efficiency and equity benefits in using the building block approach. Further, it means the approach we use in setting MDBA and BRC charges is brought into line with our treatment of WAMC's core costs.^c

In previous WAMC and Water NSW determinations, we included all efficient MDBA and BRC expenditure in prices in the year that expenditure occurs.^d The amounts were typically based on forecasts of NSW's annual contributions to the MDBA and BRC respectively.¹⁰² We usually applied efficiency adjustments to these forecasts to ensure water users only pay for MDBA and BRC expenditure that is efficient and directly related to the water management or rural bulk water services delivered.

^c We also applied the building block approach to Water NSW rural bulk water's MDBA and BRC costs in its concurrent review.

^d In 2014, the ACCC included MDBA and BRC costs as required by a government direction to the then State Water Corporation.

Because payments were passed through in the year they occurred, 100% of all efficient MDBA and BRC costs have been effectively treated as operating expenditure. However, expenditure by both the MDBA and BRC includes both operating expenditure and capital expenditure.

Murrumbidgee Private Irrigators Inc and Murrumbidgee Groundwater Inc were concerned about the impact on future determinations from using the building block approach for capital costs.¹⁰³ PIAC and Coleambally Irrigation Co-operative Limited supported applying the building block approach to MDBA and BRC costs. PIAC considered this approach should facilitate greater transparency, consistency and efficiency in the recovery of costs for water services.¹⁰⁴

Water NSW submitted that the building block approach would create cashflow issues for the NSW Government.¹⁰⁵ We consider that while the cashflow implications for the NSW Government are different under the building block approach, the arrangement is no different to the NSW Government funding the capital itself. In particular, where the NSW Government holds its capital investment relating to MDBA and BRC activities, it is compensated through the allowance for return on assets (i.e. weighted average cost of capital (WACC) x RAB).

5.5.1 Capital expenditure should be recovered over its useful life

Our previous approach to including MDBA and BRC costs in prices did not recognise how and when capital expenditure is most efficiently recovered from water users. Including capital expenditure in prices in the year that expenditure occurs is potentially inefficient and inequitable.

We consider that capital expenditure should be recovered over the useful life of the assets it creates. This approach ensures water users who receive a service from an asset over time contribute to its cost. Under our standard building block approach set out in Chapter 2, efficient:

- operating expenditure is passed through in the year it occurs, and
- capital expenditure is added to the RAB, and we include allowances for depreciation and return on assets for the value of that RAB.

This approach ensures water users only pay for their share of an asset that may deliver services over a long period, and the utility is compensated for:

- its initial investment (through a depreciation allowance for assets in the RAB), and
- the economic cost of holding those assets over time (through the allowance for a return on assets, calculated as WACC x RAB).^e

^e The WACC and RAB are discussed in chapter 6.

5.5.2 We set efficient capital and operating expenditure for MDBA costs

Our decision is:



12. To set WAMC's operating and capital expenditure for Murray–Darling Basin Authority costs as shown in Table 5.5.

Table 5.5 sets out our decision on WAMC's efficient MDBA operating and capital expenditure over the 2021 determination period. WAMC's share of efficient MDBA costs is allocated entirely to operating expenditure, consistent with Atkins' recommendation.

We consider water management activities undertaken by the MDBA do not require investment in assets and infrastructure. Asset creation and renewal activities relate to River Murray Operations, which are allocated to Water NSW's rural bulk water services (not to WAMC's water management services).¹⁰⁶

Table 5.5 Decision on WAMC's efficient MDBA expenditure for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
Operating expenditure	8.7	8.7	8.6	8.4	34.4
Capital expenditure	0.0	0.0	0.0	0.0	0.0
Total MDBA costs	8.7	8.7	8.6	8.4	34.4

Note: Both the user share and government share of efficient costs are included. Only the user share of costs is included when setting prices. Our decisions on the user share of costs are discussed in Chapter 7.

Source: Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, p 64.

5.5.3 We set efficient capital and operating expenditure for BRC costs

Our decision is:



13. To set WAMC's operating and capital expenditure for Dumaresq–Barwon Border Rivers Commission costs as shown in Table 5.6.

Table 5.6 sets out our decision on WAMC's efficient BRC operating and capital expenditure over the 2021 determination period.

Table 5.6 Decision on WAMC's efficient BRC expenditure for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
Operating expenditure	0.8	0.8	0.8	0.8	3.2
Capital expenditure	0.2	0.1	0.3	0.1	0.8
Total BRC	1.0	0.9	1.1	0.9	4.0

Note: Totals may not add due to rounding. Both the user share and government share of efficient costs are included. Only the user share of costs is included when setting prices. Our decisions on the user share of costs are discussed in Chapter 7.

Source: Atkins, *MDBA/BRC Expenditure Review - Final Report for IPART*, March 2021, pp 85, 87.

To estimate the capital expenditure component of BRC's efficient costs, Atkins reviewed BRC's renewal and enhancement budget over the determination period.

- The BRC budgeted for around \$3.0 million of renewal and enhancement expenditure from 2021-22 to 2024-25, to be funded equally by NSW and Queensland.
- After applying the catch-up and scope efficiency adjustments outlined in section 5.3 to the NSW portion, this equates to \$1.4 million in capital expenditure to be shared between WAMC and Water NSW rural bulk water.¹⁰⁷

Our decision is consistent with the recommendations made by Atkins. Further, as outlined in section 5.4, we have allocated this capital expenditure:

- 43.6% to Water NSW, or \$0.6 million
- 56.4% to WAMC, or \$0.8 million.

In the short run, using the building block approach may put downward pressure on bills for some water sources. As capital expenditure is recovered more slowly over time, prices needed to recover those costs are also spread over future years.

However, these relative savings in bills would reduce in the long-term as the RAB increases through the creation and addition of more assets. The capital cost building blocks (allowances for depreciation and return on assets) will increase as a result.

5.5.4 We set the opening MDBA and BRC RABs to zero

Our decision is:



14. To set WAMC's opening regulatory asset base for Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission costs at 1 July 2021 to zero.

The RAB represents the economic value of assets held by a utility. Each year, capital expenditure is added to the RAB, and depreciation and capital contributions^f are deducted.

Historically, all NSW's share of MDBA and BRC expenditure has been funded directly through annual payments. Some of this expenditure has been capital expenditure used to build assets and infrastructure. These payments have been passed directly through to water users, or paid for by the NSW Government through its share of these costs. As such, we consider that the existing MDBA and BRC assets used to deliver services to water users for WAMC and Water NSW rural bulk water's services have already been fully paid for.

^f Capital contributions include grants and other contributions that directly fund new assets. If an asset is funded, or partially funded, by direct cash contributions, it does not need to be recovered through prices because there are no further costs incurred by a utility.

In the past, we have set opening RABs to zero for the purpose of setting prices. In our 2011 WAMC Determination, we set the opening RAB to zero for its core costs.¹⁰⁸ Because we are treating MDBA and BRC capital expenditure differently from operating expenditure for the first time, this will change from 2021–22. This means that all efficient MDBA and BRC capital expenditure will enter the RAB from 2021–22 onwards.⁹

With an opening RAB of zero and our decision on forecast efficient MDBA and BRC capital expenditure set out in Table 5.5 and Table 5.6, the annual MDBA and BRC RAB values over the 2021 determination period are set out in Table 5.7.

Table 5.7 WAMC's MDBA and BRC RAB values at 1 July for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25
MDBA RAB	0.0	0.0	0.0	0.0
BRC RAB	0.0	0.2	0.3	0.6

Note: RAB balance = Previous year's RAB balance plus capital expenditure less depreciation, disposals and capital contributions.

5.5.5 Total building block costs for MDBA and BRC expenditure are \$38.1 million

As set out in Chapter 2, the notional revenue requirement (NRR) derived from the building block approach represents the total efficient costs of delivering services. They include allowances for:

- operating expenditure
- regulatory depreciation (RAB/average life of assets in the RAB)
- return on capital (WACC x RAB)
- tax
- working capital.

Table 5.8 below shows the NRR for WAMC's efficient MDBA and BRC activities over the 2021 determination period arising from our decisions. These amounts have changed only marginally since our draft decision due to our updated WACC.

Table 5.8 Decision on WAMC's notional revenue requirement for MDBA and BRC costs over the 2021 determination period (\$ millions, \$2020–21)

Building block	2021–22	2022–23	2023–24	2024–25	Total
Operating expenditure	9.5	9.5	9.3	9.2	37.5
Return on assets	0.0	0.0	0.0	0.0	0.0
Regulatory depreciation	0.0	0.0	0.1	0.1	0.2
Tax allowance	0.0	0.0	0.0	0.0	0.0
Working capital allowance	0.1	0.1	0.1	0.1	0.3
Total	9.6	9.6	9.5	9.4	38.1

Source: IPART analysis.

⁹ We are setting Water NSW's bulk water prices in Murray–Darling Basin valleys for this determination under the WCIR. The WCIR limit our scope to make ex-post efficiency adjustments to capital expenditure that enters the RAB.

5.5.6 Better clarity and quality of data will enhance transparency

A number of stakeholders were concerned about the efficiency and transparency of MDBA and BRC costs.¹⁰⁹

We consider that our decisions deliver efficiency benefits to Water NSW and its customers. Creating a RAB and recovering capital costs over the useful life of assets means that, over time, MDBA and BRC-related prices will better reflect the efficient costs and timing of expenditure. Customers benefit from the equitable sharing of asset costs through time, and greater clarity on the types of expenditure undertaken by the MDBA and BRC

Further, including a RAB and sharing capital costs over time may provide a more flexible regulatory mechanism for including large capital projects undertaken by the MDBA and BRC. When capital costs need to be recovered in the year they occur, the prohibitive costs (and impact on customers) of efficient, long-term but expensive assets may make them unfeasible. However, when costs are recovered over time, and the utility or agency investing in large projects is compensated for the holding cost of those investments, such projects (if any) may be more likely to be undertaken

Nonetheless, we consider more specific data on projects and programs that deliver services to water users by the MDBA and BRC would be beneficial. This will allow a greater level of precision in assessing both the efficient levels of expenditure and the services delivered to users. This would also improve the transparency to customers of the programs, projects and assets funded through WAMC's MDBA and BRC-related charges.

Chapter 6 »

Other building block costs and
notional revenue requirement

06

Summary of our decisions for other building block costs

The total notional revenue requirement is \$290.4 million, \$56.0 million (16.2%) less than WAMC's proposal.

The difference is mainly due to us reducing WAMC's proposed operating expenditure to an efficient level.

We increased the allowance for historical capital expenditure by \$7.4 million compared with our draft decision. We included the full corporate capital expenditure proposed by WAMC due to regulatory constraints.

To set water management prices, we first determine the efficient costs that WAMC should incur to efficiently deliver its water management services, including costs of interjurisdictional agencies such as MDBA and BRC (Chapter 5).

The notional revenue requirement (NRR) represents our view of the total efficient costs of providing water management services in each year of the determination period.^a As outlined in Chapter 2 and Appendix B, we use a building block approach to calculate the total NRR.

The building blocks making up the total NRR are:

- WAMC's operating expenditure allowance (Chapter 3)
- MBDA and BRC expenditure allocated to WAMC and its water users (Chapter 5)
- other building blocks (this chapter) including WAMC's return on assets, regulatory depreciation, working capital allowance and tax allowance.

The sections below summarise our decisions on the total NRR and discuss other WAMC building blocks not covered in previous chapters of this report.

6.1 The total NRR is \$290.4 million over the next 4 years

Our decision is:



15. To set a total notional revenue requirement of \$290.4 million as shown in Table 6.1.

The total NRR is \$290.4 million over 4 years, as set out in Table 6.1. The total NRR is \$56.0 million (16.2%) less than WAMC's proposal over the 4 years of the 2021 determination period.

^a WAMC also provides consent transaction services and water take measurement and reading services (or metering services). These services are not included in water management services. We set efficient costs and charges for these services separately (discussed in Chapters 12 to 14).

Table 6.1 Decision on total notional revenue requirement for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC's proposal					
Total NRR	85.1	87.2	86.5	87.6	346.3
IPART decision					
Operating allowance	54.9	54.8	52.6	52.0	214.3
Return on assets	1.4	1.5	1.6	1.7	6.2
Regulatory depreciation	5.2	6.1	7.1	7.9	26.3
Working capital allowance	0.8	0.8	0.8	0.9	3.4
Tax allowance	0.4	0.5	0.5	0.6	2.0
WAMC NRR	62.8	63.8	62.6	63.0	252.3
MDBA NRR	8.8	8.8	8.6	8.5	34.6
BRC NRR	0.8	0.9	0.9	0.9	3.5
Total NRR	72.4	73.4	72.1	72.4	290.4
Difference	-12.7	-13.7	-14.4	-15.2	-56.0
Difference (%)	-14.9%	-15.8%	-16.6%	-17.3%	-16.2%

Note: Totals may not add due to rounding. In this table, the regulatory depreciation is a mid-year figure (i.e. the RAB roll-forward depreciation figure is discounted by half a year of WACC).

Source: IPART analysis.

6.2 WAMC's return on assets is \$6.2 million

Our decision is:



16. To calculate the return on assets for WAMC's water management services:
 - using an opening regulatory asset base of \$43.4 million for 2021–22, and the RAB for each year as shown in Table 6.3
 - using our standard weighted average cost of capital (WACC) methodology, which produces a real post-tax WACC of 3.0% as outlined in Appendix C
 - applying a true-up of annual WACC adjustments in the next determination
 - using a sampling date of 31 March 2021 for market observations as outlined in Appendix C.

We calculate the return on assets by multiplying the value of the regulatory asset base (RAB) over the determination period by an efficient rate of return. As for previous reviews, we determined the rate of return using an estimate of the weighted average cost of capital (WACC).

Our final decisions resulted in a lower return on assets than WAMC proposed (Table 6.2), in part due to our final decision that resulted in a lower RAB (Table 6.3), but mainly due to us using a lower WACC.

Table 6.2 Decision on return on assets for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposal	1.5	1.7	1.8	1.9	6.9
IPART decision	1.4	1.5	1.6	1.7	6.2
Difference	–0.1	–0.1	–0.2	–0.2	–0.7
Difference (%)	–8.2%	–8.5%	–10.1%	–11.4%	–9.6%

Note: Totals may not add due to rounding.
Source: IPART analysis.

6.2.1 The opening RAB for the 2021 determination period is \$43.4 million

The RAB represents the value of WAMC's assets on which we consider it should earn a return on capital and an allowance for regulatory depreciation. Our RAB roll-forward calculations for the 2016 and 2021 determination periods are shown in Tables 6.3 and 6.4.

Table 6.3 Decision on regulatory asset base roll-forward for 2015–16 and the 2016 determination period (\$ millions, \$ nominal)

	2015–16	2016–17	2017–18	2018–19	2019–20	2020–21
Opening RAB	5.3	6.2	10.2	14.2	19.9	27.9
Plus: Efficient capital expenditure	1.2	4.4	4.7	6.6	9.5	15.8
Less: Asset disposals	0.0	0.0	0.1	0.1	0.1	0.1
Less: Regulatory depreciation	0.3	0.6	0.8	1.1	1.4	1.4
Plus: Indexation	0.1	0.2	0.3	0.3	–0.1	1.1
Closing RAB	6.2	10.2	14.2	19.9	27.9	43.4
WAMC proposal	7.2	11.1	15.2	21.1	28.6	44.0
Difference	–1.0	–0.8	–1.0	–1.2	–0.7	–0.6
Difference (%)	–13.9%	–7.6%	–6.4%	–5.7%	–2.5%	–1.3%

Note: Totals may not add due to rounding.
Source: IPART analysis.

Table 6.4 Decision on regulatory asset base roll-forward for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25
Opening RAB	43.4	47.0	49.8	52.4
Plus: Efficient capital expenditure	9.0	9.2	9.8	7.5
Less: Asset disposals	0.1	0.1	0.1	0.1
Less: Regulatory depreciation	5.3	6.2	7.2	8.0
Closing RAB	47.0	49.8	52.4	51.7
WAMC proposal	47.7	50.8	54.9	54.2
Difference	–0.7	–0.9	–2.5	–2.5
Difference (%)	–1.5%	–1.9%	–4.6%	–4.5%

Note: In this table, regulatory depreciation is an end-of-year figure. Total may not add due to rounding.
Source: IPART analysis.

The opening RAB for the 2021 determination period is \$43.4 million – an increase of \$6.3 million from our draft decision. We decided to capture the full corporate capital expenditure in the historical RAB (that is, not to phase in this expenditure) after considering the material constraints in Water NSW's regulatory framework highlighted in its submission.^b

We continued our approach of using a single RAB. We did not accept Water NSW's proposal to have multiple RABs.^c Water NSW did not provide sufficient information about how it proposed to accurately allocate multiple RABs across water sources.¹¹⁰

6.2.2 We set the WACC at 3.0%

Our decision is to use a real post-tax WACC of 3.0%. WAMC proposed a WACC of 3.2%.¹¹¹ We updated the WACC from 2.8% in the Draft Report with 31 March 2021 market parameters. Appendix C sets out the parameters that we used to calculate our WACC and reasons for not sampling the market parameters at a later date.

6.2.3 Our inflation expectations forecast approach is unchanged

Our WACC methodology involves first calculating a nominal WACC based on current and long-term market parameters measured in nominal terms. We then subtract our best estimate of inflation expectations to generate a real WACC, which we use to set prices over the determination period. All else being equal, a lower estimate of inflation expectations results in a higher real WACC.

Our standard approach to estimating inflation expectations is taking the geometric mean of the RBA's 1-year ahead inflation forecast and the midpoint of the Reserve Bank of Australia's (RBA) target range (2.5%) for each other year of the determination.

In its submission to our Draft Report, Water NSW disagreed with our approach of estimating forecast inflation expectations. It suggested we use a glide path approach to estimating inflation expectations¹¹² because:

- The current inflation expectations over the 2021 determination period are significantly lower than the forecasts produced by our inflation forecasting approach.
- Other Australian regulators have changed their approach of estimating inflation expectations to recognise the current low inflation environment. For example, Essential Services Commission of South Australia, Australian Energy Regulator and Independent Competition and Regulatory Commission are using a glide path approach to the midpoint of the RBA's inflation target over a period.

^b See chapter 4 for our decisions on historical capital expenditure.

^c Water NSW's pricing proposal proposed using 3 RABs – a corporate RAB, a water monitoring RAB and a legacy RAB.

We maintained our current approach to estimating inflation expectations. We would need strong and compelling evidence to change how we estimate a single WACC parameter in isolation, because the financial market data underlying many elements of the WACC are interrelated. It is more appropriate to consider the WACC methodology in a holistic and internally consistent way as part of our periodic WACC reviews. We intend to review our WACC method before we review these prices again in 2026.

6.2.4 We will undertake the cost of debt true-up at the next price review

We also decided to apply a true-up of annual WACC adjustments in the 2021 Determination. In our 2018 review of the WACC methodology, we decided at each price review we would consider whether to:

- update prices annually to reflect the updates in the WACC annually, or
- use a regulatory true-up at the next period, which we would pass through to prices at the beginning of the next period.¹¹³

These options are equivalent in present value terms to customers and WAMC.

In its submission to our Draft Report, Water NSW proposed adjusting the cost of debt annually to:

- mitigate risk of large price movements between regulatory periods
- benefit customers by passing on a lower cost of debt straightaway.¹¹⁴

We decided to undertake the regulatory true-up at the next price review. This approach provides greater certainty to water users about their prices over the determination period. That is, changes in prices would be impacted by inflation only, rather than also being impacted by annual changes in the cost of debt. Further, provided the true-up is smoothed over the next determination period, we do not expect price shocks would be any more likely in the next determination period compared with an annual update.

6.3 WAMC's regulatory depreciation is \$26.3 million

Our decision is:



17. To calculate the regulatory depreciation for WAMC's water management services using:
 - the asset lives set out in Table 6.5 for depreciating WAMC's regulatory asset base
 - the straight-line depreciation method.

Regulatory depreciation aims to recover the cost of an asset over its useful life to ensure customers benefitting from an asset also pay for it. To calculate the regulatory depreciation, we typically divide the value of assets by their expected lives. For simplicity, we did this at an aggregated level (Table 6.5).

Table 6.5 Decision on asset lives for depreciating WAMC's regulatory asset base for the 2021 regulatory period

Asset category	Asset life
Infrastructure	20 years
Laboratory and specialised equipment (including water monitoring instruments)	7 years
Information technology systems	7 years
Vehicles	5 years
Buildings	60 years
Office equipment	10 years
Plant and machinery	25 years

Source: Cardno, *WAMC Expenditure Review - Final Report for IPART*, March 2021, p 205.

6.4 WAMC's working capital allowance is \$3.4 million

Our decision is:



18. To calculate the working capital allowance for WAMC's water management services using WAMC's proposed parameters:

- quarterly billing cycle for regulated water sources
- annual billing cycle for unregulated water sources and groundwater
- 30 days of delay between reading the meter and receiving payment
- 30 days of payable
- zero inventory.

In addition, to have zero prepayments in each year of the determination period.

The working capital allowance ensures WAMC recovers the costs it incurs due to the time delay between providing a service and receiving the money for it (that is, when bills are paid).

We applied our standard methodology to set the working capital allowance the same way as in our draft decision. More information on our standard approach (including an explanation of the nominal post-tax WACC) can be found in our [Working Capital Allowance Policy Paper](#) on our website.

The total working capital allowance of \$3.4 million is higher than WAMC's proposal, noting Water NSW is the only WAMC agency that provided an estimate of working capital allowance in its pricing proposal (Table 6.6).

Table 6.6 Decision on working capital allowance for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposal	0.5	0.5	0.6	0.6	2.2
IPART decision	0.8	0.8	0.8	0.9	3.4
Difference	0.3	0.3	0.3	0.3	1.1
Difference (%)	64.1%	55.9%	48.3%	42.1%	52.0%

Note: Totals may not add due to rounding.
Source: IPART analysis.

6.5 WAMC's tax allowance is \$2.0 million

Our decision is:



19. To calculate the tax allowance for WAMC's water management services using:
- a tax rate of 30%
 - IPART's standard methodology.

We include an explicit allowance for tax, consistent with our use of a post-tax WACC to estimate the allowance for a return on assets in the revenue requirement (Table 6.7). We applied our standard methodology to set the tax allowance the same way as in our draft decision.

The tax allowance is significantly lower than Water NSW proposed, because the capital expenditure allowed over the forecast period is significantly less than proposed. As a result, our estimate of taxable income is growing at a slower rate than proposed.

Table 6.7 Decision on tax allowance for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
WAMC proposal	0.3	0.5	0.8	1.1	2.8
IPART decision	0.4	0.5	0.5	0.6	2.0
Difference	0.2	–0.0	–0.3	–0.6	–0.7
Difference (%)	66.0%	–8.6%	–37.7%	–49.4%	–26.7%

Note: Totals may not add due to rounding.
Source: IPART analysis.

Chapter 7 »

Costs shares and cost drivers

07

Summary of our decisions for cost shares and cost drivers

We generally maintained the cost shares in our 2019 review of rural water cost shares

The user share of WAMC's efficient costs is \$226.2 million, or 77.9% of the notional revenue requirement, over the 2021 determination period.

Our decision is consistent with cost shares proposed by DPIE and NRAR, except for:

- W06-05 regional planning and management strategies, where we decreased the user share from 70% to 60%
- W04-01 surface water modelling, where we decreased the user share from 80% to 70%.

We are not explicitly changing the cost share for W08-03 compliance management, because water users are still the primary driver of this activity. However, we recognise in the short term NRAR needs to incur costs above those of an organisation with a mature compliance function, and the NSW Government should fund these costs.

We largely accepted WAMC's proposed cost drivers for allocating costs across water sources

The cost driver for several activities will change from water take to water entitlement. We consider this cost driver is more cost reflective, less volatile and simpler to administer.

As a result, costs shifted from groundwater and unregulated rivers to regulated rivers compared with the 2016 Determination.

We use cost shares to allocate WAMC's efficient costs between water users and the NSW Government (on behalf of other users such as recreational users and the broader community).

We then use cost drivers to allocate the user share of WAMC's efficient costs to water sources, defined as the combination of water type (i.e. regulated rivers, unregulated rivers and groundwater) and geographic location (i.e. valleys and areas).

This chapter sets out our decisions on WAMC's cost shares and cost drivers.

7.1 We generally maintained cost shares

Our decision is:



20. To generally set cost shares consistent with our 2019 cost shares review and WAMC's proposal as shown in Table 7.2.
- The exceptions are for W06-05 regional planning and management strategies (user share will decrease from 70% to 60%) and W04-01 surface water modelling (user share will decrease from 80% to 70%).
 - This means the user share of WAMC's efficient costs is \$226.2 million, or 77.9% of the notional revenue requirement, over the 2021 determination period as shown in Table 7.1.

Table 7.1 Decision on user share of notional revenue requirement for the 2021 determination period (\$ millions, \$2020–21)

	2021–22	2022–23	2023–24	2024–25	Total
Operating allowance	42.6	42.6	41.4	41.1	167.7
Return on assets	1.1	1.2	1.3	1.4	4.9
Regulatory depreciation	3.9	4.6	5.4	6.1	19.9
Tax allowance	0.4	0.4	0.4	0.4	1.6
Working capital allowance	0.8	0.8	0.8	0.8	3.2
User share of WAMC NRR	48.7	49.6	49.3	49.8	197.3
User share of MDBA NRR	6.5	6.5	6.3	6.2	25.5
User share of BRC NRR	0.8	0.8	0.8	0.9	3.3
User share of total NRR	55.9	56.9	56.5	56.9	226.2
% of the total NRR	77.2%	77.5%	78.3%	78.6%	77.9%

Source: IPART analysis.

We comprehensively reviewed our rural water cost shares framework in 2019. In particular, we examined each of WAMC's 33 activities to understand who was creating the need for the activities (and therefore who should incur the costs). As a result, we revised the cost shares for several activities.¹¹⁵

DPIE and NRAR proposed cost shares consistent with the 2019 review.¹¹⁶ Water NSW's pricing proposal did not directly address this point.¹¹⁷

We asked Cardno to examine whether circumstances had changed to warrant us further adjusting the framework. It recommended maintaining all the 2019 cost shares, except for reducing the user shares for W06-05 regional planning and management strategies from 70% to 60% and W04-01 surface water modelling from 80% to 70%. Cardno also developed recommendations about user shares for W08-03 compliance management costs and Water NSW's W-codes.¹¹⁸

We made a decision consistent with Cardno's recommendations. We are generally maintaining the cost shares set by our 2019 review, with these exceptions:

- **Decreasing the user share for W06-05 regional planning and management strategies.** Water users are still the primary drivers for WAMC developing water management strategies. However, NSW Government policy changes mean WAMC is undertaking more high-level, strategic planning. As a result, the user share will decrease from 70% to 60%.
- **Decreasing the user share for W04-01 surface water modelling.** WAMC is undertaking additional work to support broader government priorities, including floodplain harvesting (which has a 0% user share) and regional planning and management strategies (where we have lowered the user share from 70% to 60%). We have therefore reduced the user share for W04-01 surface water modelling from 80% to 70%.
- **Making efficiency adjustments to W08-03 compliance management costs, rather than changing the user share.** Cardno identified efficiency concerns with compliance management costs.¹¹⁹ Instead of explicitly changing the cost share for this activity, we addressed these concerns through reducing NRAR's costs to an efficient level. We recognise NRAR needs to incur additional costs in the short term (and the NSW Government, rather than water users, should pay them). Our approach implicitly reduces the user share for this activity on a temporary basis.
- **Addressing Water NSW's allocation of costs to W-codes.** Water NSW did not adhere to the activity code framework we use to define WAMC's monopoly services (i.e. W-codes) and allocate costs to them. Instead, Water NSW proposed shifting from individual activity codes to service areas (which comprise aggregated activities). This approach affected user shares for water monitoring and corporate capital expenditure. As a result, Cardno developed user shares for these activities, which aim to align them with our 2019 review.

These decisions are discussed in further detail below. The only change to cost shares from our Draft Report is the decrease in user share for W04-01 surface water modelling.

7.1.1 We allocated costs to the party creating the need for them to be incurred

We typically allocate costs between water users and the NSW Government on the basis of who created the need for an activity (and its associated costs) to be incurred (Box 7.1).

Box 7.1 How do we determine who should pay WAMC's efficient costs?

We use the following funding hierarchy to determine who should pay WAMC's efficient costs:

1. Preferably, the party that creates the need to incur the cost should pay in the first instance.
2. If that is not possible, the party that benefits should pay.
3. Where it is not feasible to charge the above parties (for example, because of social welfare policy, public goods, externalities, or an administrative or legislative impracticality of charging), the NSW Government (taxpayers) should pay.

Source: IPART, *Rural Water Cost Shares*, Final Report, February 2019, p 23.

Stakeholders had mixed views on cost shares in their responses to our Issues Paper and Draft Report. One stakeholder supported the existing cost share ratios as fair and reasonable. However, several stakeholders disagreed with our approach, and thought user shares should be reconsidered given the magnitude of the proposed expenditure increases by WAMC.¹²⁰

We acknowledge these stakeholders' concerns. However, we have decided to continue allocating WAMC's efficient costs to those parties who are creating the need for it to incur the costs. This is a practical and transparent method for allocating WAMC's efficient costs between water users and the NSW Government (on behalf of other users and the broader community). It is also an efficient approach, as water users face the costs of WAMC managing water resources in response to their high consumptive use.

The NSW Irrigators' Council (NSWIC) stated, while water extracted by water users only represented a small proportion of total water usage, our method meant that most of WAMC's costs were being allocated to them. We should therefore develop new cost shares to take account of the relative proportion of total water extracted by water users compared to other users.¹²¹

This proposed approach focuses on allocating costs to the parties who are 'benefiting' from the water management system, for example those which have higher priority for water allocations. We consider it is more cost reflective (and therefore more equitable) for costs to be allocated to those who create the need to incur them, as occurs under our existing method.

Most of WAMC's activities, such as planning and managing water resources and issuing and protecting licences, are required since there is high consumptive use of water resources by water users.¹²² Therefore, the majority of costs should be allocated to water users, which is reflected by the cost shares in our framework.

Some stakeholders suggested cost shares should differ from the 2019 review

Several stakeholders objected to particular aspects of the cost shares framework, suggesting:

- The user share of costs should be lower due to concerns about costs or WAMC's performance.¹²³ For example, it should be zero for expenditure caused by WAMC's organisational restructuring.¹²⁴ Further, it should be reduced for MDBA costs, since water users do not have input into the MDBA joint projects and the complex governance framework leads to higher costs.¹²⁵
- The user share should also be lower for activities that are in the public interest, driven by wider community needs or have multiple objectives (e.g. environmental policies, planning). A lower user share would also maintain NRAR's independence.¹²⁶

We understand stakeholders' concerns about the magnitude of WAMC's proposed cost increases and it pursuing activities with several objectives. That is why we examined each activity to identify whether the cost shares should change from our 2019 review. Where they have not, we have addressed these concerns through other steps in our price determination process (rather than changing the cost shares):

- First, through establishing WAMC's efficient costs. As outlined in earlier chapters, we worked with our expenditure consultants to examine whether the cost increases were justified. We then apply cost shares to these efficient costs to determine the notional level of costs to be recovered from water users.
- Second, through setting prices to recover costs from water users. We considered what portion of water users' share of efficient costs they could afford to pay over this determination period, and phase in the increases to reflect this portion (Chapter 10).

Several stakeholders requested we alter cost shares to factor in climate change

The NSWIC suggested our cost shares framework needed to be reconsidered because it could not adequately accommodate the impacts of climate change. Its submission to our Issues Paper noted:

NSWIC believe that now the largest 'impactor' on waterways is climate change, and many of the services and new infrastructure is a result of preparing towns and river systems to be resilient to a drying climate. Compared to previous determinations, the impacts of climate change on waterways is more clearly evidenced, experienced and thus broadly accepted. It would be almost impossible, however, to develop a funding model based around this 'impactor' (unless from general revenue), and thus a reconsideration of the impactor-pays principle is required.¹²⁷

We consider there is adequate flexibility within our current cost shares framework to consider and account for the impacts of climate change (Box 7.2).

Box 7.2 Climate change under our cost shares framework

Our counterfactual starting point, which we use to anchor our cost shares framework, is a world without high consumptive use of water resources. That is, a world without the need for WAMC to manage NSW water resources.

We can apply our framework to this question in the following way:

- If costs associated with climate change would still need to be incurred in the absence of high consumptive use, then water users would not be the impactor of these costs.
- Alternatively, if costs need to be incurred to secure water use and entitlements for water users beyond our counterfactual starting point, then water users can be considered the impactors.

Regardless of the materiality, we consider there is merit in applying a principles based approach to considering who should pay, based on our cost shares framework. We consider costs associated with climate change would not be incurred in the absence of high consumptive use. Therefore, water users are the impactors.

In response to our Draft Report, several stakeholders stated that in drought, water users did not receive any extractive water. However, WAMC still incurred water management costs. Therefore, water users were not the impactors. Rather climate change (e.g., extreme weather/drought) was driving these costs.¹²⁸

We note that, even in the absence of extractive water due to drought, there is still a need for WAMC to plan and manage the water resource to ensure its long-term sustainability and to protect individual water entitlements. Therefore, WAMC's costs are largely fixed, independent of water delivered (at least in the short to medium term) and predominantly driven by water users.

Source: IPART, *Rural Water Cost Shares*, Final Report, February 2019, pp 24, 45.

We asked Cardno to consider whether there were sufficient grounds to adjust user shares for climate change costs. It found that the impact on WAMC's costs of climate change could only be seen in a handful of areas and these costs were very small compared with the overall costs for WAMC's services. Further, if climate change was an impactor, its impact was substantially smaller than the impacts of high consumptive water use.¹²⁹

We decided to maintain our approach and current cost share ratios:

- Costs related to climate change are unlikely to occur in the absence of high consumptive use of water resources. Therefore, we consider water users are primarily driving these costs.
- Our approach is consistent with our cost shares for changing environmental standards. That is, although these costs are related to external events, they are fundamentally driven by (and would not be incurred in the absence of) high consumptive use of water resources.

- Water users should face efficient price signals, which include water management costs associated with climate change, to encourage efficient decisions going forward.^a

Our current cost share for W05-03 environmental water management (80% user share) already acknowledges a role for broader society to pay some costs for environmental planning and protection.

We remain open to considering this issue going forward. If there is evidence that costs (including costs associated with climate change) would be incurred in the absence of high consumptive water use, we would factor this into our cost shares framework when setting user and government cost share ratios in future determination periods.

7.1.2 We allocated a greater share of W06-05 regional planning and management strategies costs to the NSW Government

The scope of this activity has changed, so the user share should decrease from 70% to 60%. This is consistent with what Cardno recommended.¹³⁰ Further, DPIE stated this adjustment to the user share was reasonable in its response to Cardno's Draft Expenditure Report.

While water users are still the primary drivers for WAMC developing water management strategies, NSW Government policy has shifted. As a result, WAMC is undertaking more high-level, strategic planning with broader objectives. For example, it will work on strategies that support the NSW Government's 2040 Economic Blueprint targeting productive and vibrant regions.¹³¹

Coleambally Irrigation Co-operative Limited supported our decision to reduce the user share for this activity. However, it also considered many of the planning activities related to policy development, so the user share should be set to zero. Lachlan Valley Water Inc stated that regional water strategies had primarily been driven by the NSW Government's objectives rather than by stakeholders.¹³²

We consider regional water planning is a 'policy implementation' activity. Under the *National Water Initiative Pricing Principles*, these costs should be recovered from water users (i.e. only policy development activities should be excluded, as explained in Chapter 2). Further, WAMC needs to establish water management plans and strategies mainly due to high consumptive water use. Therefore water users are the primary drivers of these activities.

^a The Productivity Commission noted irrigators would likely need to contend with more frequent and severe droughts due to climate change, and so would need to adapt to a world with less water (Productivity Commission, *National Water Reform*, Draft Report, February 2021, pp 159–160).

7.1.3 We allocated a greater share of W04-01 surface water modelling costs to the NSW Government

We have revised the cost share for this activity since the Draft Report. WAMC provided Cardno with additional information about how the scope of this activity has changed since the 2019 review. In response, Cardno recommended the user share decrease from 80% to 70%. We have made a decision consistent with this recommendation.¹³³

WAMC is undertaking additional work to support broader government priorities, including floodplain harvesting (which has a 0% user share) and regional planning and management strategies (where we have lowered the user share from 70% to 60%). We have therefore reduced the user share for W04-01 surface water modelling from 80% to 70%.

7.1.4 We made efficiency adjustments to W08-03 compliance management costs, rather than changing the cost share

As outlined in Chapter 3 on operating expenditure, Cardno identified efficiency concerns with compliance management costs. Instead of changing the cost share for this activity, we addressed these concerns through reducing NRAR's costs to an efficient level – that of a steady state organisation with a mature compliance function.

Our approach ensures we continue to allocate costs to whichever party creates the need for them to be incurred. Efficiency concerns are dealt with separately as part of the expenditure review process. NRAR also proposed maintaining the existing cost shares for this activity in its pricing proposal.

However, we recognise additional costs are required in the short term (and the NSW Government, rather than users, should pay them). This approach will enable NRAR to respond to historical compliance issues identified by the Matthews review and pursue its broad objective to build public confidence in its enforcement activities.^b In effect, we are implicitly reducing the user share for this activity on a temporary basis.

7.1.5 We addressed Water NSW's allocation of costs to W-codes

In our 2019 review we decided to continue using the activity code framework (W-codes) to define WAMC's monopoly services and allocate costs to them. This framework underpins our price regulation of WAMC.

However, Water NSW's pricing proposal did not adhere to this framework. Water NSW considered the activity codes did not directly align with its activities and cost allocation methods. Instead, it proposed shifting from individual activity codes to service areas (which comprise aggregated activities).

^b One of NRAR's principle objectives is to maintain public confidence in the enforcement of natural resources management legislation (*Natural Resources Access Regulator Act 2017* s 10(b)).

This approach created challenges for Cardno's expenditure review, in particular:

- Losing the ability to trace costs between the 2016 Determination, current period actual costs and forecast costs
- Creating inconsistencies between Water NSW, DPIE and NRAR for jointly delivered activities
- Reducing the link between the impactor and the costs allocated to them (where Water NSW aggregated activity codes with varying user shares).¹³⁴

As a result, Cardno recommended Water NSW use detailed cost coding within its finance system to record actual costs for at least the most material activities – consent transactions, customer management activities and water monitoring.¹³⁵ We agree with this recommendation.

Water NSW's decision to not use the activity code framework has impacted user shares, particularly for water monitoring and corporate capital expenditure:

- **Water monitoring:** Water NSW proposed combining 7 individual water monitoring activity codes within W01 and W02 – with user shares varying from 40% to 100% – into a single service area. Cardno considered this aggregation was problematic, because it reduced the link between the impactor and pricing for the water monitoring activities. Water NSW was unable to provide Cardno with information to allow it to reliably break down the aggregated costs into individual activity codes. Therefore, Cardno recommended applying a 77% user share to W01 and a 100% user share to W02.¹³⁶ We have made a decision consistent with these recommendations.
- **Corporate capital expenditure:** Water NSW proposed to discontinue the business governance and support activity code (W10-02), which has a user share of 80%. In the 2019 review, we recommended looking at removing this activity code, on the basis that its costs would be transparently allocated across the relevant activity codes.
 - Instead of allocating its corporate capital expenditure from W10-02 across other activities, Water NSW proposed a separate corporate capital expenditure regulatory asset base be established, with a user share of 94%.^{c.137}
 - Cardno did not support this approach. In its view, Water NSW had not used a transparent cost allocation process to allocate its costs to the relevant activity codes. The impact of increasing the corporate capital expenditure user share from 80% to 94% was not justified without having confidence in the allocation.¹³⁸ Consistent with Cardno's recommendation, we are retaining the W10-02 activity code for corporate capital expenditure and applying the existing 80% user share.

^c This user share reflects the weighted average user share of proposed total expenditure for the 2021 determination period.

7.1.6 We decided 77.9% of WAMC's efficient costs were allocated to water users

Our cost share decisions allocate 77.9% of the total notional revenue requirement (NRR) to water users, compared with 72.3% in the 2016 review.¹³⁹ The difference is mainly due to us increasing the user share of costs for several WAMC activities in the 2019 cost share review, which we have affirmed in this review.

The user share of costs has decreased from 78.4% in the Draft Report.¹⁴⁰ This decrease partly reflects our decision to reduce the user share of W04-01 from 80% to 70% in the Final Report.

Table 7.2 outlines our cost shares, as well as WAMC's proposed cost shares. For reference, we have also included the 2016 cost shares, which we updated in the 2019 review. W-codes whose cost shares have changed since the 2019 review are highlighted in grey.

Table 7.2 Decision on WAMC's cost shares for operating and capital expenditure for the 2021 determination period

Activity	2016 price review	2019 cost share review	WAMC pricing proposal	IPART decision
Surface water monitoring				
W01-01 Surface water quantity monitoring	70	100	100	100
W01-02 Surface water data management and reporting	50	50	50	50
W01-03 Surface water quality monitoring	50	60	60	60
W01-04 Surface water algal monitoring	50	40	40	40
W01-05 Surface water ecological condition monitoring	50	50	50	50
Groundwater monitoring				
W02-01 Groundwater quantity monitoring	100	100	100	100
W02-02 Groundwater quality monitoring	100	100	100	100
W02-03 Groundwater data management and reporting	100	100	100	100
Water take monitoring				
W03-01 Water take data collection	100	100	100	100
W03-02 Water take data management and reporting	100	100	100	100
Water modelling and impact assessment				
W04-01 Surface water modelling	50	80	80	70
W04-02 Groundwater modelling	100	100	100	100
W04-03 Water resource accounting	100	100	100	100
Water management implementation				
W05-01 Systems operation and water availability management	100	100	100	100
W05-02 Blue-green algae management	50	40	40	40
W05-03 Environmental water management	0	80	80	80
W05-04 Water plan performance assessment and evaluation	50	50	50	50
Water management planning				
W06-01 Water plan development (coastal)	70	70	70	70

Activity	2016 price review	2019 cost share review	WAMC pricing proposal	IPART decision
W06-02 Water plan development (inland)	70	70	70	70
W06-03 Floodplain management plan development	0	0	0	0
W06-04 Drainage management plan development	0	0	0	0
W06-05 Regional planning and management strategies	70	70	70	60
W06-06 Development of water planning and regulatory framework	75	80	80	80
W06-07 Cross-border and national commitments	50	50	50	50
Water management works				
W07-01 Water management works	50	80	80	80
Water regulation management				
W08-01 Regulation systems management	100	100	100	100
W08-02 Consents management and licence conversion	100	100	100	100
W08-03 Compliance management	100	100	100	100
W08-99 Water consents overhead	100	100	N/A	100
Water consents transactions				
W09-01 Water consents transaction	100	100	100	100
Business and customer services				
W10-01 Customer management	100	100	100	100
W10-02 Business governance and support	70	80	94	80
W10-03 Billing management	100	100	100	100

Note: As outlined in section 7.1.5, Water NSW was unable to provide us with the information that would allow us to breakdown the aggregated W01 costs into individual activity codes. Therefore, while we have not changed the user share for the individual W01 codes, we have applied a user share of 77% to Water NSW's aggregated W01 costs. WAMC did not propose allocating any costs to W08-99. Sources: IPART, *Rural water cost shares – Final Report*, February 2019, pp 47–48; and WAMC (DPIE/NRAR), Pricing proposal to IPART, Detailed Paper D, June 2020, pp 2–3.

7.2 We largely accepted WAMC's proposed cost drivers to allocate costs across water sources

Our decision is:



21. To largely accept WAMC's proposed cost drivers in Table 7.3 to allocate the user share of its costs across water sources as shown in Table 7.5.
 - The exceptions are for W06-05 regional planning and management strategies and W10-02 business governance and support. We decided to use volume of entitlements as a cost driver for these WAMC activities.
 - This decision results in the user share of WAMC's efficient costs being allocated across water sources as listed in Table 7.4.

DPIE/NRAR proposed changing the cost drivers for 12 of WAMC's 33 activities from those used in the 2016 Determination. Water NSW did not outline specific changes to cost drivers.

Cardno recommended we accept DPIE/NRAR's proposal, except for the cost driver for W06-05 regional planning and management strategies. It considered DPIE/NRAR had not provided sufficient evidence to justify changing this to number of licences.¹⁴¹

The agencies did not object to Cardno's recommendations in their submissions to its Draft Expenditure Report. Further, there were no stakeholder submissions to our Draft Report on specific cost drivers.

Since the Draft Report, DPIE/NRAR provided us with new information about the cost driver for W06-05 regional planning and management strategies.¹⁴² Cardno undertook additional analysis of the cost driver for W10-02 business governance and support, and recommended an alternative allocator of costs.¹⁴³

As a result, compared with the 2016 Determination, we changed the cost drivers for:

- 11 of WAMC's activities in accordance with DPIE/NRAR's proposal^d
- W06-05 regional planning and management strategies and W10-02 business governance and support from their existing ones to volume of entitlements.^e

7.2.1 We agreed with WAMC's proposal to use several new cost drivers

In their pricing proposal, DPIE/NRAR stated cost drivers should generally be changed only where the existing driver no longer reflects the source of an activity's costs.¹⁴⁴ We agree and, therefore, focused on the cost drivers raised in their proposal. Table 7.3 sets out DPIE/NRAR's proposed new cost drivers and our decisions.

Table 7.3 Decision on DPIE/NRAR's proposed changes to WAMC cost drivers for the 2021 determination period

2016 cost drivers	Proposed cost drivers	Activity codes	IPART's decision
Number of water models	Volume of entitlements	W04-01 – Surface water modelling W04-02 – Groundwater modelling	Accept proposed cost driver
Water take	Volume of entitlements	W04-03 – Water resource accounting W05-04 – Water plan performance assessment & evaluation W06-01 – Water plan development (coastal) W06-02 – Water plan development (inland) W06-06 – Development of water planning & regulatory framework W06-07 – Cross-border & national commitments	Accept proposed cost driver
Water entitlement held by utilities and industry	Number of licences or volume of entitlements ^a	W06-05 – Regional planning and management strategies	Accept proposed cost driver – volume of entitlements
Compliance risk profile	Number of licences	W08-03 – Compliance management	Accept proposed cost driver

^d This means they move to either volume of entitlements or number of licences, depending on the activity.

^e Excluding unregulated and groundwater Hunter Water Corporation and Water NSW entitlements.

2016 cost drivers	Proposed cost drivers	Activity codes	IPART's decision
Number of customers	Number of licences	W10-01 – Customer management	Accept proposed cost driver
Water take	None – costs transferred to overheads	W10-02 – Business governance and support	Noted – no decision required

a. DPIE/NRAR initially proposed 'number of licences' as the cost driver in its pricing proposal. It subsequently proposed 'volume of entitlements' as an alternative cost driver.

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, pp 28–30; and Email to IPART, DPIE, 7 May 2021.

Stakeholders did not raise concerns with specific cost drivers in their submissions to our Draft Report. Rather, a few stakeholders noted at a high level the process of allocating costs to water sources was flawed.¹⁴⁵ In response, we have obtained additional cost driver information from DPIE, to ensure the allocation of costs among water sources is as cost reflective as possible.

7.2.2 We used volume of entitlements as a cost driver for several WAMC activities

In the 2016 Determination, we accepted WAMC's proposal to use water take to allocate costs for several of its activities across water sources. At the time, we noted this represented a significant shift from the 2011 Determination, where volume of entitlements was a key cost driver. However, we decided on balance that water take was the best available allocator of WAMC's costs at the time.¹⁴⁶ We also accepted the number of models as a cost driver for WAMC's modelling costs.

Since then, WAMC has undertaken further analysis that indicates volume of entitlements is more cost reflective than the existing drivers of water take or number of models. Further, it is more constant over multiple time periods and less skewed by external shocks, such as drought.¹⁴⁷

We agree volume of entitlements is a more cost-reflective, less volatile allocator for WAMC's costs, and accepted WAMC's proposal.

Our decision is consistent with Cardno's recommendation. It found the volume of entitlements cost driver was more aligned with the largely fixed costs of WAMC's activities, compared with water take. It was also preferable to use this cost driver to allocate WAMC's modelling costs – rather than number of models – because it better reflects the scale and potential complexity of modelling required in different valleys, and remains relatively simple to administer.¹⁴⁸

We decided to change to volume of entitlements as a cost driver for two other WAMC activities

We received new information and analysis since our Draft Report about the cost drivers for W06-05 regional planning and management strategies and W10-02 business governance and support. We now consider the costs for these activities should also be allocated to water sources based on volume of entitlements.

W06-05 regional planning and management strategies

Costs for regional planning and management strategies are currently allocated based on volume of entitlements held by utilities and industry. In their pricing proposal, DPIE/NRAR noted this approach was because the coastal water sharing plans dominated this activity for the 2016 determination period.¹⁴⁹

DPIE/NRAR proposed allocating these costs by using number of licences as the cost driver. They considered the focus on this activity would broaden to the whole of NSW. Therefore, the number of licences best reflected the state-wide coverage of regional water strategies.

Cardno found the change in cost driver would impact regulated users more than unregulated users. Regulated users' share of costs would increase from 9.4% using the existing cost driver to 32.1% under the proposed cost driver.¹⁵⁰ It considered DPIE/NRAR did not provide sufficient evidence that these changes brought about by the new cost driver reflected the underlying costs of this activity. Therefore, it recommended retaining the existing cost driver.

DPIE/NRAR did not object to Cardno's recommendation in their submissions to its Draft Expenditure Report. We therefore made a decision in our Draft Report consistent with Cardno's recommendation and maintained the existing cost driver. In our view, DPIE/NRAR did not explain why the cost shift to regulated users – where their share of costs would increase from almost 10% under the existing cost driver to over 30% under the proposed cost driver – was appropriate.

However, DPIE subsequently provided us with new information about the cost driver for this activity.^f It explained that:

- The existing cost driver was weighted towards Hunter Water Corporation and Water NSW, because the work to be done on regional planning during the 2016 determination period was focused on the unregulated Hunter and South Coast water sources.
- For the 2021 determination period, planning activities will be spread across the whole state and heavily weighted towards the Murray and Murrumbidgee regions. There will be less costs incurred in the unregulated South Coast and Hunter water sources because the strategies for these regions are largely complete.
- It is appropriate to change the cost driver to reflect this change in focus for regional planning and management activities. Retaining the existing cost driver would result in a large portion of costs being recovered from the unregulated Hunter and South Coast water sources, when they will not drive costs.¹⁵¹

DPIE suggested changing the cost driver to volume of entitlements, excluding Hunter Water Corporation and Water NSW entitlements, which would be broadly consistent with the cost driver for other activities. Based on the new information, we agree changing the cost driver in this way would be more cost reflective than retaining the existing cost driver.

W10-02 business governance and support

In its pricing proposal, WAMC proposed deleting the W10-02 business governance and support activity code. Instead, these costs were to be re-allocated directly to WAMC's other activities. It therefore did not nominate a change to the existing cost driver (i.e., water take). However, because of problems with WAMC's proposed reallocation of these costs (section 7.1.5), we retained this activity code in our draft decision. This approach meant water take remained as the cost driver in our Draft Report.

^f Because we received this information after Cardno had finalised its Supplementary Report, it was unable to consider it.

Since the Draft Report, Cardno undertook additional analysis of the cost driver for this activity. It recommended changing it from water take to volume of entitlements.¹⁵² We agree, because it more closely reflects the costs for this activity. It is also consistent with the broad shift towards using entitlements as a cost driver for several other activities.

7.2.3 We used the number of licences as a cost driver for W08-03 compliance management and W10-01 customer management

DPIE/NRAR proposed allocating costs for W08-03 compliance management and W10-01 customer management by the number of licences. They considered the number of licences is a more cost-reflective allocator than the existing cost drivers. For example, the roll out of metering would mean the number of licences is a better allocator for compliance costs between valleys, rather than a subjective assessment of past compliance risk, which is the existing cost driver.⁹

In response to our Issues Paper, some stakeholders supported retaining a cost driver calibrated to compliance risk. Southern Riverina Irrigators considered compliance costs should be allocated to regions with known compliance issues.¹⁵³ Further, Murray Irrigation stated that water users in Southern NSW may have a lower compliance risk than those in Northern NSW (due to the nature of their operations), so less compliance costs should be allocated to them.¹⁵⁴

We have decided to accept DPIE/NRAR's proposal and use number of licences as a cost driver. We made this decision because we applied an efficiency adjustment to WAMC's compliance costs, bringing them into line with those of an organisation that has an efficient, relatively settled approach to compliance (Chapter 3). As Cardno noted, the cost driver should then reflect this type of organisation's compliance effort being more evenly directed across water users.¹⁵⁵

7.2.4 Our decision on cost drivers shifted the allocation of costs from our previous determination

Table 7.4 compares the user share of the NRR (in percentage and \$2020–21 terms) under this decision to the user share of the NRR under the 2016 Determination.

It shows there has been a shift in costs from groundwater and unregulated rivers to regulated rivers. For example, 50.3% of the user share of the NRR is allocated to regulated rivers, compared with 43.7% in 2016. A key reason is our decision to change the cost driver for several activities to volume of entitlements, and effectively exclude most unregulated and groundwater Hunter and South Coast water sources from the allocation of costs. As discussed in section 7.2.2, this approach reflects that these water sources are not the main drivers for WAMC's activities for the 2021 determination period.

⁹ DPIE/NRAR noted the existing driver allocates compliance costs on a risk basis. That is, valleys with high non-compliance rates pay a proportionately higher share of the costs (WAMC (DPIE/NRAR), *Pricing proposal to IPART, Detailed Paper D*, June 2020, p 10).

Table 7.4 Decisions on allocation of user share of total notion revenue requirement across water sources (\$ millions, \$2020–21)

Water source	2016 Determination		2021 Determination	
	\$ million	%	\$ million	%
Regulated rivers				
Border	3.6	2.0%	5.5	2.4%
Gwydir	5.6	3.1%	6.7	3.0%
Namoi	4.3	2.4%	4.2	1.9%
Peel	1.0	0.5%	0.9	0.4%
Lachlan	6.4	3.5%	9.3	4.1%
Macquarie	7.1	3.9%	9.9	4.4%
Murray	22.7	12.6%	38.4	17.0%
Murrumbidgee	23.2	12.9%	33.1	14.6%
North Coast	0.2	0.1%	0.3	0.2%
Hunter	4.4	2.4%	4.8	2.1%
South Coast	0.3	0.2%	0.5	0.2%
Total regulated rivers	78.8	43.7%	113.8	50.3%
Unregulated rivers				
North West	5.4	3.0%	6.7	3.0%
Central West	5.6	3.1%	6.5	2.9%
Far West	5.6	3.1%	6.7	3.0%
Murray	1.3	0.7%	1.8	0.8%
Murrumbidgee	3.5	2.0%	4.0	1.8%
North Coast	10.1	5.6%	12.7	5.6%
Hunter	7.2	4.0%	8.2	3.6%
South Coast	18.2	10.1%	14.9	6.6%
Total unregulated rivers	57.0	31.6%	61.5	27.2%
Groundwater				
Inland	35.9	19.9%	36.9	16.3%
Coastal	8.7	4.8%	14.0	6.2%
Total groundwater	44.5	24.7%	50.9	22.5%
Total NRR	180.3	100.0%	226.2	100.0%

Source: IPART analysis.

The user share of the NRR allocated to regulated rivers increased from 45.2% in the Draft Report to 50.3% in the Final Report. This change is mainly due to changing the cost driver for several activities to exclude unregulated and groundwater Hunter and South Coast water sources.

Table 7.5 outlines our cost drivers, as well as WAMC's proposed cost drivers. For reference, we have also included the 2016 cost drivers and indicated where we have not changed these cost drivers. W-codes for which cost drivers have changed since the 2016 Determination are shaded in grey.

Table 7.5 Decision on WAMC's cost drivers for operating and capital expenditure for the 2021 determination period

Activity	Water type	2016 review	WAMC pricing proposal	IPART decision
Surface water monitoring				
W01-01 Surface water quantity monitoring	R/U	Relative cost of hydrometric stations	No change	No change
W01-02 Surface water data management and reporting	R/U	Number of surface water sites subject to data management	No change	No change
W01-03 Surface water quality monitoring	R/U	Number of quality tests processed	No change	No change
W01-04 Surface water algal monitoring	R/U	Number of algal tests	No change	No change
W01-05 Surface water ecological condition monitoring	R/U	River length	No change	No change
Groundwater monitoring				
W02-01 Groundwater quantity monitoring	G	Number of groundwater bore pipes monitored	No change	No change
W02-02 Groundwater quality monitoring	G	Number of quality tests	No change	No change
W02-03 Groundwater data management and reporting	G	Number of groundwater bore pipes monitored	No change	No change
Water take monitoring				
W03-01 Water take data collection	N/A			
W03-02 Water take data management and reporting	U/G	Unregulated/groundwater 2-part water take	No change	No change
Water modelling and impact assessment				
W04-01 Surface water modelling	R/U	Surface water models	Volume of entitlements (surface water only) ^a	Volume of entitlements (surface water only) ^a
W04-02 Groundwater modelling	G	Groundwater models	Volume of entitlements (ground water only) ^b	Volume of entitlements (ground water only) ^b
W04-03 Water resource accounting	R/U/G	Total water take	Volume of entitlements ^c	Volume of entitlements ^c
Water management implementation				
W05-01 Systems operation and water availability management	R/U/G	Water operations complexity	No change	No change
W05-02 Blue-green algae management	R/U	Risk rated BGA alerts	No change	No change
W05-03 Environmental water management	R/U	Environmental entitlement	No change	No change
W05-04 Water plan performance assessment and evaluation	R/U/G	Total water take	Volume of entitlements ^c	Volume of entitlements ^c
Water management planning				

Activity	Water type	2016 review	WAMC pricing proposal	IPART decision
W06-01 Water plan development (coastal)	R/U/G	Total water take	Volume of entitlements (weighted to only include coastal sources) ^c	Volume of entitlements (weighted to only include coastal sources) ^c
W06-02 Water plan development (inland)	R/U/G	Total water take	Volume of entitlements (weighted to only include inland sources)	Volume of entitlements (weighted to only include inland sources)
W06-03 Floodplain management plan development	R/U	Floodplain management plans	No change	No change
W06-04 Drainage management plan development	R/U	Drainage management plans	No change	No change
W06-05 Regional planning and management strategies	R/U/G	Volume of entitlements held by utilities and industry	Number of licences	Volume of entitlements ^c
W06-06 Development of water planning and regulatory framework	R/U/G	Total water take	Volume of entitlements ^c	Volume of entitlements ^c
W06-07 Cross-border and national commitments	R/U/G	Total water take (double the weighting of allocation on activities in inland water pricing sources)	Volume of entitlements (double the weighting of allocation on activities in inland water pricing sources) ^c	Volume of entitlements (double the weighting of allocation on activities in inland water pricing sources) ^c
Water management works				
W07-01 Water management works	R/U/G	Water management works project dollar cost	No change	No change
Water regulation management				
W08-01 Regulation systems management	R/U/G	Number of licences	No change	No change
W08-02 Consents management and licence conversion	R/U/G	Number of licences	No change	No change
W08-03 Compliance management	R/U/G	Compliance risk management	Number of licences	Number of licences
W08-99 Water consents overhead	R/U/G	Consent transactions		
Water consents transactions				
W09-01 Water consents transaction	R/U/G	Consent transactions	No change	No change
Business and customer services				
W10-01 Customer management	R/U/G	Number of customers	Number of licences	Number of licences
W10-02 Business governance and support	R/U/G	Total water take	Transferred to overheads for DPIE	Volume of entitlements ^c
W10-03 Billing management	R/U/G	Number of bills issued per year	No change	No change

a. Excluding unregulated Hunter Water Corporation and Water NSW entitlements.

b. Excluding groundwater Hunter Water Corporation entitlements.

c. Excluding unregulated and groundwater Hunter Water Corporation and Water NSW entitlements.

Note: R = Regulated, U = Unregulated and G = Groundwater.

Source WAMC (DPIE / NRAR) pricing proposal to IPART, Detailed Paper D, June 2020, pp 10–12; IPART, *Review of prices for the Water Administration Ministerial Corporation from 1 July 2016 – Final Report*, June 2016, pp 182–184; and Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, pp 32–33.

7.2.5 We allocated user share of MDBA NRR across water sources

As outlined in Chapter 5, Atkins reviewed the efficient level of MDBA costs for the WAMC determination. As part of this review, it allocated these MDBA costs to 7 activity codes. We consider Atkins's recommended allocation to these activity codes is appropriate.

Table 7.6 sets out the outcome of our decisions on the user share of the MDBA NRR and allocation to water sources. It shows most of this NRR is allocated to 2 regulated rivers – Murrumbidgee (34.2%) and Murray (28.6%).

Table 7.6 also indicates our allocation represents a substantial proportion of the user share of the NRR used to calculate prices. For example, it represents around 25% to 30% of the total NRR for the Gwydir, Namoi and Murrumbidgee regulated rivers.

Table 7.6 Allocation of user share of MDBA's notional revenue requirement across water sources for the 2021 determination period (\$ millions, \$2020–21)

Water source	User share of MDBA NRR (A)	% of total user share MDBA	User share of total NRR (B)	User share of MDBA NRR (as % of user share of total NRR) (A÷B)
Regulated rivers				
Border	0.7	2.8%	5.5	13.0%
Gwydir	1.9	7.5%	6.7	28.3%
Namoi	1.1	4.2%	4.2	25.5%
Peel	0.1	0.2%	0.9	6.2%
Lachlan	1.1	4.4%	9.3	12.1%
Macquarie	1.5	5.8%	9.9	15.0%
Murray	7.3	28.6%	38.4	19.0%
Murrumbidgee	8.7	34.2%	33.1	26.3%
North Coast	0.0	0.0%	0.3	0.0%
Hunter	0.0	0.0%	4.8	0.0%
South Coast	0.0	0.0%	0.5	0.0%
Total regulated rivers	22.4	87.8%	113.8	19.7%
Unregulated rivers				
North West	0.2	0.9%	6.7	3.6%
Central West	0.3	1.1%	6.5	4.2%
Far West	0.9	3.7%	6.7	14.1%
Murray	0.1	0.2%	1.8	3.0%
Murrumbidgee	0.1	0.3%	4.0	2.1%
North Coast	0.0	0.0%	12.7	0.0%
Hunter	0.0	0.0%	8.2	0.0%
South Coast	0.0	0.0%	14.9	0.0%
Total unregulated rivers	1.6	6.3%	61.5	2.6%
Groundwater				
Inland	1.5	6.0%	36.9	4.1%
Coastal	0.0	0.0%	14.0	0.0%
Total groundwater	1.5	6.0%	50.9	3.0%
Total NRR	25.5	100.0%	226.2	11.3%

Source: IPART analysis.

Chapter 8 »

Water entitlement and
water take forecasts



Summary of our decisions for water entitlement and water take forecasts

For regulated rivers, we accepted WAMC's forecasts:

Entitlements are based on 2019–20 actuals.

Water take volumes are based on the 20-year historical average of water take.

Floodplain harvesting volumes are based on WAMC's best available information.

For unregulated rivers and groundwater sources, we largely accepted WAMC's forecasts

We accepted WAMC's forecasts of entitlement and water take volumes for unregulated rivers and groundwater sources.

Floodplain harvesting volumes for unregulated rivers are based on WAMC's best available information.

Metering reforms lead to increasing water sale volumes over the 2021 determination period.

We did not establish a demand volatility adjustment mechanism for WAMC.

Once we established the user share of efficient costs in each water source and decided what proportions of these costs to recover through fixed (entitlement) and variable (water take) charges. We then utilised water entitlement and water take forecasts to calculate maximum prices. If the entitlement and water take forecasts we used are accurate (i.e. if actuals turn out to be equal to our forecasts), then the prices we set will recover the customer share of efficient costs. It is important that forecasts are as accurate as possible so that prices can best reflect efficient costs and regulated utilities can recover their efficient costs.

This chapter sets out the water entitlement and water take forecasts we used to calculate maximum prices for regulated rivers, unregulated rivers and groundwater sources, and discusses whether a demand volatility mechanism should be established for WAMC.

8.1 We accepted WAMC's forecasting approach for regulated rivers

Our decision is:



22. To set WAMC's water entitlements, water take and floodplain harvesting forecasts for regulated rivers as shown in Table 8.1, Table 8.2 and Table 8.3 respectively.

8.1.1 Water entitlement forecasts are around 7.8 million ML per year

We accepted WAMC's proposal for constant volumes over the 2021 determination period based on actual entitlements in the 2019–20 period, because entitlement volumes are generally stable (Table 8.1).¹⁵⁶ This approach was also used in the 2016 price review.

Table 8.1 Decision on regulated river entitlement forecasts for the 2021 determination period (ML per year)

Water source	Forecast entitlements
Border	266,359
Gwydir	536,585
Namoi	265,395
Peel	47,002
Lachlan	690,418
Macquarie	675,157
Murray	2,347,178
Murrumbidgee	2,704,141
North Coast	9,668
Hunter	208,811
South Coast	15,121
Total	7,765,835

Source: WAMC (Water NSW) submission to Draft Report, 16 April 2021, p 58.

8.1.2 Water take forecasts are around 4.0 million ML per year

WAMC forecasts water take to be around 4.0 million megalitres (ML) per year over the 2021 determination period (Table 8.2). WAMC used historical data to forecast water take.¹⁵⁷ Forecasts are based on the 20-year average of historical water take for each water source, except:

- the North Coast and South Coast regulated water sources, where only 16 years of water take data are available, consistent with the approach undertaken in the 2016 price review¹⁵⁸
- Lowbidgee supplementary water take (part of the Murrumbidgee regulated water source), which has been calculated separately using a shorter averaging period.

Table 8.2 Decision on regulated river water take forecasts for the 2021 determination period (ML per year)

Water source	Forecast water take
Border	139,453
Gwydir	220,489
Namoi	138,241
Peel	12,625
Lachlan	182,100
Macquarie	232,545
Murray	1,379,454
Murrumbidgee ^a	1,563,243

Water source	Forecast water take
North Coast	676
Hunter	123,631
South Coast	4,165
Total	3,996,622

a. This figure includes Lowbidgee supplementary water take forecasts.

Note: Water take is forecast to be same for each year of the 2021 determination period.

Source: WAMC (Water NSW) submission to Draft Report, 16 April 2021, p 58.

WAMC engaged CIE in putting together its forecasts and CIE noted water take is highly volatile, and there is "little clear pattern in year-on-year changes".¹⁵⁹ CIE considered this volatility supports using a long-run average to mitigate the effect of random variation in recent years.¹⁶⁰

Our decision is to accept WAMC's proposal and calculate water take volumes for regulated rivers based on the 20-year averaging period. In making our decision, we considered the advantages and disadvantages of the current methodology and merit of alternative approaches. The results of our analysis are summarised below.

We investigated the key drivers of water take

WAMC proposed we continue to base our water take forecast for regulated water sources on historical averages.

The benefit of this approach is that any forecast error (i.e. difference between forecast and actual) will be factored into future forecasts because the averaging period rolls forward to include the new actual water take data. This approach means over time, over-forecasts will be offset by under-forecasts and prices will be cost reflective on average.

The disadvantage of this approach is the forecast does not contain up-to-date information about current factors driving water take. For example, identifying and understanding key drivers of water take, and forecasting what these key drivers are likely to be over the next 4 years, could help us generate a more accurate water take forecast than a forecast based on historical average actual water take.

In considering WAMC's proposal, we considered whether alternative forecasting methods are available by attempting to better understand the key drivers of historical water take. We considered available information that could influence the demand and supply of water, and constraints on demand and supply. This information included data on entitlements, allocation, licence categories, geographic location and environment (including dam levels, rainfall and temperature).

While this analysis has helped improve our understanding of the key drivers of water take, our results are inconclusive. This outcome is because of data limitations and potential complexities in the relationships between variables that may have been omitted from our methodology. WAMC is well placed, in terms of expertise and access to data, to further investigate the key drivers of water take (including impacts from climate change) to inform future pricing proposals.

8.1.3 Floodplain harvesting forecasts are around 212,000 ML per year

We accepted WAMC's floodplain harvesting (FPH) water take forecasts to set charges when FPH is introduced (Table 8.3).

WAMC expects the FPH regulation will be operational during the 2021 determination period. It expects FPH will have a small impact on overall water take for certain regulated water sources (around 5% per year based on total water take volumes). WAMC relied on best available information to estimate the impact, which included latest flood models, farm surveys, on-ground mapping, satellite imagery and remote sensing.¹⁶¹

Table 8.3 Decision on regulated river floodplain harvesting forecasts for the 2021 determination period (ML per year)

Water source	Forecast
Border	38,000
Gwydir	93,200
Namoi	43,700
Macquarie	37,500
Total	212,400

Source: DPIE email to IPART, 5 May 2021.

8.2 We accepted WAMC's forecasting approach for unregulated rivers

Our decision is:



23. To accept WAMC's proposed approach for forecasting water entitlements, water take and floodplain harvesting volumes for unregulated rivers as shown in Table 8.4, Table 8.5 and Table 8.6 respectively.

8.2.1 Water entitlement forecasts are around 3.2 million ML per year

In the 2016 price review, we accepted WAMC's forecasting approach for unregulated water sources. It used the latest actual entitlement volumes available at the time (for the 2015–16 period) as the basis for forecasting unregulated water entitlement volumes over the 2016 determination period.¹⁶²

For this price review, WAMC proposed some changes to its forecasting approach. For unregulated rivers water entitlements, WAMC proposed factoring in the impact of non-urban metering reforms that would result in water users moving from 1-part to 2-part tariffs if they meet the new regulatory requirements. WAMC assumed the tariff transition would be staggered over the 2020–2023 period based on the current roll out timetable of the metering framework.¹⁶³

We consider WAMC has applied some rigour when estimating total water entitlements for unregulated water sources over the 2021 determination period given the limited historical data available for unregulated water sources. WAMC provided a detailed consultant report, which documented the steps taken to calculate entitlements volumes for each water source.¹⁶⁴

We accepted WAMC's general approach to forecasting water entitlements for the different unregulated water sources, including the impact of non-urban metering reforms (Table 8.4).

Table 8.4 Decision on unregulated river water entitlement forecasts (ML)

Water source	2-part tariff entitlements	1-part tariff entitlements	Total entitlements
Border	30,111	15,734	45,845
Gwydir	30,862	18,605	49,468
Namoi	69,264	89,250	158,514
Peel	2,330	10,024	12,353
Lachlan	18,779	37,029	55,808
Macquarie	240,969	58,304	299,273
Far West	159,929	71,712	231,640
Murray and Lower Darling	38,967	13,557	52,525
Murrumbidgee	47,842	48,999	96,841
North Coast	123,136	154,174	277,310
Hunter (including Hunter Water Corporation)	526,810	149,262	676,072
South Coast (including Water NSW Greater Sydney)	1,169,800	86,718	1,256,518
Total	2,458,798	753,366	3,212,165

Note: Figures may not add due to rounding. Figures shown in the 2-part tariff and 1-part tariff columns are valid across the full 2021 determination period for Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Far West, Murray and Murrumbidgee. For Hunter, North Coast and South Coast, the roll out of the non-urban metering reforms to 2022–23 means there are slightly more unregulated river entitlements on 1-part tariffs than shown here in 2021–22, and slightly less on 2-part tariffs. Total entitlements are unaffected. Source: IPART calculations using WAMC AIRSIR submission to IPART, November 2020 and additional information provided by WAMC in September 2020.

8.2.2 Water take forecasts are around 1.0 million ML per year

In the 2016 price review, we accepted WAMC's forecasting approach for unregulated water sources. It forecast water take volumes by multiplying forecast entitlement volumes with historical utilisation rates of the different water users.¹⁶⁵ Estimating a 20-year rolling average for unregulated water take was not possible because water take data for unregulated water sources is scarce.

For this price review, WAMC proposed some changes to its forecasting approach. Similar to water entitlements, WAMC proposed to factor in the impact of non-urban metering reforms into forecast water take volumes for the 2021 determination period.^a WAMC also proposed using the more complete unregulated water take (usage) data that are now available (stored in the water accounting system).¹⁶⁶

^a Under the new non-urban metering reforms, the measured water take will increase as a result of more customers with water meters (chapter 14).

As for water entitlements, we consider WAMC has applied some rigour when estimating water take volumes for unregulated water sources over the 2021 determination period. Its approach makes the best use of limited historical data available for unregulated water sources. WAMC provided a detailed consultant report, which documented the steps taken to calculate water take volumes for each water source. Given the data constraints, we do not consider further data manipulation would improve the forecasting of water take.

We decided to accept WAMC's general approach to forecasting water take volumes for the different unregulated water sources, including the impact of non-urban metering reforms, except for Macquarie unregulated. Table 8.5 lists forecast water take volumes for water users on the 2-part tariff in unregulated water sources over the 2021 determination period.

For Macquarie, we increased the water take volumes by 100 ML. This is consistent with our decision in the concurrent review of Water NSW's rural bulk water services, where we increased the water take of one of the customers.¹⁶⁷

Table 8.5 Decision on unregulated river water usage forecasts for the 2021 determination period (ML per year)

Water source	Forecast annual usage
Border	5,724
Gwydir	1,506
Namoi	3,942
Peel	575
Lachlan	4,050
Macquarie	55,031
Far West	92,802
Murray	5,201
Murrumbidgee	9,073
North Coast	41,138
Hunter (incl Hunter Water Corporation)	123,287
South Coast (incl Water NSW Greater Sydney)	651,027
Total	993,355

Note: For Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Far West, Murray and Murrumbidgee, the forecast annual usage volumes are valid across the full 2021 determination period. For Hunter, North Coast and South Coast, the roll out of the non-urban metering reforms to 2022–23 means there are slightly less measurable usage volumes in 2021–22.

Source: IPART calculations using WAMC AIRSIR submission to IPART, November 2020 and additional information provided by WAMC in September 2020.

8.2.3 Floodplain harvesting forecasts are around 47,000 ML per year

We accepted WAMC's forecast water take for when FPH is introduced (Table 8.6).

As noted above, WAMC expects the FPH regulation will be operational during the 2021 determination period, and will have a small impact on overall water take for certain unregulated water sources. WAMC has relied on best available information to estimate the impact, which includes latest flood models, farm surveys, on-ground mapping, satellite imagery and remote sensing.¹⁶⁸

Table 8.6 Decision on unregulated river floodplain harvesting forecasts for the 2021 determination period (ML)

Water source	Forecast
Gwydir	1,408
Namoi	27,891
Far West	17,500
Total	46,799

Source: DPIE email to IPART, 5 May 2021.

8.3 We accepted WAMC's approach for groundwater sources

Our decision is:



24. To accept WAMC's proposed approach for forecasting water entitlements and water take volumes for groundwater as shown in Table 8.7 and Table 8.8 respectively.

8.3.1 Groundwater entitlement forecasts are around 2.0 million ML per year

WAMC proposed to use the same approach for forecasting groundwater entitlements as it used for unregulated entitlements (section 8.2.1). Based on our previous considerations, we accepted WAMC's general approach to forecasting water entitlements for groundwater sources, including the impact of non-urban metering reforms (Table 8.7).

Table 8.7 Decision on groundwater entitlement forecasts for the 2021 determination period (ML)

Tariff structure / Water source	2021–22	2022–23	2023–24	2024–25
2-part tariff entitlements				
Inland Border	14,618	14,618	14,618	14,618
Inland Murrumbidgee	359,287	362,139	362,139	362,139
Inland Other	1,044,768	1,044,768	1,044,768	1,044,768
Coastal	180,683	200,500	220,317	220,317
Total 2-part tariff entitlements	1,599,356	1,622,025	1,641,842	1,641,842
1-part tariff entitlements				
Inland Border	3,497	3,497	3,497	3,497
Inland Murrumbidgee	16,146	13,294	13,294	13,294
Inland Other	142,830	142,830	142,830	142,830
Coastal	202,620	182,803	162,986	162,986
Total 1-part tariff entitlements	365,093	342,424	322,607	322,607
Total entitlements	1,964,448	1,964,448	1,964,448	1,964,448

Note: Figures may not add due to rounding.

Source: IPART calculations using WAMC AIRSIR submission to IPART, November 2020, and additional information provided by WAMC in September 2020.

8.3.2 Water take forecasts are around 1.1 million ML per year

WAMC proposed to use the same approach for forecasting groundwater water take volumes as it used for unregulated water take volumes (section 8.2.2). Based on previous considerations, we accepted WAMC's general approach to forecasting water take volumes, including the impact of non-urban metering reforms. Table 8.8 lists forecast water take volumes for 2-part tariff in groundwater sources.

Table 8.8 Decision on groundwater water take forecasts for the 2021 determination period (ML)

Water source	2021–22	2022–23	2023–24	2024–25
Inland Border	8,771	8,771	8,771	8,771
Inland Murrumbidgee	284,501	285,836	285,836	285,836
Inland Other	717,223	717,223	717,223	717,223
Coastal	40,197	44,358	48,518	48,518
Total	1,050,692	1,056,188	1,060,348	1,060,348

Source: WAMC, AIRSIR submission to IPART, November 2020; WAMC (DPIE/NRAR), Pricing proposal to IPART, June 2020, p 61; and WAMC (Water NSW), Pricing proposal to IPART, June 2020, p 114.

8.4 We did not establish a demand volatility adjustment mechanism

In its pricing proposal, WAMC proposed:¹⁶⁹

- not seeking an adjustment to its revenues for the 2021 determination period based on the demand volatility adjustment mechanism (DVAM) included in our 2016 Determination
- maintaining the DVAM from the 2016 Determination for the 2021 determination period.

In our 2016 Final Report, we said:¹⁷⁰

We will consider at the next determination of WAMC's prices:

An adjustment to the revenue requirement and prices to address any over or under-recovery of revenue over the 2016 determination period due to material differences between the level of billable water take over the period and the forecast water take volumes used in making this determination

Whether and how best to make a revenue adjustment based on the circumstances at the time.

We analysed WAMC's estimated actual revenues against revenue requirements for the 2016 determination period. We estimated WAMC over-recovered its revenues associated with groundwater sources, which was offset by under-recovery in the unregulated water source (Table 8.9). Therefore, we consider there is no requirement to make any revenue adjustments over the determination period. This approach is in line with WAMC's proposal.

Table 8.9 Revenue over (under) recovery over the 2016 determination period (%)

	Regulated	Unregulated	Groundwater
Level of under/over recovery	100.1%	84.0%	117.0%

Source: IPART analysis.

While WAMC proposed continuing to have a DVAM, we did not establish a DVAM for WAMC in 2016. For clarity, in our 2016 Final Report we indicated we would consider whether and how best to make a revenue adjustment for WAMC based on the circumstances at the time. We did not explicitly establish a DVAM.

In our Issues Paper, we assumed WAMC would like to have a DVAM going forward. We presented our preliminary view that a DVAM should not be introduced because a large proportion of its revenue is not tied to water take volumes.¹⁷¹

In response to our Issues Paper, WAMC supported establishing a DVAM for its business.¹⁷² However, stakeholders were unanimous in their opposition to a DVAM for WAMC. Stakeholders considered:¹⁷³

- allocating risk to customers is inefficient and not least cost
- the NSW Government (as the ultimate owner of WAMC) should be in a better position to manage revenue volatility risk given its wide variety of revenue streams and better capacity to manage budget volatility
- irrigators have limited financial capacity to manage this risk, particularly in years of low or no water supply.

We maintain our position to not establish a DVAM for WAMC. A low proportion of WAMC's revenue is tied to water take, exposing it to relatively low risk from variations between forecast and actual volumes of water take. We do not consider that additional risk should be allocated to customers by providing a DVAM to WAMC.

In addition, not establishing a DVAM for WAMC is consistent with the position we made in our concurrent review of Water NSW's rural bulk water prices. Under the existing price structure, 70% of WAMC's revenue is recovered from fixed (entitlement) charges and 30% from variable (water take) charges. When we factor in the effect of WAMC's minimum annual charge (which moves WAMC's fixed / variable revenue split close to 80% fixed and 20% variable), this structure is very close to the structure we established for Water NSW's rural bulk water (which includes a risk transfer product designed to achieve an overall 80% fixed and 20% variable revenue split).

Chapter 9 »

Price structures for water
management services

09

Summary of our decisions on price structures for water management services

We unbundled existing charges into 3 components: WAMC water management, MDBA and BRC charges

This approach aims to improve transparency in costs and prices and be consistent with how we set charges for rural bulk water.

It means water users will pay up to 3 charges, including small water users that pay the minimum annual charge. Currently, small water users only contribute to WAMC's administrative costs and not to MDBA and BRC costs. Our decision seeks to improve the sharing of these costs between all water users.

We are transitioning prices to full cost recovery:

For the WAMC component, we decided to transition prices for each water source towards full cost recovery at a capped annual real rate of 2.5% (before inflation), until full cost recovery is achieved.

For the MDBA and BRC components, we decided to set these prices at full cost recovery from 2021–22.

We largely maintained other price structure features:

We accepted WAMC's proposal to continue to set different prices for each water source.

We also accepted WAMC's proposal to continue to set 1-part and 2-part tariffs. For 2-part tariffs, we maintained the current 70:30 fixed-to-variable ratio for the WAMC component only. For MDBA and BRC components, we set an 80:20 fixed-to-variable ratio.

We continue to set separate prices for floodplain harvesting.

We also continue to set separate prices for Water NSW to recover metropolitan water planning costs.

We exempted Aboriginal Cultural Licences

We exempted Aboriginal Cultural Licences from paying charges for the 2021 determination period, while the NSW Government considers how to manage these licences in the future as part of the upcoming Aboriginal Water Strategy.

These licences make up a very small proportion of total licences and exempting them has no material impact on prices and revenue for WAMC.

After determining the share of efficient costs payable by water users, and having allocated the user share of costs to water sources, the next step is to decide on the structure of water management charges.

This chapter sets out our decisions to set separate charges for WAMC's water management, MDBA and BRC charges. We set charges for each component to recover full efficient costs over a period of time, or transition them where possible to mitigate impacts on water users. We then set prices for different water users based on their water source, the type of licence they have, whether they have water meters, whether they have special licences, and whether floodplain harvesting (FPH) is implemented in specific water sources over the 2021 determination period.

9.1 We unbundled water management charges

Our decision is:



25. To set separate charges for WAMC's water management, Murray–Darling Basin Authority and Dumaresq–Barwon Border Rivers Commission activities.

We set separate charges for WAMC's water management, MDBA and BRC activities, which we consider will:

- improve transparency in costs and prices for water users compared with the bundled charges set in the 2016 Determination
- be consistent with how we set charges for our concurrent review of Water NSW rural bulk water services where MDBA and BRC charges are separate to Water NSW's bulk water charges.

Stakeholders supported this change,¹⁷⁴ indicating they would like to see more transparency in costs associated with MDBA and BRC activities, and how these costs are funded by water users and the NSW Government.

Our decision means water users will pay up to 3 types of charges based on their location:

- In coastal areas, they will pay WAMC water management charges only
- In MDB areas (excluding BRC areas), they will pay WAMC water management charges and MDBA charges
- In BRC areas, they will pay WAMC water management charges, MDBA charges and BRC charges.

We will also continue setting the minimum annual charge (MAC). The MAC reflects WAMC's administrative costs for small water users (section 9.2). Currently, small water users only pay the MAC. Over the 2021 determination period, small water users that pay the MAC will also pay the relevant MDBA and BRC charges based on their location. We consider this change will improve the sharing of MDBA and BRC costs between all water users.

9.2 We set prices to recover efficient costs

Our decisions are:

-  26. For the WAMC water management component, to transition prices towards full cost recovery at a capped annual real rate of 2.5% until full cost recovery is achieved.
-  27. For the Murray–Darling Basin Authority component, to set prices at full cost recovery from 2021–22.
-  28. For the Dumaresq–Barwon Border Rivers Commission component, to set prices at full cost recovery from 2021–22.
-  29. For the minimum annual charge, to transition prices towards full cost recovery at a capped annual real rate of 2.5% until full cost recovery is achieved.

9.2.1 Prices will transition towards full cost recovery

WAMC proposed recovering the user share of its proposed costs through a combination of price increases and additional contributions from the NSW Government.¹⁷⁵

- WAMC proposed all existing (bundled) water management charges increase from 2020–21 price levels at a capped annual real rate of 5% (or 22% over the 2021 determination period), to mitigate price impacts on customers.
- This approach would result in under-recovery of revenue for most water sources. WAMC proposed the NSW Government provide \$87 million of community service obligation payments or additional contributions to fund the shortfall.^a

Stakeholders did not support WAMC's proposals in their submissions to our Issues Paper.

In our Draft Report, we decided to transition the WAMC water management charge component to full cost recovery at a capped real rate of 2.5% per year (before inflation) for each water source from 2020–21 charges, until full cost recovery is achieved. Further, we decided to set MDBA and BRC charge components at full cost recovery from 2021–22.¹⁷⁶

^a In the Water NSW WAMC proposal, Water NSW indicated a funding shortfall of \$97 million. We are unable to reconcile this number, and estimated the shortfall to be around \$87 million.

Some submissions to our Draft Report supported capping increases for WAMC water management component charges.¹⁷⁷ However, water users, peak bodies and other stakeholders representing water users did not support the overall price increases because of affordability concerns.¹⁷⁸ Meanwhile, WAMC supported broad increases in expenditure (as outlined in the Draft Report), which would result in upward pressure on prices and government contributions.¹⁷⁹

We decided to maintain our draft decision. We consider prices over the 2021 determination period remain sustainable. The prices will allow WAMC to recover efficient costs through a combination of price increases and contributions from the NSW Government. And transitioning prices towards full cost recovery over the 2021 determination period will limit bill shocks for water users. Overall, we consider prices over the 2021 determination period achieve an appropriate balance.

While future prices are generally higher than 2020–21 prices, these prices and bills will be lower for most (but not all) water users compared with WAMC's proposal. Further, NSW Government contributions will be lower compared with WAMC's proposal.

Final prices and analysis of the impacts of our prices are further discussed in Chapters 10 and 11 respectively.

9.2.2 Our approach considered impacts on users

To set WAMC's water management component charges, we considered:

- the charges required to achieve full cost recovery over the 2021 determination period
- the level of charges that will transition the current 2020–21 total water management charges (i.e. the entitlement charge plus the water take charge) to full cost recovery at a maximum real increase of 2.5% per year (i.e. transitioning prices).

To minimise price and bill impacts on water users, we used the minimum charge from these 2 approaches for each year of the determination period.

The process for setting the WAMC water management component charges is:

- **Step 1** – Subtract MDBA and BRC estimated charges from current 2020–21 charges for a like-for-like starting point for the WAMC water management component charges.
- **Step 2** – Calculate full cost recovery charges based on our decisions on efficient costs, price structures and entitlement and water take forecasts.
- **Step 3** – Set starting charges for 2021–22 as the minimum of:
 - full cost recovery charges, or
 - the charges calculated in step 1, escalated by 2.5% and rebalanced to achieve a 70% fixed and 30% variable price structure.^b

^b In section 9.4 we discuss our decision on the tariff structure. In summary, WAMC proposed we maintain the current 70:30 fixed-to-variable ratio for 2-part tariffs. Tariffs are structured so 70% of the forecast revenue is received from the fixed charge (\$ per ML entitlement) and 30% from the water take (or variable) charge (\$ per ML of water taken or extracted).

- **Step 4** – While charges are below full cost recovery, increase charges at a real rate of 2.5% each year of the determination period until they reach full cost recovery.

9.2.3 The minimum annual charge will transition towards full cost recovery

A MAC applies to water users or licence holders where the sum of the entitlement charge and water take charge is less than the minimum annual charge. The MAC is intended to recover most of the cost associated with account management services^c for small water holdings. In 2020–21, the MAC is set at \$214 per water user.¹⁸⁰

WAMC proposed to transition the MAC towards full cost recovery by increasing the MAC at a rate of 5% per year. It estimated its minimum cost per water user is around \$500 per year, and it would take over 18 years to achieve full cost recovery.

We did not receive any stakeholder submissions on the MAC. In past reviews, stakeholders generally support a higher, more cost-reflective MAC.¹⁸¹

Our decision is to accept WAMC's proposal to transition the MAC towards full cost recovery. However, we decided to transition the MAC at a lower annual rate of 2.5%, in line with our decision on WAMC water management charges discussed in section 9.2.1.

9.3 We continue to set prices for each water source

Our decision is:



30. To maintain our approach of setting charges for each water source – that is, the 11 regulated rivers, 12 unregulated rivers and 4 groundwater sources.

WAMC proposed to maintain the existing geographic split of prices across 3 water types as set in the 2016 Determination (i.e. water source based pricing).¹⁸²

Four stakeholders supported maintaining the water source based pricing, with one stakeholder indicating broad concerns about WAMC's cost allocation methodology.¹⁸³ Meanwhile, we received a submission to our Issues Paper from Tamworth Regional Council, and a submission to our Draft Report from P. Gill, proposing postage stamp pricing^d instead of setting different prices for each water source.¹⁸⁴

^c The costs relate to compliance management, customer management and billing management.

^d Postage stamp pricing means setting prices so that all water sources pay the same prices.

On balance, we decided to maintain water source based pricing because this approach:

- ensures prices are reasonably cost reflective and there is transparency, and hence accountability, around costs and activities
- supports the principle that those who create the need for WAMC to incur costs should pay for those costs
- received reasonable support from stakeholders.

In previous reviews, WAMC's groundwater prices were consolidated into 2 regions – Inland (including Murrumbidgee) and Coastal. This consolidation will continue over the 2021 determination period because currently available information on costs incurred by WAMC does not support further disaggregation of costs and prices.

At this stage, we do not consider further consolidation of prices or postage stamp pricing for water management services is appropriate. It would generally result in cross subsidisation between water sources, with some water sources paying prices higher or lower than the efficient costs of providing services to them. In addition, stakeholders have not been properly consulted on this matter. Over the 2021 determination period, WAMC can investigate this issue and consult with stakeholders in the lead up to the next pricing review.

Based on this decision, we set prices for 27 water sources:

- 11 regulated rivers: Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray, Murrumbidgee, North Coast, Hunter and South Coast
- 12 unregulated rivers: Far West, North West region,^e Central West region,^f Murray, Murrumbidgee, North Coast, Hunter and South Coast
- 4 groundwater sources: Inland, Border, Murrumbidgee and Coastal.

There is no change to the number of water sources for regulated and unregulated water sources compared with the 2016 Determination.

For groundwater sources, we decided to set separate charges for Border and distinguished it from the Inland groundwater source. In the 2016 Determination, BRC costs were allocated to the Inland source. As part of the unbundling of existing prices, we are allocating MDBA and BRC costs to relevant water sources only. BRC costs are incurred to manage water resources in the Queensland–NSW Border region. Therefore, water users in that region should pay instead of all water users in Inland water users.

^e We have continued to set prices at common levels for the Border, Gwydir, Namoi and Peel valleys, which are collectively referred to as the North West region.

^f We have also continued to set prices at common levels for the Lachlan and Macquarie valleys, which are collectively referred to as the Central West region.

9.4 We maintained our approach to setting the tariff structure

Our decisions are:

31. To maintain setting:
 - 2-part tariffs, comprised of a fixed charge (\$ per ML of entitlement or unit share) and a water take charge (\$ per ML of water extracted), for regulated water, unregulated water and groundwater sources, where water take is measured, and
 - 1-part tariffs, comprised of a fixed charge (\$ per ML of entitlement or unit share), for unregulated water and groundwater sources, where water take is not measured.
32. To maintain the approach of setting 1-part tariffs as the sum of the fixed charge and water take charge set for 2-part tariffs in each water source.
33. For WAMC's water management price component, to set the tariff structure for the 2-part tariffs so that 70% of forecast revenue from the 2-part tariffs is recovered via the fixed charge and 30% of forecast revenue from the 2-part tariffs is recovered via the water take charge, except for the North Coast regulated water source where this ratio is kept at current levels of 92% fixed and 8% water take.
34. For MDBA and BRC price components, to set the tariff structure for the 2-part tariffs so that 80% of forecast revenue from the 2-part tariffs is recovered via the fixed charge and 20% of forecast revenue from the 2-part tariffs is recovered via the water take charge.

9.4.1 We continued setting 1-part and 2-part tariffs

The prices we set apply to all categories of water access licences and are paid by licence holders or water users. The majority of water users have entitlement charge licences, while others have special category licences (section 9.6).

For water users with an entitlement charge licence, we set:

- a fixed charge (\$ per ML of entitlement or unit share) by water source if water take is not metered (1-part tariffs), or
- a fixed charge (\$ per ML of entitlement or unit share) and a usage charge (\$ per ML of water extracted) by water source if water take is metered (2-part tariffs).

In its pricing proposal, WAMC indicated it will continue to have a mix of water users with and without water meters. It therefore proposed continuing to have 1-part and 2-part tariffs for each water source. Based on this, we decided to continue setting 1-part and 2-part tariffs for each water source.

For 1-part tariffs, the fixed charge for each water source is equal to the sum of the fixed charge and usage charge set for 2-part tariffs. One-part tariffs are relevant for unregulated and groundwater sources only, because 1-part tariffs apply when water users do not have meters or meter equivalents. In regulated water sources, all water users have meters therefore they pay 2-part tariffs. In Chapter 10, we present prices for 2-part tariffs for unregulated and groundwater sources first. We then present the relevant 1-part tariffs for each water source.

9.4.2 We set a 70:30 fixed-to-variable ratio for 2-part tariffs for the WAMC water management component

When setting prices for 2-part tariffs, the ratio of fixed-to-variable prices is usually set to approximate the underlying cost structure of the agency or utility in question.

WAMC proposed maintaining the current 70:30 fixed-to-variable ratio for 2-part tariffs. We decided to accept this proposal and apply it to the WAMC water management component. Under this split, the tariffs are structured so 70% of the forecast revenue under the 2-part tariff is received from the fixed charge (\$ per ML entitlement) and 30% from the water take (or variable) charge (\$ per ML of water taken or extracted).¹⁸⁵

The exception to the 70:30 ratio is the North Coast regulated water source, which currently has a 92:08 fixed-to-variable ratio. The ratio is set at a different level to reflect a low water activation rate for this water source, and mitigate bill and revenue variability that would result from applying a 70:30 ratio.¹⁸⁶

We consider our decision is an on-balance position as this provides WAMC with a reasonable degree of revenue certainty, while providing water users with some scope to reduce their bills through lower levels of water take:

- WAMC's cost structure is largely fixed. By maintaining the 70:30 fixed to variable split for 2-part tariffs, WAMC is likely to generate around 80% of its revenue from fixed charges, including revenue from 1-part tariffs and MACs. This proportion would be closer to reflecting WAMC's cost structure.
- We acknowledge that water users and other stakeholders would generally prefer a ratio with a lower proportion of fixed charges and higher proportion of variable charges. However, the 70:30 fixed to variable ratio mitigates some of the potential bill impact for water users on 2-part tariffs in times of low water availability compared with a ratio that better matches WAMC's cost structure (i.e. with a higher proportion of fixed charges).

9.4.3 We set an 80:20 fixed-to-variable ratio for 2-part tariffs for MDBA and BRC components

We decided to set a different ratio for the 2-part tariff structure for the MDBA and BRC components compared with the WAMC water management component. We consider an 80:20 fixed-to-variable ratio for MDBA and BRC components is appropriate. Our decision balances the following factors:

- In the 2017 Determination for Water NSW's rural bulk water services, the MDBA indicated its cost structure is essentially fixed.¹⁸⁷
- The 80:20 fixed-to-variable ratio for MDBA and BRC components is consistent with the overall ratio for WAMC water management discussed in the previous section.
- This ratio is consistent with how we set the MDBA and BRC charges under the Water NSW rural bulk water price review.

In the Draft Report, we made a factual error. We incorrectly indicated the tariff structure for MDBA and BRC components was a 70:30 fixed-to-variable ratio. However, the modelling for draft prices was correctly undertaken based on an 80:20 fixed-to-variable ratio. During the March Public Hearing, a stakeholder commented on this inconsistency.¹⁸⁸

9.4.4 We will apply the 1-part and 2-part tariffs to WAMC's water management, MDBA and BRC pricing components

In section 9.1, we discussed our decision to unbundle existing prices into 3 pricing components. We will apply the 1-part and 2-part tariffs to these 3 components. In Chapter 10, we present prices for each water source as follows:

- water management prices for all water sources
- MDBA prices for relevant water sources
- BRC prices for relevant water sources
- combined prices (i.e. water management prices, MDBA and BRC prices).

9.5 We continue to set separate prices for floodplain harvesting

Our decision is:



35. To maintain setting separate prices to apply during the 2021 determination period following Ministerial approval to issue all floodplain harvesting licences (as water take charge only licences) for that water source.

Floodplain harvesting (FPH) refers to the capture and use of water flowing across a floodplain that is not covered by another extraction category such as a water access licence.

In the 2016 price review, we accepted WAMC's proposal:

- to set 2 tariff levels for water sources where FPH licences would be introduced – one price schedule that excludes and another price schedule that includes FPH licences and associated estimates of water take
- that the change from the exclusive to the inclusive tariff would apply from 1 July following Ministerial approval to issue FPH licences. For example, if FPH framework is finalised on 30 March 2022 for a particular water source, the pricing schedule incorporating the impact of FPH will take effect from 1 July 2022. If the framework is finalised on 30 March 2023, new pricing schedule will take effect from 1 July 2023, and so forth.

We took this approach because the implementation of FPH licences was being negotiated at the time. The implementation did not happen during the 2016 determination period.

For this review, WAMC did not propose setting 2 tariff levels for water sources where FPH licences would be introduced. Further, WAMC proposed setting prices that exclude FPH licences. However, discussions with officers from DPIE indicated that the agency is negotiating with stakeholders and the NSW Government to implement the FPH licences during the 2021 determination period.

Because of this development, we decided to set 2 tariff levels – exclusive and inclusive of FPH licences for specific water sources. The change from the exclusive to the inclusive tariff would apply following Ministerial approval to issue FPH licences.

Under the impactor pays principle, we consider it appropriate that new FPH licence holders contribute to ongoing management, monitoring and enforcement costs when the licences are created. We understand the marginal level of associated activities will add no additional operating costs to revenue needs. Therefore, the implementation of FPH will spread the revenue requirement over a greater volume of water take in the water sources where it is implemented. This means the water take charge will generally go down for all water users in a water source following the implementation of FPH licences. This is further discussed in Chapter 10.

9.6 We accepted WAMC's special categories of licences

Our decision is:



36. To accept WAMC's proposed special categories of licences as shown in Table 9.1.

There are 3 tariff categories of licences:

1. **Entitlement charge licences** are subject to fixed, or fixed and water take charges (section 9.2).
2. **Water take charge only licences** are only subject to a charge based on the volume of water measured as taken against that licence. Water take charge only licences include 4 subcategories of regulated river licences and 3 subcategories of unregulated river licences. There are no groundwater licences that are water take charge only licences (Table 9.1).

3. **Minimum charge only licences** are subject to MAC and pay their fair share of MDBA and BRC costs. Water taken against these licences will have already been recorded (and charged) under another licence.^g In addition, water taken against this licence can only be used for water impacts management and cannot be used for consumptive or commercial purposes or traded.^h

In the 2016 Determination, we approved WAMC's proposed special categories of licences.¹⁸⁹ For the 2021 determination period, WAMC has proposed to maintain the same special categories, listed below.¹⁹⁰

Table 9.1 Decision on special licence categories for the 2021 determination period

Licence category	Tariff category
Floodplain harvesting (regulated river)	Water take charge only
Major utility (Barnard) (regulated river)	Minimum charge only
Supplementary water (regulated river)	Water take charge only
Supplementary water environmental access (regulated river)	Water take charge only
Supplementary water (Lowbidgee) (regulated river)	Water take charge only
Floodplain harvesting (unregulated river)	Water take charge only
Major utility (Grahamstown) (unregulated river)	Minimum charge only
Supplementary Aboriginal environmental water access (unregulated river)	Water take charge only
Unregulated river (regulated supply)	Minimum charge only
Unregulated river (regulated supply – local water utility)	Minimum charge only
Unregulated river (special additional high flow)	Water take charge only
Salinity and water table management (groundwater)	Minimum charge only

For this review, we decided to accept WAMC's proposal to maintain having these special licence categories and tariff structures. We consider the rationale used in the 2016 review remains relevant.¹⁹¹ We received one stakeholder submission in support of this proposal in response to our Draft Report.¹⁹²

In section 9.1, we discussed our decision to unbundle prices, and for all water users to pay their fair share of MDBA and BRC costs. Accordingly, the water users listed in the Table 9.1 will also pay MDBA and BRC charges. We consider this change will improve the sharing of MDBA and BRC costs between all water users.

^g An example is a major utility in the Barnard Scheme located in the Hunter regulated water source and unregulated river (regulated supply) categories that has multiple licences.

^h Examples include salinity and water table management licences.

9.7 We exempted Aboriginal cultural licences from charges

Under the *Water Management Act 2000* the Minister has the power to issue 3 types of specific purpose access licences to meet the water needs of Indigenous communities, referred to as:

- Aboriginal cultural licences
- Aboriginal community development licences
- Aboriginal commercial licences.

These Indigenous licences are subcategories of other licence types, such as regulated river licences. For example, an Aboriginal cultural subcategory licence would be liable for the same charges as a regular river licence under the 2016 Determination.

Our decisions are:



37. To exempt Aboriginal cultural licences from all WAMC charges for the 2021 Determination while the NSW Government considers its policy position on charges associated with these licences.ⁱ



38. To continue setting charges for Aboriginal Community Development and Aboriginal Commercial licences, as we have in previous determinations.

Indigenous stakeholders – including the NSW Aboriginal Land Council,¹⁹³ Murray Lower Darling River Indigenous Nations¹⁹⁴ and DPIE¹⁹⁵ – strongly opposed charging infrastructure fees for Indigenous subcategory licences. DPIE noted the additional limitations for how water can be used under a subcategory licence compared with a general licence. It also noted water taken under subcategory licences for cultural purposes often remains in the river and supports environmental outcomes.

The NSW Government's draft State Water Strategy identifies:

... while there are some provisions for accessing water for cultural purposes in NSW, these do not currently meet the needs and obligations of Aboriginal people to care for Country or achieve the cultural water flows and water management aspirations¹⁹⁶

The draft strategy identifies an action to develop a state-wide Aboriginal water strategy. This action would involve reviewing and identifying required amendments to the water management legislative framework to enable Aboriginal rights, interests and ownership of water.

After engaging with stakeholders we consider there is a strong case for exempting Aboriginal cultural licences for the 2021 Determination while the NSW Government develops a revised approach to these licences in the future. While accounted for this exemption in entitlement and water take volume forecasts for relevant water sources, there is no material impact on entitlement and water take charges.

ⁱ We also decided to exempt Aboriginal cultural licence holders from rural bulk water charges in our review of Water NSW's rural bulk water charges.

Regarding Aboriginal community development licences and Aboriginal commercial licences:

- no licences of either of these subtypes appear to have been issued
- there is no clear policy guidance on what conditions or use limitations might be placed on these licences if they were issued in future.

Given this limited information, we decided to continue setting charges for these 2 subcategories. If the NSW Government decides to issue these licences during the 2021 determination period and considers it is appropriate to exempt them from fees, it can provide Water NSW with a subsidy to do so.

9.8 We set a separate price for Water NSW (South Coast unregulated rivers)

Our decision is:



39. To apply a separate WAMC price to Water NSW, which will recover the user share of metropolitan water planning costs. The price will be an additional fixed charge (\$ per ML of entitlement or unit share) applied to the water access licences held by Water NSW in the South Coast (unregulated rivers) water source.

In the 2016 Determination, we set a separate price for Water NSW to recover the costs of metropolitan water planning for the Greater Sydney region based on the impactor pays principle. We concluded that the impactor was Water NSW.¹⁹⁷ Water NSW is a major water utility that, on behalf of its customers, creates the need for metropolitan water planning to ensure a suitable balance between water supply and demand over time. Water access licences held by major water utilities provide for this demand. This means that WAMC can charge a special levy to Water NSW to recover the cost of water planning for the Greater Sydney region. Consequently, Water NSW has passed this cost onto its customers in the relevant region.

For this review, WAMC proposed to continue setting a separate charge to Water NSW to recover the costs of metropolitan water planning for the Greater Sydney region. In Chapters 2 and 3, we outlined WAMC's costs proposal and our decisions on these planning costs.

We decided to maintain the approach set out in the 2016 price review – that is, setting a separate price to recover the user share of efficient costs of metropolitan water planning directly from Water NSW. The rationale outlined in the 2016 Determination continues to remain relevant over the 2021 determination period. The separate price is further discussed in Chapter 10 and bill impact on Water NSW is discussed in Chapter 11.

9.9 We identified opportunities for WAMC to consider

WAMC's current price structure is complex. As outlined in this chapter, WAMC has 1-part and 2-part tariffs for the majority of the 27 water sources. Further, these prices are currently determined by an indirect cost allocation process where costs are allocated between water sources based on cost drivers that vary by activity.

We encourage WAMC to consider this issue further over the 2021 determination period and in the lead up to its next pricing proposal. Issues to consider include whether WAMC can move towards greater direct cost attribution, whether the cost drivers used to allocate costs between water sources can be improved, and whether there would be merit in simplifying this pricing approach in the future. We encourage WAMC to investigate these issues and consult with stakeholders on potential options including the likely costs, benefits and other impacts of these options.

Chapter 10 »

Prices for water management services

10

Summary of our decisions on water management prices

For regulated water sources, total entitlement and water take charges increase by about 16% on average over the 2021 determination period.

The changes in prices are driven by the overall increase in efficient costs and a higher proportion of costs allocated to these water sources than allowed in the 2016 price review.

The majority of charges will be transitioning towards full cost recovery over the 2021 determination period.

For unregulated water sources, total entitlement and water take charges increase by about 8% on average over the 2021 determination period.

The changes in prices are mainly driven by the overall increase in efficient costs and movements in forecast entitlement and water take volumes.

The movement in entitlement and water take volumes during the 2016 determination period has influenced the price movements over the 2021 determination period.

For groundwater sources, total entitlement and water take charges increase by about 3% on average over the 2021 determination period.

The changes in prices are driven by changes in the level of efficient costs and changes in how costs are allocated between sources.

Our pricing decisions are based on our decisions on the notional revenue requirement (NRR), cost shares and cost allocations, price structures, and forecast entitlements and water take volumes for the 2021 determination period. These decisions are discussed in Chapters 6 to 9 of this Final Report.

This chapter presents prices for water users in regulated water, unregulated water and groundwater sources that are on 1-part and 2-part tariffs. We also set a minimum annual charge (MAC) to recover the efficient administrative costs of managing licences with small entitlements. These charges are set to either fully recover the user share of the NRR on a water source basis, or transition to full recovery of the user share of the NRR. Some water sources will achieve full cost recovery over the 2021 determination period, while others will achieve full cost recovery over a number of determination periods.

We also present prices that include the impacts of floodplain harvesting (FPH). This reflects our decision to set separate prices for a water source if the Minister approves issuing FPH licences for the relevant water source. Finally, we discuss our decision to continue to set a separate price for Water NSW to recover the costs of metropolitan water planning for the Greater Sydney region.

The changes in prices are the result of the combined effects of:

- changes in efficient costs
- changes in cost allocations between water sources
- changes in underlying entitlement and water take forecasts
- maintaining the 70:30 price structure.

In some water sources these factors have offsetting effects, and in others they have compounding effects. We prepared fact sheets available on our website that explain key drivers of prices for each water source.

We report prices on the following basis (where applicable) in \$2021–22:^a

- WAMC's water management charges for all water sources
- MDBA charges for relevant water sources
- BRC charges for relevant water sources
- combined charges (i.e. the sum of the above charges).

We provided combined prices to show the changes in prices over the 2021 determination period relative to current bundled 2020–21 prices. This approach means percentage changes in prices in this chapter include the impacts of inflation from 2020–21 to 2021–22, but not from 2022–23 onwards. The determination sets prices in \$2021–22 from 1 October 2021, and then allows WAMC to adjust these prices by changes in the consumer price index (CPI) from 2022–23 onwards.

10.1 We set prices for water users in regulated water sources

Our decision is:



40. To set the maximum prices shown in Table 10.1, Table 10.2, Table 10.3 and Table 10.4 for water users in regulated water sources.

10.1.1 Entitlement charges will increase for most regulated water sources

Over the 2021 determination period, combined entitlement charges for 10 water sources are increasing at different levels (Tables 10.1 and 10.2):

- The Border regulated water source will face the highest increase (64%), because it will incur all 3 charges (WAMC's water management, MDBA and BRC).
- The majority of other water sources (i.e. except Namoi) will also face price increases, but at a lower rate than Border. For Namoi, the combined entitlement charges from 2021–22 are at the same level as current charges.

^a In the Draft Report, we presented prices in \$2020–21 basis. For the Final Report, we have presented prices in \$2021–22 to align with the Final Determination.

A number of factors are driving these higher charges for regulated water sources:

- a higher level of efficient costs compared with the 2016 price review
- WAMC's water management charges are transitioning to full cost recovery levels, placing upward pressure on prices for water sources that are not at full cost recovery in 2020–21
- MDBA and BRC charges are set at full cost recovery, which affects water sources that receive MDBA and BRC services, and places upward pressure on prices.

Table 10.1 Decision on WAMC, MDBA and BRC component charges for regulated rivers – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.76	1.80	1.85	1.90
Gwydir	1.19	1.22	1.25	1.29
Namoi	1.92	1.92	1.92	1.92
Peel	2.99	3.06	3.14	3.14
Lachlan	1.11	1.14	1.16	1.19
Macquarie	1.34	1.38	1.41	1.45
Murray	1.12	1.14	1.17	1.20
Murrumbidgee	0.95	0.98	1.00	1.03
North Coast	4.60	4.71	4.83	4.95
Hunter	3.24	3.32	3.40	3.49
South Coast	3.59	3.68	3.77	3.86
MDBA component^a				
Border	0.54	0.54	0.54	0.54
Gwydir	0.72	0.72	0.72	0.72
Namoi	0.82	0.82	0.82	0.82
Peel	0.25	0.25	0.25	0.25
Lachlan	0.33	0.33	0.33	0.33
Macquarie	0.45	0.45	0.45	0.45
Murray	0.63	0.63	0.63	0.63
Murrumbidgee	0.65	0.65	0.65	0.65
BRC component^b				
Border	1.30	1.30	1.30	1.30

a. MDBA prices will only apply to 8 out of 11 regulated water sources – i.e. Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray and Murrumbidgee. MDBA prices do not apply to North Coast, Hunter and South Coast water sources because these are outside the responsibility of MDBA.

b. BRC prices will only apply to one out of 11 regulated water sources – i.e. Border. BRC prices do not apply to the remaining regulated water sources because these do not receive services from BRC.

Source: IPART analysis.

Table 10.2 Decision on combined charges for regulated rivers – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.28	3.60	3.64	3.69	3.74	64%
Gwydir	1.62	1.91	1.94	1.97	2.01	24%
Namoi	2.73	2.74	2.74	2.74	2.74	0%
Peel	2.67	3.24	3.31	3.39	3.39	27%
Lachlan	1.43	1.44	1.47	1.49	1.52	6%
Macquarie	1.71	1.79	1.83	1.86	1.90	11%
Murray	1.54	1.75	1.77	1.80	1.83	19%
Murrumbidgee	1.41	1.60	1.63	1.65	1.68	19%
North Coast	3.97	4.60	4.71	4.83	4.95	25%
Hunter	3.12	3.24	3.32	3.40	3.49	12%
South Coast	3.34	3.59	3.68	3.77	3.86	15%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.1.2 Water take charges will increase for all regulated water sources

All water sources will face water take charge increases at varying rates over the 2021 determination period. Tables 10.3 and 10.4 show the breakdown of the different components and the combined water take prices.

Table 10.3 Decision on WAMC, MDBA and BRC component charges for regulated rivers – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.41	1.45	1.48	1.52
Gwydir	1.24	1.27	1.30	1.33
Namoi	1.54	1.54	1.54	1.54
Peel	4.67	4.79	4.90	4.90
Lachlan	1.76	1.81	1.85	1.90
Macquarie	1.63	1.67	1.71	1.75
Murray	0.81	0.83	0.85	0.87
Murrumbidgee	0.70	0.72	0.74	0.76
North Coast	5.85	6.00	6.15	6.30
Hunter	2.21	2.27	2.33	2.38
South Coast	5.39	5.52	5.66	5.80
MDBA component				
Border	0.26	0.26	0.26	0.26
Gwydir	0.44	0.44	0.44	0.44
Namoi	0.39	0.39	0.39	0.39

Water source	2021–22	2022–23	2023–24	2024–25
Peel	0.23	0.23	0.23	0.23
Lachlan	0.31	0.31	0.31	0.31
Macquarie	0.32	0.32	0.32	0.32
Murray	0.27	0.27	0.27	0.27
Murrumbidgee	0.28	0.28	0.28	0.28
BRC component				
Border	0.62	0.62	0.62	0.62

Source: IPART analysis.

Table 10.4 Decision on combined charges for regulated rivers – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	1.78	2.29	2.33	2.36	2.40	35%
Gwydir	1.40	1.68	1.71	1.74	1.77	26%
Namoi	1.84	1.93	1.93	1.93	1.93	5%
Peel	4.76	4.90	5.02	5.13	5.13	8%
Lachlan	1.92	2.07	2.12	2.16	2.21	15%
Macquarie	1.85	1.95	1.99	2.03	2.07	12%
Murray	1.10	1.08	1.10	1.12	1.14	4%
Murrumbidgee	0.94	0.98	1.00	1.02	1.04	11%
North Coast	6.12	5.85	6.00	6.15	6.30	3%
Hunter	2.14	2.21	2.27	2.33	2.38	11%
South Coast	5.32	5.39	5.52	5.66	5.80	9%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.2 We set prices for water users in unregulated water sources

Our decision is:



41. To set the maximum prices shown in Table 10.5, Table 10.6, Table 10.7, Table 10.8 and Table 10.9 for water users in unregulated water sources.

Some unregulated water sources will face decreases in charges over the 2021 determination period, while others will face increases:

- For 2-part tariffs, the majority of unregulated water sources will face lower combined entitlement charges (up to 60%). However, these are offset by higher water take charges (up to 66%). On a net basis, total charges^b will increase by an average of about 8% across all unregulated water sources over the 2021 determination period.
- For 1-part tariffs, 11 out of 12 unregulated water sources will face combined entitlement charge increases of around 10% on average over the 2021 determination period. One water source will experience decreases in charges by around 15%.

10.2.1 Entitlement charges for 2-part tariffs will decrease for most water sources

Most unregulated water sources will experience combined decreases in entitlement charges over the 2021 determination period (Tables 10.5 and 10.6).

The largest decreases will occur in Border, Gwydir, Namoi and Peel (collectively referred to as the North West region):

- Costs allocated to these water sources are higher than allowed in the 2016 Determination.
- However, there are more water users on 2-part tariffs, placing downward pressure on entitlement charges. In the 2016 price review, we estimated water users on 2-part tariffs would have around 10,000 ML of entitlements.¹⁹⁸ For the 2021 determination period, we estimated water users would have around 130,000 ML of entitlements.^c

Table 10.5 Decision on WAMC, MDBA and BRC component charges for unregulated rivers – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	0.77	0.79	0.81	0.83
Gwydir	0.77	0.79	0.81	0.83
Namoi	0.77	0.79	0.81	0.83
Peel	0.77	0.79	0.81	0.83
Lachlan	1.94	1.98	2.03	2.08
Macquarie	1.94	1.98	2.03	2.08
Far West	2.94	2.94	2.94	2.94
Murray	1.62	1.66	1.70	1.74
Murrumbidgee	2.83	2.90	2.98	3.05
North Coast	4.39	4.50	4.62	4.73
Hunter	1.27	1.30	1.33	1.36
South Coast	1.58	1.58	1.58	1.58

^b For each water source, total charges are equivalent to the sum of combined entitlement charges and combined water take charges.

^c In Chapter 8 we present the entitlement forecasts for unregulated water sources for water users that would be on 1-part and 2-part tariffs in Table 8.4. We also present the total forecast entitlement over the next 4 years, which is 3.2 million ML. This forecast is 4.5% higher than the total forecast entitlement we used for unregulated water sources in the 2016 price review.

Water source	2021–22	2022–23	2023–24	2024–25
MDBA component^a				
Border	0.09	0.09	0.09	0.09
Gwydir	0.09	0.09	0.09	0.09
Namoi	0.09	0.09	0.09	0.09
Peel	0.09	0.09	0.09	0.09
Lachlan	0.13	0.13	0.13	0.13
Macquarie	0.13	0.13	0.13	0.13
Far West	0.79	0.79	0.79	0.79
Murray	0.16	0.16	0.16	0.16
Murrumbidgee	0.12	0.12	0.12	0.12
BRC component^b				
Far West	1.29	1.29	1.29	1.29

a. MDBA prices will only apply to 9 out of 12 unregulated water sources – i.e. Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Far West, Murray and Murrumbidgee. MDBA prices do not apply to North Coast, Hunter and South Coast water sources because these are outside the responsibility of MDBA.

b. BRC prices will only apply to 1 out of 12 unregulated water sources – i.e. Far West. BRC prices do not apply to the remaining unregulated water sources because these do not receive services from BRC.

Source: IPART analysis.

Table 10.6 Decision on combined charges for unregulated rivers – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.31	0.86	0.88	0.90	0.92	–60%
Gwydir	2.31	0.86	0.88	0.90	0.92	–60%
Namoi	2.31	0.86	0.88	0.90	0.92	–60%
Peel	2.31	0.86	0.88	0.90	0.92	–60%
Lachlan	2.69	2.07	2.11	2.16	2.21	–18%
Macquarie	2.69	2.07	2.11	2.16	2.21	–18%
Far West	4.13	5.02	5.02	5.02	5.02	22%
Murray	2.64	1.78	1.82	1.86	1.90	–28%
Murrumbidgee	3.27	2.95	3.02	3.10	3.17	–3%
North Coast	4.59	4.39	4.50	4.62	4.73	3%
Hunter	1.30	1.27	1.30	1.33	1.36	5%
South Coast	1.75	1.58	1.58	1.58	1.58	–10%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.

Source: IPART analysis.

10.2.2 Water take charges for 2-part tariffs will increase for most unregulated water sources

The majority of unregulated water sources will experience increases in their water take charges over the 2021 determination period (Tables 10.7 and 10.8). However, the increases will vary for each water source because of our decisions on:

- transitioning WAMC's water management water take charges towards full cost recovery at 2.5% per year (before inflation)
- setting MDBA and BRC water take charges at full cost recovery from 2021–22.

For some water sources the increases in water take charges are offset by decreases in entitlement charges. On a net basis, the magnitude of the changes for total charges is not as large as changes for entitlement or water take charges only. This outcome is particularly apparent when we consider the price movements for 1-part tariffs in the next section.

Table 10.7 Decision on WAMC, MDBA and BRC component charges for unregulated rivers – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	3.57	3.66	3.75	3.85
Gwydir	3.57	3.66	3.75	3.85
Namoi	3.57	3.66	3.75	3.85
Peel	3.57	3.66	3.75	3.85
Lachlan	3.59	3.68	3.77	3.87
Macquarie	3.59	3.68	3.77	3.87
Far West	2.17	2.17	2.17	2.17
Murray	5.21	5.34	5.48	5.61
Murrumbidgee	6.36	6.52	6.68	6.85
North Coast	5.47	5.61	5.75	5.89
Hunter	2.29	2.34	2.40	2.46
South Coast	1.18	1.18	1.18	1.18
MDBA component				
Border	0.25	0.25	0.25	0.25
Gwydir	0.25	0.25	0.25	0.25
Namoi	0.25	0.25	0.25	0.25
Peel	0.25	0.25	0.25	0.25
Lachlan	0.14	0.14	0.14	0.14
Macquarie	0.14	0.14	0.14	0.14
Far West	0.34	0.34	0.34	0.34
Murray	0.30	0.30	0.30	0.30
Murrumbidgee	0.16	0.16	0.16	0.16
BRC component				
Far West	0.56	0.56	0.56	0.56

Source: IPART analysis.

Table 10.8 Decision on combined charges for unregulated rivers – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.47	3.82	3.91	4.00	4.10	66%
Gwydir	2.47	3.82	3.91	4.00	4.10	66%
Namoi	2.47	3.82	3.91	4.00	4.10	66%
Peel	2.47	3.82	3.91	4.00	4.10	66%
Lachlan	2.91	3.73	3.82	3.92	4.01	38%
Macquarie	2.91	3.73	3.82	3.92	4.01	38%
Far West	2.53	3.07	3.07	3.07	3.07	21%
Murray	4.21	5.51	5.64	5.78	5.91	40%
Murrumbidgee	5.81	6.52	6.68	6.84	7.01	21%
North Coast	4.93	5.47	5.61	5.75	5.89	20%
Hunter	2.13	2.29	2.34	2.40	2.46	15%
South Coast	1.49	1.18	1.18	1.18	1.18	–21%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.2.3 Entitlement charges for 1-part tariffs will increase for most unregulated water sources

The majority of water sources will face increases in entitlement charges for 1-part tariffs (Table 10.9):

- Far West will experience the largest increase at 22% from 2020–21 to 2024–25 because it will pay all 3 components, which are set at full cost recovery levels.
- Border, Gwydir, Namoi, Peel, Lachlan, Macquarie, Murray and Murrumbidgee will experience increases in charges within a range of 5% to 11% from 2020–21 to 2024–25. The actual price movements for each water source are influenced by our decisions on transitioning towards or setting charges at full cost recovery levels.
- South Coast will have lower entitlement charges than current 2020–21 charges. The costs allocated to this water source are lower than allowed in the 2016 Determination (Chapter 7 contains our decisions on cost drivers).

Table 10.9 Decision on combined charges for unregulated rivers – fixed charges for 1-part tariff for the 2021 determination period (\$/ML, \$2020–21)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	4.78	4.68	4.79	4.90	5.02	5%
Gwydir	4.78	4.68	4.79	4.90	5.02	5%
Namoi	4.78	4.68	4.79	4.90	5.02	5%
Peel	4.78	4.68	4.79	4.90	5.02	5%
Lachlan	5.60	5.79	5.93	6.08	6.22	11%
Macquarie	5.60	5.79	5.93	6.08	6.22	11%
Far West	6.66	8.09	8.09	8.09	8.09	22%
Murray	6.85	7.29	7.46	7.64	7.81	14%
Murrumbidgee	9.08	9.47	9.70	9.94	10.18	12%
North Coast	9.52	9.86	10.11	10.37	10.62	12%
Hunter	3.43	3.56	3.64	3.73	3.82	11%
South Coast	3.24	2.76	2.76	2.76	2.76	–15%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.3 We set prices for water users in groundwater sources

Our decision is:



42. To set the maximum prices shown in Table 10.10, Table 10.11, Table 10.12, Table 10.13 and Table 10.14 for water users in groundwater sources.

On a net basis, total charges for Border and Inland are decreasing, while total charges for Murrumbidgee and Coastal groundwater are increasing over the 2021 determination period:

- For Border and Inland, total charges are decreasing because costs allocated to these sources are lower than allowed in the 2016 Determination.
- For Murrumbidgee, total charges are increasing because the charges are transitioning towards full cost recovery over the 2021 determination period.
- For Coastal, total charges are increasing because allocated costs are higher than allowed in the 2016 Determination.

10.3.1 Entitlement charges for 2-part tariffs will increase for groundwater sources

The Inland groundwater source will face a marginal increase in combined entitlement charges. The combined entitlement charges for the Border groundwater source are higher than for Inland because Border attracts BRC charges. For Murrumbidgee and Coastal groundwater sources, the WAMC entitlement charges are transitioning towards full cost recovery at a capped rate of 2.5% per year (before inflation) over the 2021 determination period. Murrumbidgee will face a larger increase in entitlement charges because it will be paying MDBA component charges, which are set at full cost recovery levels. Our decisions are set out in Tables 10.10 and 10.11.

Table 10.10 Decision on WAMC, MDBA and BRC component charges for groundwater sources – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Inland	3.73	3.73	3.73	3.73
Border	3.73	3.73	3.73	3.73
Murrumbidgee	2.99	3.07	3.14	3.22
Coastal	1.80	1.84	1.89	1.94
MDBA component^a				
Inland	0.19	0.19	0.19	0.19
Border	0.19	0.19	0.19	0.19
Murrumbidgee	0.19	0.19	0.19	0.19
BRC component^b				
Border	0.30	0.30	0.30	0.30

a. MDBA prices will only apply to 3 of 4 groundwater sources – i.e. Border, Inland and Murrumbidgee. MDBA prices do not apply to Coastal water sources because these sources are outside the responsibility of MDBA.

b. BRC prices will only apply to Border. BRC prices do not apply to the remaining groundwater sources because these do not receive services from BRC.

Source: IPART analysis.

Table 10.11 Decision on combined charges for groundwater sources – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Inland	3.86	3.92	3.92	3.92	3.92	2%
Border	3.86	4.22	4.22	4.22	4.22	9%
Murrumbidgee	2.56	3.18	3.26	3.33	3.41	33%
Coastal	1.76	1.80	1.84	1.89	1.94	10%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.

Source: IPART analysis.

10.3.2 Water take charges for 2-part tariffs will decrease for most groundwater sources

Combined water take charges are decreasing for 3 groundwater sources over the 2021 determination period – that is, the Inland, Border and Murrumbidgee groundwater sources. Costs allocated to the Coastal groundwater source have increased between the 2016 and 2021 determination periods, placing upward pressure on water take charges. Our decisions are set out in Tables 10.12 and 10.13.

Table 10.12 Decision on WAMC, MDBA and BRC component charges for groundwater sources – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Inland	2.24	2.24	2.24	2.24
Border	2.24	2.24	2.24	2.24
Murrumbidgee	1.79	1.84	1.89	1.93
Coastal	3.44	3.52	3.61	3.70
MDBA component				
Inland	0.07	0.07	0.07	0.07
Border	0.07	0.07	0.07	0.07
Murrumbidgee	0.07	0.07	0.07	0.07
BRC component				
Border	0.13	0.13	0.13	0.13

Source: IPART analysis.

Table 10.13 Decision on combined charges for groundwater sources – water take component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Inland	3.13	2.31	2.31	2.31	2.31	–26%
Border	3.13	2.44	2.44	2.44	2.44	–22%
Murrumbidgee	2.08	1.86	1.91	1.96	2.00	–4%
Coastal	3.29	3.44	3.52	3.61	3.70	12%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.

Source: IPART analysis.

10.3.3 Entitlement charges for 1-part tariffs will increase for some groundwater sources

Similar to 2-part tariff price movements (sections 10.3.1 and 10.3.2), price movements for 1-part tariff prices vary, reflecting that entitlement charges for 1-part tariffs are the sum of the entitlement charges and the water take charges for 2-part tariffs (Table 10.14).

Table 10.14 Decision on combined charges for groundwater sources – fixed charges for 1-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Inland	6.99	6.23	6.23	6.23	6.23	–11%
Border	6.99	6.66	6.66	6.66	6.66	–5%
Murrumbidgee	4.64	5.04	5.17	5.29	5.41	17%
Coastal	5.05	5.24	5.36	5.50	5.64	12%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.4 We set separate prices for water sources where floodplain harvesting may roll out

Our decision is:



43. To set the maximum prices shown in Table 10.15, Table 10.16, Table 10.17, Table 10.18, Table 10.19, Table 10.20, Table 10.21, Table 10.22 and Table 10.23 in water sources where the floodplain harvesting framework may roll out.

We decided to continue setting separate charges for specific water sources that account for the effect of FPH licences.

While the timing of implementation is unknown, providing for separate pricing schedule for FPH licences will facilitate the switch to lower charges if Ministerial approval is granted. The switch will affect all water users of the relevant water sources, not just FPH licence holders, during the 2021 determination period.

10.4.1 Charges for regulated rivers would not change with FPH

FPH charges may apply to 4 regulated water sources over the 2021 determination period, depending on future Ministerial approval. Tables 10.15 and 10.16 show entitlement charges that will apply to these water sources if FPH licencing is implemented. These charges are the same as charges without FPH (section 10.1). The main changes are expected to occur with water take charges, which are discussed in the next section.

Table 10.15 Decision on WAMC, MDBA and BRC component charges for regulated rivers with floodplain harvesting – fixed component of 2-part tariff for the 2021 determination period (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.76	1.80	1.85	1.90
Gwydir	1.19	1.22	1.25	1.29
Namoi	1.92	1.92	1.92	1.92
Macquarie	1.34	1.38	1.41	1.45
MDBA component^a				
Border	0.54	0.54	0.54	0.54
Gwydir	0.72	0.72	0.72	0.72
Namoi	0.82	0.82	0.82	0.82
Macquarie	0.45	0.45	0.45	0.45
BRC component^b				
Border	1.30	1.30	1.30	1.30

a. MDBA prices will only apply to specific regulated water sources. MDBA prices will apply to Border, Gwydir, Namoi and Macquarie regulated water sources for FPH pricing purposes.

b. BRC prices will only apply to Border regulated water source for FPH pricing purposes.

Source: IPART analysis.

Table 10.16 Decision on combined charges for regulated rivers with floodplain harvesting – fixed component of 2-part tariff (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.28	3.60	3.64	3.69	3.74	64%
Gwydir	1.62	1.91	1.94	1.97	2.01	24%
Namoi	2.73	2.74	2.74	2.74	2.74	0%
Macquarie	1.71	1.79	1.83	1.86	1.90	11%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.

Source: IPART analysis.

Table 10.17 and Table 10.18 show water take charges that will apply for all water users when FPH is implemented.

Water users will face decreases in charges (except for Border) compared with 2020–21 charges, due to higher water take volumes which place downward pressure on charges.

Combined water take charges with FPH (Table 10.18) are lower than water charges with no FPH (Table 10.4). Charges are lower because forecast water take volumes under FPH are higher while costs are the same, which means the costs are spread over a larger volume.

Table 10.17 Decision on WAMC, MDBA and BRC component charges for regulated rivers with floodplain harvesting – water take component of 2-part tariff (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.11	1.13	1.16	1.19
Gwydir	0.87	0.89	0.91	0.94
Namoi	1.17	1.17	1.17	1.17
Macquarie	1.40	1.44	1.47	1.51
MDBA component				
Border	0.20	0.20	0.20	0.20
Gwydir	0.31	0.31	0.31	0.31
Namoi	0.30	0.30	0.30	0.30
Macquarie	0.28	0.28	0.28	0.28
BRC component				
Border	0.49	0.49	0.49	0.49

Source: IPART analysis.

Table 10.18 Decision on combined charges for regulated rivers with floodplain harvesting – water take component of 2-part tariff (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	1.78	1.80	1.82	1.85	1.88	5%
Gwydir	1.40	1.18	1.20	1.22	1.25	–11%
Namoi	1.84	1.47	1.47	1.47	1.47	–20%
Macquarie	1.85	1.68	1.72	1.75	1.79	–3%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.4.2 Changes in charges for unregulated rivers with FPH would vary

Table 10.19 and Table 10.20 show the entitlement charges that may apply to water users on 2-part tariffs for 5 unregulated water sources when FPH applies.

Entitlement charges are forecast to decrease for 4 out of 5 water sources compared with 2020–21 charges. This decrease is because costs allocated to these sources are lower than costs set in the 2016 price review.

Entitlement charges in unregulated rivers are expected to be higher with FPH than charges with no FPH (Table 10.6). The results are less intuitive because of the 2 factors used in setting the price structure – that is:

- the 70:30 fixed-to-variable price structure in place^d
- the relationship between 2-part tariff charges and 1-part tariff charges.^e

As discussed in the next section, water take charges will be lower when FPH is introduced. Entitlement charges will need to increase marginally to generate 70% of revenue from 2-part and 1-part entitlement charges.

Table 10.19 Decision on WAMC, MDBA and BRC component charges for unregulated rivers with floodplain harvesting – fixed component of 2-part tariff (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.42	1.45	1.49	1.53
Gwydir	1.42	1.45	1.49	1.53
Namoi	1.42	1.45	1.49	1.53
Peel	1.42	1.45	1.49	1.53
Far West	3.01	3.01	3.01	3.01
MDBA component^a				
Border	0.15	0.15	0.15	0.15
Gwydir	0.15	0.15	0.15	0.15
Namoi	0.15	0.15	0.15	0.15
Peel	0.15	0.15	0.15	0.15
Far West	0.81	0.81	0.81	0.81
BRC component^b				
Far West	1.31	1.31	1.31	1.31

a. MDBA prices will only apply to specific regulated water sources. MDBA prices will apply to Border, Gwydir, Namoi, Peel and Far West unregulated water sources for FPH pricing purposes.

b. BRC prices will only apply to Far West unregulated water source for FPH pricing purposes.

Source: IPART analysis.

^d In Chapter 9, we discussed how we set price structures so 70% of revenue will be recovered from 2-part tariff entitlement charges and 1-part tariff entitlement charges, and the remaining 30% from 2-part tariff water take charges.

^e In Chapter 9 and earlier sections of Chapter 10, we showed the 1-part entitlement charges for an unregulated water source are equivalent to the sum of 2-part entitlement and water take charges for that water source.

Table 10.20 Decision on combined charges for unregulated rivers with floodplain harvesting – fixed component of 2-part tariff (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.31	1.57	1.60	1.64	1.68	–27%
Gwydir	2.31	1.57	1.60	1.64	1.68	–27%
Namoi	2.31	1.57	1.60	1.64	1.68	–27%
Peel	2.31	1.57	1.60	1.64	1.68	–27%
Far West	4.13	5.13	5.13	5.13	5.13	24%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

Table 10.21 and Table 10.22 show water take charges that will apply for all water users when FPH is implemented.

Water take charges under FPH are forecast to be lower than 2020–21 charges for 4 out of 5 water sources. Water take charges with FPH are also lower than charges with no FPH (Table 10.8). In both cases, the higher water take volumes are a result of FPH placing downward pressure on prices.

Table 10.21 Decision on WAMC, MDBA and BRC component charges for unregulated rivers with floodplain harvesting – water take component of 2-part tariff (\$/ML, \$2021–22)

Water source	2021–22	2022–23	2023–24	2024–25
WAMC water management component				
Border	1.96	2.01	2.06	2.11
Gwydir	1.96	2.01	2.06	2.11
Namoi	1.96	2.01	2.06	2.11
Peel	1.96	2.01	2.06	2.11
Far West	1.87	1.87	1.87	1.87
MDBA component				
Border	0.12	0.12	0.12	0.12
Gwydir	0.12	0.12	0.12	0.12
Namoi	0.12	0.12	0.12	0.12
Peel	0.12	0.12	0.12	0.12
Far West	0.29	0.29	0.29	0.29
BRC component				
Far West	0.48	0.48	0.48	0.48

Source: IPART analysis.

Table 10.22 Decision on combined charges for unregulated rivers with floodplain harvesting – water take component of 2-part tariff (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	2.47	2.08	2.13	2.18	2.23	–10%
Gwydir	2.47	2.08	2.13	2.18	2.23	–10%
Namoi	2.47	2.08	2.13	2.18	2.23	–10%
Peel	2.47	2.08	2.13	2.18	2.23	–10%
Far West	2.53	2.64	2.64	2.64	2.64	4%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

Table 10.23 shows entitlement charges that would apply to water users on 1-part tariffs for 5 unregulated water sources when FPH is implemented. Most charges are lower than current 2020–21 charges. This decline is due to the combined effect of lower costs allocated to these water sources and higher water take volumes as a result of FPH.

Table 10.23 Decision on combined charges for unregulated rivers – fixed charges for 1-part tariff (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
Border	4.78	3.65	3.73	3.82	3.91	–18%
Gwydir	4.78	3.65	3.73	3.82	3.91	–18%
Namoi	4.78	3.65	3.73	3.82	3.91	–18%
Peel	4.78	3.65	3.73	3.82	3.91	–18%
Far West	6.66	7.77	7.77	7.77	7.77	17%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.5 We set a minimum annual charge

Our decision is:



44. To set the minimum annual charges shown in Table 10.24.

In Chapter 9, we discussed our decision to transition the MAC to full cost recovery at a rate of 2.5% per year, or 10.4% over the 2021 determination period in real terms (i.e. before inflation). The MAC for each year of the determination period are shown in Table 10.24.

Table 10.24 Decision on minimum access charge for the 2021 determination period (\$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
All water sources	213.74	221.50	227.03	232.71	238.53	12%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

10.6 We set a separate price for Water NSW (South Coast unregulated river)

Our decision is:



45. To set the separate price for Water NSW (South Coast unregulated river) shown in Table 10.25.

In Chapter 9 we outlined our decision to continue to set a separate charge for Water NSW to recover the specific costs of metropolitan water planning for the Greater Sydney region. The costs of metropolitan water planning will be recovered from Water NSW through a specific charge. The price will be an additional fixed charge (\$ per ML of entitlement or unit share) applied to the water access licences held by Water NSW in the South Coast unregulated water source (Table 10.25).

In Chapter 3, we discussed our decision on costs of metropolitan water planning. Over the 2021 determination period, costs of metropolitan water planning are lower than 2016 costs. Therefore, the separate charge for Water NSW is decreasing from \$0.91 in 2020–21 to \$0.41 in 2021–22.

Table 10.25 Decision on special entitlement charge for Water NSW for the 2021 determination period (\$/ML, \$2021–22)

Water source	2020–21 current (\$2020–21)	2021–22	2022–23	2023–24	2024–25	% change from current to 2024–25
South Coast	0.91	0.41	0.41	0.41	0.41	–55%

Note: Figures may not add due to rounding. The percentage change includes the impact of inflation from 2020–21 to 2021–22.
Source: IPART analysis.

Chapter 11 »

Impacts of our decisions on
WAMC's prices

11

Summary of impacts on WAMC water users and WAMC

Bill impacts vary between water sources

Annual bills will increase for all regulated water sources in 2021–22. Border will face the highest bill increase at \$610, and the Namoi will face the lowest bill increase at \$24.

Bill impacts vary for unregulated water sources in 2021–22. For water users on 2-part tariffs, annual bills will decrease by up to \$240 for 8 water sources and increase in 4 water sources. For water users on a 1-part tariff, annual bills will increase for 7 water sources and decrease in 5 water sources.

For groundwater sources, bills will decrease in the Border and Inland regions, and increase in the Murrumbidgee and Coastal regions in 2021–22.

Bills will increase by \$25 to \$37 in 2021–22 for very small water users paying the minimum annual charge (MAC). For water users closer to the MAC threshold, bills will increase by more because of Murray–Darling Basin Authority (MDBA) and Dumaresq–Barwon Border Rivers Commission (BRC) charges.

Bill impacts are reasonable

We found WAMC bills represent a small portion of total bills paid by water users in regulated water sources.

We calculated changes in customers' bills from 2011–12 and found that, on average, bills are increasing by less than 2.5% per year (before inflation).

We also compare bills with farming businesses' gross value of irrigated agricultural production, and usage charges for 2021–22 with prices paid for allocations in the water trading market.

WAMC will be able to meet its environmental obligations

WAMC can recover all efficient costs it incurs in meeting its environmental obligations through prices and NSW Government contributions.

Prices are not fully cost reflective, and NSW Government contributions will be required

NSW Government contributions over the 2021 determination period will be \$73.7 million higher compared with the 2016 determination period, but remain lower than WAMC's proposal.

We considered the impact of our maximum prices on water users and WAMC before finalising our decisions. We also considered our prices in the context of matters listed in section 15 of the *Independent Pricing and Regulatory Tribunal Act 1992* (IPART Act) (Appendix A). Each of these issues is discussed in turn in the sections below.

The impacts analysis in this chapter excludes the impact of fee-for-service such as consent transactions and metering services, which are discussed on Chapter 12 and Chapter 13 respectively.

11.1 Bill impacts vary between water sources

Our prices directly affect the amount paid annually by water users. The bill impact for a particular water user depends on the volume of entitlements they own, how much water they use, and whether they are subjected to the minimum annual charge (MAC).

We analysed a range of scenarios across all water sources and different water users to assess the impact of prices for the 2021 determination period against 2020–21 prices. Specifically, we analysed the impact on:

- the typical water user on 2-part tariffs not subject to the MAC with 500 megalitres (ML) of entitlements at 60% usage of entitlements
- the typical water user on a 1-part tariff not subject to the MAC with 500 ML of entitlements
- water users subject to the MAC
- the typical water user affected by the floodplain harvesting (FPH) framework with 500 ML of entitlements
- Water NSW as a licence holder in the South Coast unregulated water source
- the typical water user that pays WAMC 2-part tariffs and Water NSW rural bulk water charges, with 500 ML of general security entitlements and 60% usage of entitlements.

Due to the delay in WAMC charges taking effect on 1 October 2021, bills for 2021–22 include 3 months of 2020–21 prices, and 9 months of 2021–22 prices.

11.1.1 Impacts on 2-part tariff water users not on the minimum annual charge vary

For our analysis we defined a typical 2-part tariff water user as having 500 ML of entitlements and an annual water usage rate of 60%.

Our analysis shows that in 2021–22, the typical annual bill will increase for 17 out of 27 water sources:

- For regulated water sources, bills will increase by up to \$100 for 6 water sources, and by more than \$100 for 5 water sources (Table 11.1). Border will face the highest bill increase at \$610, and Namoi will face the lowest bill increase at \$24. Prices will continue to increase for all water sources except Namoi over the 2021 determination period as they transition towards full cost recovery levels.^a
- For unregulated water sources, bills will decrease by up to \$240 for 8 out of 12 water sources (Table 11.2). For the remaining 4 water sources, 3 will face increases of up to \$47, and the Far West will face the highest bill increase at \$457. Prices will then increase for all water sources except Far West and South Coast over the 2021 determination period as they transition towards full cost recovery levels.
- For groundwater sources, bills in the Inland and Border regions will decrease by \$163 and \$21 respectively, and for the Murrumbidgee and Coastal regions, bills will increase by \$182 and \$48 respectively (Table 11.3). For the Inland and Border regions, bills will remain constant in real terms over the 2021 determination period as prices are at full cost recovery levels. For the Murrumbidgee and Coastal regions, prices will continue to increase over the 2021 determination period as they transition towards full cost recovery levels.

As discussed in Chapter 10, the main reasons for differences between water sources are differences in the allocation of costs between water sources, and the transition of charges towards full cost recovery for some water sources.

Table 11.1 Forecast typical bill for water users on 2-part tariffs in regulated water sources (\$2021–22)

Water source	2020–21 (\$2020–21) (A)	2021–22 (B)	2022–23	2023–24	2024–25 (C)	\$ change from A to B	% change from A to C
Border	1,674	2,284	2,519	2,553	2,590	610	55%
Gwydir	1,233	1,403	1,483	1,507	1,536	169	25%
Namoi	1,917	1,941	1,949	1,949	1,949	24	2%
Peel	2,762	3,008	3,161	3,234	3,234	246	17%
Lachlan	1,293	1,329	1,371	1,393	1,423	36	10%
Macquarie	1,408	1,462	1,512	1,539	1,571	54	12%
Murray	1,099	1,174	1,215	1,236	1,257	75	14%
Murrumbidgee	989	1,068	1,115	1,131	1,152	79	17%
North Coast	3,819	3,996	4,155	4,260	4,365	177	14%
Hunter	2,204	2,263	2,341	2,399	2,459	59	12%
South Coast	3,267	3,376	3,496	3,583	3,670	108	12%

Source: IPART analysis.

^a Bills will increase from 2021–22 to 2022–23 for the Namoi regulated water source as a result of the delay in WAMC charges taking effect until 1 October 2021, which means the 2021–22 bill includes 3 months of current (i.e. 2020–21) prices.

Table 11.2 Forecast typical bill for water users on 2-part tariffs in unregulated water sources (\$2021–22)

Water source	2020–21 (\$2020–21) (A)	2021–22 (B)	2022–23	2023–24	2024–25 (C)	\$ change from A to B	% change from A to C
Border	1,896	1,656	1,613	1,650	1,690	–240	–11%
Gwydir	1,896	1,656	1,613	1,650	1,690	–240	–11%
Namoi	1,896	1,656	1,613	1,650	1,690	–240	–11%
Peel	1,896	1,656	1,613	1,650	1,690	–240	–11%
Lachlan	2,219	2,170	2,201	2,253	2,308	–48	4%
Macquarie	2,219	2,170	2,201	2,253	2,308	–48	4%
Far West	2,822	3,279	3,431	3,431	3,431	457	22%
Murray	2,582	2,553	2,602	2,664	2,723	–29	5%
Murrumbidgee	3,379	3,418	3,514	3,602	3,688	39	9%
North Coast	3,773	3,820	3,933	4,035	4,132	47	10%
Hunter	1,288	1,314	1,352	1,385	1,418	25	10%
South Coast	1,322	1,188	1,144	1,144	1,144	–133	–13%

Source: IPART analysis.

Table 11.3 Forecast typical bill for water users on 2-part tariffs in groundwater sources (\$2021–22)

Water source	2020–21 (\$2020–21) (A)	2021–22 (B)	2022–23	2023–24	2024–25 (C)	\$ change from A to B	% change from A to C
Inland	2,871	2,707	2,653	2,653	2,653	–163	–8%
Border	2,871	2,849	2,842	2,842	2,842	–21	–1%
Murrumbidgee	1,905	2,087	2,203	2,253	2,305	182	21%
Coastal	1,868	1,916	1,976	2,028	2,080	48	11%

Source: IPART analysis.

11.1.2 Impacts on 1-part tariff water users not on the minimum annual charge vary

For our analysis we have defined a typical 1-part tariff water user as having 500 ML of entitlements.

Our analysis shows that in 2021–22, the typical annual bill will increase for 9 out of 16 water sources compared with 2020–21 bills:

- For unregulated water sources, bills will increase for 7 out of 12 water sources, with Far West facing the highest bill increase at \$537 (Table 11.4). Of the remaining 5 water sources, 4 will face decreases of around \$37, and the South Coast will face the highest bill decrease at \$180. Annual bills will then increase for all water sources except the Far West and South Coast over the 2021 determination period as prices transition towards full cost recovery levels.

- For groundwater sources, bills in the Inland and Border regions will decrease by \$287 and \$125 respectively, and for the Murrumbidgee and Coastal regions, bills will increase by \$149 and \$70 respectively (Table 11.5). For the Inland and Border regions, bills will remain constant in real terms over the 2021 determination period as prices are at full cost recovery levels. For the Murrumbidgee and Coastal regions, bills will continue to increase over the 2021 determination period as prices transition towards full cost recovery levels.

Table 11.4 Forecast typical bill for water users on a 1-part tariff in unregulated water sources (\$2021–22)

Water source	2020–21 (\$2020–21) (A)	2021–22 (B)	2022–23	2023–24	2024–25 (C)	\$ change from A to B	% change from A to C
Border	2,390	2,352	2,395	2,450	2,510	–37	5%
Gwydir	2,390	2,352	2,395	2,450	2,510	–37	5%
Namoi	2,390	2,352	2,395	2,450	2,510	–37	5%
Peel	2,390	2,352	2,395	2,450	2,510	–37	5%
Lachlan	2,801	2,875	2,965	3,035	3,110	74	11%
Macquarie	2,801	2,875	2,965	3,035	3,110	74	11%
Far West	3,329	3,866	4,045	4,045	4,045	537	22%
Murray	3,423	3,590	3,730	3,820	3,905	166	14%
Murrumbidgee	4,542	4,687	4,850	4,970	5,090	145	12%
North Coast	4,758	4,887	5,055	5,185	5,310	129	12%
Hunter	1,714	1,764	1,820	1,865	1,910	49	11%
South Coast	1,619	1,440	1,380	1,380	1,380	–180	–15%

Source: IPART analysis.

Table 11.5 Forecast typical bill for water users on a 1-part tariff in groundwater sources (\$2021–22)

Water source	2020–21 (\$2020–21) (A)	2021–22 (B)	2022–23	2023–24	2024–25 (C)	\$ change from A to B	% change from A to C
Inland	3,497	3,211	3,115	3,115	3,115	–287	–11%
Border	3,497	3,372	3,330	3,330	3,330	–125	–5%
Murrumbidgee	2,321	2,470	2,585	2,645	2,705	149	17%
Coastal	2,527	2,597	2,680	2,750	2,820	70	12%

Source: IPART analysis.

11.1.3 Bills will increase for water users paying the minimum annual charge

In Chapter 9 we discussed our decision to unbundle existing prices and ensure all water users are paying a fair share of MDBA and BRC costs. As a result, small water users currently paying the MAC will also pay MDBA and BRC charges in the future.

To analyse bill impacts on water users on the MAC, we defined 2 types of water users:

- a very small water user that has 5 ML of entitlements and 3 ML of water take
- a small water user that has entitlements and water take close to the threshold of the MAC.

The threshold is different for each water source. It defines the relevant entitlement and water take volumes that would move a water user from paying the MAC to either a 1-part tariff or 2-part tariff.

Based on these scenarios, we calculated the following bill movements from 2020–21 to 2024–25:

- For very small water users, we estimate the changes in annual bills are relatively small in dollar terms and vary between water sources – from a bill increase of \$25 (mostly Coastal water sources) to \$37 (for the Border regulated water source) (Table 11.6).
- For small water users close to the threshold, we estimate the changes in bills are higher compared with very small users, and vary between water sources – from a bill increase of \$25 (Coastal water sources) to \$134 (for the Border regulated water source) (Table 11.7).
- When comparing bill movements between very small and small water users, key differences are due to the impact of MDBA and BRC charges. The closer a small water user gets to the threshold, the more entitlements and water take volumes they would have, and the more MDBA and BRC charges they would pay.

Table 11.6 Forecast bill for very small water users (\$2021–22)

Water source	2020–21 MAC (\$2020– 21)	2024– 25 MAC	2024– 25 MDBA	2024– 25 BRC	2024–25 Total	\$ change 2020–21 to 2024–25	% change 2020–21 to 2024–25
Regulated							
Border	213.74	238.53	3.48	8.36	250.37	36.63	17%
Gwydir	213.74	238.53	4.92	-	243.45	29.71	14%
Namoi	213.74	238.53	5.27	-	243.80	30.06	14%
Peel	213.74	238.53	1.94	-	240.47	26.73	13%
Lachlan	213.74	238.53	2.58	-	241.11	27.37	13%
Macquarie	213.74	238.53	3.21	-	241.74	28.00	13%
Murray	213.74	238.53	3.96	-	242.49	28.75	13%
Murrumbidgee	213.74	238.53	4.09	-	242.62	28.88	14%
North Coast	213.74	238.53	-	-	238.53	24.79	12%
Hunter	213.74	238.53	-	-	238.53	24.79	12%
South Coast	213.74	238.53	-	-	238.53	24.79	12%
Unregulated							
Border	213.74	238.53	1.20	-	239.73	25.99	12%
Gwydir	213.74	238.53	1.20	-	239.73	25.99	12%

Water source	2020-21 MAC (\$2020- 21)	2024- 25 MAC	2024- 25 MDBA	2024- 25 BRC	2024-25 Total	\$ change 2020-21 to 2024-25	% change 2020-21 to 2024-25
Namoi	213.74	238.53	1.20	-	239.73	25.99	12%
Peel	213.74	238.53	1.20	-	239.73	25.99	12%
Lachlan	213.74	238.53	1.07	-	239.60	25.86	12%
Macquarie	213.74	238.53	1.07	-	239.60	25.86	12%
Far West	213.74	238.53	4.97	8.13	251.63	37.89	18%
Murray	213.74	238.53	1.70	-	240.23	26.49	12%
Murrumbidgee	213.74	238.53	1.08	-	239.61	25.87	12%
North Coast	213.74	238.53	-	-	238.53	24.79	12%
Hunter	213.74	238.53	-	-	238.53	24.79	12%
South Coast	213.74	238.53	-	-	238.53	24.79	12%
Groundwater							
Inland	213.74	238.53	1.16	-	239.69	25.95	12%
Border	213.74	238.53	1.16	1.89	241.58	27.84	13%
Murrumbidgee	213.74	238.53	1.16	-	239.69	25.95	12%
Coastal	213.74	238.53	-	-	238.53	24.79	12%

Note: The MDBA and BRC bills are based on 5 ML of entitlements and 3 ML of water take.
Source: IPART analysis.

Table 11.7 Forecast bill for small water users (\$2021-22)

Water source	A	B	2020- 21 MAC (\$2020- 21)	2024- 25 MAC	2024- 25 MDBA	2024- 25 BRC	2024- 25 Total	\$ change 2020- 21 to 2024-25	% change 2020-21 to 2024- 25
Regulated									
Border	46	28	213.74	238.53	32.17	77.29	347.99	134.25	63%
Gwydir	78	47	213.74	238.53	77.01	-	315.54	101.79	48%
Namoi	61	37	213.74	238.53	64.63	-	303.16	89.42	42%
Peel	37	22	213.74	238.53	14.31	-	252.84	39.10	18%
Lachlan	84	50	213.74	238.53	43.19	-	281.72	67.97	32%
Macquarie	76	46	213.74	238.53	48.93	-	287.46	73.71	34%
Murray	95	57	213.74	238.53	75.03	-	313.56	99.81	47%
Murrumbidgee	103	62	213.74	238.53	84.54	-	323.07	109.33	51%
North Coast	27	16	213.74	238.53	-	-	238.53	24.79	12%
Hunter	49	29	213.74	238.53	-	-	238.53	24.79	12%
South Coast	32	19	213.74	238.53	-	-	238.53	24.79	12%
Unregulated									
Border	71	43	213.74	238.53	17.03	-	255.56	41.81	20%
Gwydir	71	43	213.74	238.53	17.03	-	255.56	41.81	20%
Namoi	71	43	213.74	238.53	17.03	-	255.56	41.81	20%

Water source	A	B	2020–21 MAC (\$2020–21)	2024–25 MAC	2024–25 MDBA	2024–25 BRC	2024–25 Total	\$ change 2020–21 to 2024–25	% change 2020–21 to 2024–25
Peel	71	43	213.74	238.53	17.03	-	255.56	41.81	20%
Lachlan	52	31	213.74	238.53	11.10	-	249.63	35.89	17%
Macquarie	52	31	213.74	238.53	11.10	-	249.63	35.89	17%
Far West	35	21	213.74	238.53	34.59	56.59	329.71	115.97	54%
Murray	44	26	213.74	238.53	15.00	-	253.53	39.79	19%
Murrumbidgee	32	19	213.74	238.53	6.98	-	245.51	31.77	15%
North Coast	29	17	213.74	238.53	-	-	238.53	24.79	12%
Hunter	84	50	213.74	238.53	-	-	238.53	24.79	12%
South Coast	104	63	213.74	238.53	-	-	238.53	24.79	12%
Groundwater									
Inland	45	27	213.74	238.53	10.51	-	249.04	35.30	17%
Border	42	25	213.74	238.53	10.51	15.85	264.89	51.15	24%
Murrumbidgee	52	31	213.74	238.53	12.11	-	250.64	36.90	17%
Coastal	57	34	213.74	238.53	-	-	238.53	24.79	12%

Notes: A This column refers to the estimated entitlement threshold in 2024–25. The threshold is different for each water source. It defines the relevant entitlement and water take volumes that would move a water user from paying the MAC to either a 1-part tariff or 2-part tariffs. B This column refers to the estimated allocation in 2024–25.

The MDBA and BRC bills are calculated using the threshold entitlements and water take volumes.

Source: IPART analysis.

11.1.4 Bills will reduce when floodplain harvesting is introduced

In Chapter 10 we presented prices for when FPH takes effect over the 2021 determination period.

Our analysis shows the introduction of FPH will reduce typical non-FPH bills (Table 11.8). Water users in a water source with FPH would be better off by around 2% to 11% than without FPH.

Table 11.8 Impact of new FPH charges on typical non-FPH bills (\$2021–22)

Water source	No FPH			With FPH		Impact of FPH	
	2020–21 (\$2020–21)	2021–22	2024–25	2021–22	2024–25	2021–22	2024–25
Regulated							
Border	1,674	2,284	2,590	2,144	2,434	–6%	–6%
Gwydir	1,233	1,403	1,536	1,264	1,380	–10%	–10%
Namoi	1,917	1,941	1,949	1,807	1,811	–7%	–7%
Macquarie	1,408	1,462	1,571	1,388	1,487	–5%	–5%
Unregulated							
Border	1,896	1,656	1,690	1,531	1,509	–8%	–11%
Gwydir	1,896	1,656	1,690	1,531	1,509	–8%	–11%
Namoi	1,896	1,656	1,690	1,531	1,509	–8%	–11%
Peel	1,896	1,656	1,690	1,531	1,509	–8%	–11%
Far West	2,822	3,279	3,431	3,202	3,357	–2%	–2%

Source: IPART analysis.

11.1.5 Water NSW's South Coast (unregulated) water source bill will decrease

We also analysed the impact of our prices on Water NSW. The impact on Water NSW is different from other South Coast unregulated customers due to our decision to set a separate price on licences held by Water NSW.

In Chapter 9 we outlined our decision to continue to set a separate charge for Water NSW to recover the specific costs of metropolitan water planning for the Greater Sydney region. The costs of metropolitan water planning will be recovered from Water NSW through a specific charge. The price will be an additional fixed charge applied to the water access licences held by Water NSW in the South Coast unregulated water source.

In Chapters 2 and 3, we discussed our decision on costs of metropolitan water planning. We allocated the user share of the costs of metropolitan water planning for the Greater Sydney region directly to Water NSW. We adjusted these proposed costs to ensure they were monopoly services and efficient. Over the 2021 determination period, costs of metropolitan water planning are lower than 2016 costs.

In Chapter 10 we noted the separate entitlement charge would decrease from \$0.91 in 2020–21 to \$0.41^b from 2021–22 onwards. As a result, Water NSW's combined entitlement charge will decrease from \$2.66 in 2020–21 to \$2.16 in 2021–22, and \$1.99 from 2022–23 onwards. Overall, we estimate Water NSW's bill would decrease from around \$3.4 million in 2020–21 to \$2.9 million in 2021–22, and \$2.7 million per year from 2022–23 onwards (Table 11.9).

^b In Table 11.9, the entitlement charge for water planning costs in 2021–22 takes into account how new prices will start from 1 October 2021. It considers 3 months of 2020–21 prices and 9 months of 2021–22 prices.

Table 11.9 Estimate of Water NSW's bill (\$2021–22)

	2020–21 (\$2020–21)	2021– 22 ^a	2022– 23	2023– 24	2024– 25	% change 2020–21 to 2024–25
Entitlement charge – for water planning costs (\$/ML)	0.91	0.54	0.41	0.41	0.41	–55%
Entitlement charge (\$/ML)	1.75	1.62	1.58	1.58	1.58	–10%
Water take charge (\$/ML)	1.49	1.26	1.18	1.18	1.18	–21%
Entitlements ('000, ML)	987.0	987.0	987.0	987.0	987.0	
Water take ('000, ML)	549.6	581.5	581.5	581.5	581.5	
Total bill (\$ million)	3.4	2.9	2.7	2.7	2.7	–23%

a. For the purpose of calculating bills, the charges for 2021–22 in this table take into account how new prices will start from 1 October 2021. It considers 3 months of 2020–21 prices and 9 months of 2021–22 price.

Source: IPART analysis.

11.2 Bills based on final pricing decisions are reasonable

Stakeholders' submissions to our Draft Report acknowledged that bill increases under our draft pricing decisions are generally lower than WAMC's proposal. But they considered that increases over the 2021 determination period are still significant, especially in periods of uncertain allocation reliability.¹⁹⁹

We recognise stakeholders' concerns about the affordability of bill increases. In this section, we present the total bill for water users in regulated water sources based on our pricing decisions for the WAMC and Water NSW price reviews. We then assess the reasonableness of WAMC bills by considering price movements for different types of water users from 2011–12 onwards.

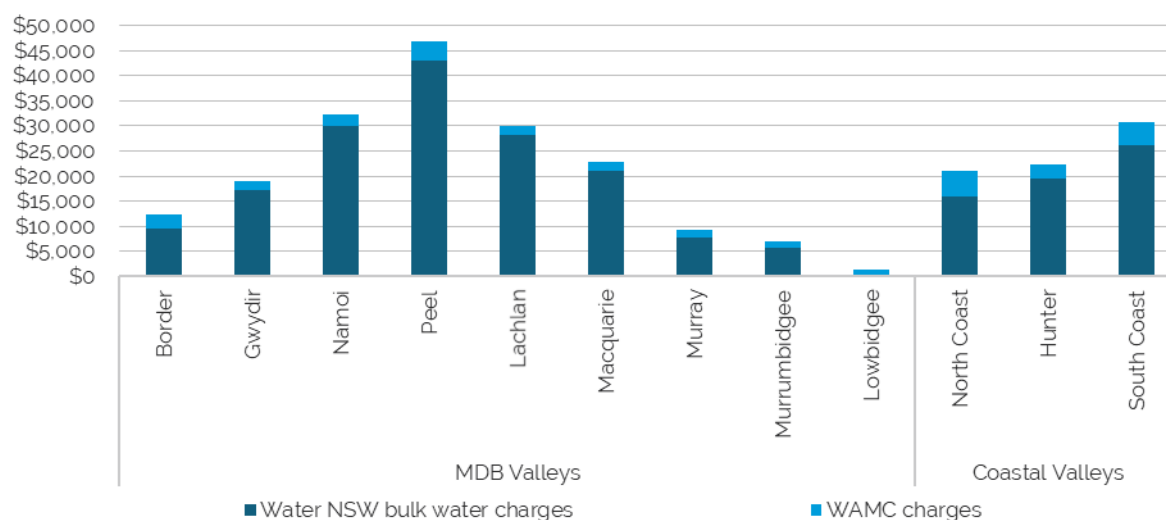
We also compare bills for different types of water users with farming businesses' gross value of irrigated agricultural production (GVIAP), and water take (or usage) prices for 2021–22 with prices paid for allocations traded on the water market.

11.2.1 Total bills for water users in regulated water sources will increase by an average of 23%

We recognise that WAMC water users in regulated water sources also pay rural bulk water prices determined by our review of rural bulk water services. These prices are set out in our Final Report on the Review of Water NSW's rural bulk water prices from 1 October 2021, which is available from IPART's [website](#).

Figure 11.1 presents the combined WAMC and Water NSW bill for a water user with 500 ML of general security entitlements and 60% usage of entitlements by regulated water source.

Figure 11.1 Typical bill – WAMC and Water NSW charges (\$2021–22)



Source: IPART analysis.

Our analysis shows total bills will increase by 2% to 41% from 2020–21 to 2021–22. Water users in the Lachlan regulated water source will experience the highest bill increase (at 41%), driven by a 47% increase in the Water NSW component.

The WAMC component contributes less to the total bill compared with the Water NSW component for all regulated water sources. However, as a stakeholder identified in their submission to the Draft Report, WAMC charges make up 100% of bills paid by water users in unregulated water sources and groundwater sources.²⁰⁰

In section 11.1 we observed water users in the Border regulated water source face the highest increase in their WAMC bills. From a combined WAMC and Water NSW bill perspective, the increase in the WAMC bill represents a relatively small portion of the total bill for water users in the Border regulated water source.

11.2.2 Bill increases are generally less than 2.5% per year (before inflation)

To assess the impact of our pricing decisions on water users over time, we considered price changes from 2011–12 to 2024–25. In this section we present annual bills for water users in different water sources, and cumulative and average annual percentage changes in bills. We present these percentage changes in real terms – that is, adjusted for the effects of inflation. A percentage change of zero indicates bills remained constant in real terms – that is, bills only changed by inflation over this period. We observed average annual percentage changes in bills do not exceed 2.5% per year (before inflation) for most water sources, which we consider is reasonable from an affordability perspective.

Table 11.10 presents the annual bills for the typical water user in a regulated water source (in \$2021–22), the cumulative percentage change in bills from 2011–12 to 2024–25, and the average annual percentage change over this 13-year period.

Table 11.10 Annual bills for water users in regulated water sources (\$2021–22)

	2011–12	2021–22	2024–25	% change 2011–12 to 2024–25	Average annual % change
Border	6,947	6,741	7,047	1.4%	0.1%
Gwydir	7,921	8,580	8,713	10.0%	0.7%
Namoi	13,916	16,255	16,263	16.9%	1.2%
Peel	14,892	13,271	13,497	–9.4%	–0.8%
Lachlan	9,520	12,535	12,629	32.7%	2.2%
Macquarie	8,077	9,924	10,033	24.2%	1.7%
Murray	4,266	5,003	5,086	19.2%	1.4%
Murrumbidgee	3,159	3,705	3,789	19.9%	1.4%
North Coast	19,702	14,660	15,029	–23.7%	–2.1%
Hunter	11,946	15,747	15,943	33.5%	2.2%
South Coast	19,504	17,816	18,110	–7.1%	–0.6%

Note: Bills include WAMC and Water NSW charges.

Source: IPART analysis.

For water users in regulated water sources we found, on average, bills are increasing by 0.7% per year from 2011–12 to 2024–25 (before inflation). Bills are increasing by up to 2.2% per year in 8 water sources and decreasing in the 3 remaining water sources.

Table 11.11 presents the annual bills for the typical water user in an unregulated water source (in \$2021–22), the cumulative percentage change in bills from 2011–12 to 2024–25, and the average annual percentage change over this 13-year period.

Table 11.11 Annual bills for water users in unregulated water sources (\$2021–22)

	2011–12	2021–22	2024–25	% change 2011–12 to 2024–25	Average annual % change
2-part tariffs					
Border	1,858	1,656	1,690	–9.1%	–0.7%
Gwydir	1,858	1,656	1,690	–9.1%	–0.7%
Namoi	1,858	1,656	1,690	–9.1%	–0.7%
Peel	1,858	1,656	1,690	–9.1%	–0.7%
Lachlan	3,305	2,170	2,308	–30.2%	–2.7%
Macquarie	3,305	2,170	2,308	–30.2%	–2.7%
Far West	2,994	3,279	3,431	14.6%	1.1%
Murray	3,428	2,553	2,723	–20.6%	–1.8%
Murrumbidgee	4,133	3,418	3,688	–10.8%	–0.9%
North Coast	4,400	3,820	4,132	–6.1%	–0.5%
Hunter	1,894	1,314	1,418	–25.1%	–2.2%
South Coast	1,666	1,188	1,144	–31.3%	–2.8%
1-part tariff					
Border	2,110	2,352	2,510	18.9%	1.3%
Gwydir	2,110	2,352	2,510	18.9%	1.3%
Namoi	2,110	2,352	2,510	18.9%	1.3%
Peel	2,110	2,352	2,510	18.9%	1.3%
Lachlan	3,757	2,875	3,110	–17.2%	–1.4%
Macquarie	3,757	2,875	3,110	–17.2%	–1.4%
Far West	3,406	3,866	4,045	18.8%	1.3%
Murray	3,894	3,590	3,905	0.3%	0.0%
Murrumbidgee	4,696	4,687	5,090	8.4%	0.6%
North Coast	4,999	4,887	5,310	6.2%	0.5%
Hunter	2,348	1,764	1,910	–18.7%	–1.6%
South Coast	1,980	1,440	1,380	–30.3%	–2.7%

Source: IPART analysis.

For 2-part tariff water users in unregulated water sources we found, on average, WAMC bills are decreasing by 1.3% from 2011–12 to 2024–25 (before inflation). Far West is the only water source to record a cumulative percentage increase over this period, which is equivalent to an increase of around 1.1% per year.

For 1-part tariff water users in unregulated water sources we found, on average, bills remain fairly constant (in real terms) from 2011–12 to 2024–25. Bills increase by up to 1.3% per year in 8 water sources and decrease in the 4 remaining water sources.

Table 11.12 presents the annual bills for the typical water user in a groundwater source (in \$2021–22), the cumulative percentage change in bills from 2013–14 to 2024–25,^c and the average annual percentage change over this 11-year period.

Table 11.12 Annual bills for water users in groundwater sources (\$2021–22)

	2013–14	2021–22	2024–25	% change 2013–14 to 2024–25	Average annual % change
2-part tariffs					
Inland	3,446	2,707	2,653	–23.0%	–2.3%
Border	3,446	2,849	2,842	–17.5%	–1.7%
Murrumbidgee	1,754	2,087	2,305	31.4%	2.5%
Coastal	2,919	1,916	2,080	–28.8%	–3.0%
1-part tariff					
Inland	3,917	3,211	3,115	–20.5%	–2.1%
Border	3,917	3,372	3,330	–15.0%	–1.5%
Murrumbidgee	1,990	2,470	2,705	36.0%	2.8%
Coastal	3,337	2,597	2,820	–15.5%	–1.5%

Source: IPART analysis.

For water users in groundwater sources we found, on average, bills decrease by 1.2% for water users on 2-part tariffs, and 0.6% for water users on a 1-part tariff from 2013–14 to 2024–25 (before inflation). Murrumbidgee is the only water source to record a cumulative percentage increase over this period, which is equivalent to an increase of around 2.5% per year for water users on 2-part tariffs, and 2.8% per year for water users on a 1-part tariff.

11.2.3 Bills will account for up to 12% of farming businesses' revenue

In the Draft Report we used information published by the Australian Bureau of Statistics (ABS) to estimate bills as a percentage of GVIAP for farming businesses. We determined total bills (including WAMC and Water NSW charges) would account for up to 11% of farming businesses' GVIAP. We concluded that bill increases will not have a significant adverse impact on farming businesses' profitability.

Stakeholders' submissions to the Draft Report disagreed with the results of our analysis. Murrumbidgee Private Irrigators Inc and Murrumbidgee Groundwater Inc's joint submission argued the correct interpretation of the GVIAP analysis would be that water charges are far too high. In their view, a cost that grows by around 20% over one determination period, and represents around 11% of revenue, has a significant impact on farming businesses.²⁰¹

^c We present bills from 2013–14 onwards for groundwater sources because we moved to region-based charges in 2013–14.

The 11% figure presented in the Draft Report was the maximum percentage observed across the water sources – specifically, for general security water users in the Hunter regulated water source. Bills as a percentage of GVIAP vary between types of farming businesses due to differences in commodity prices and water application rates, as well as between water sources due to differences in price levels.

We updated our analysis to reflect our pricing decisions for the WAMC and Water NSW price reviews (Table 11.13). We also calculated bills as a percentage of GVIAP for regulated water sources, unregulated water sources, and groundwater sources from 2013–14 to 2017–18.

Table 11.13 Bills as a percentage of gross value of irrigated agricultural production

Water sources	2013–14	2014–15	2015–16	2016–17	2017–18	2021–22
Regulated^a						
Average	7%	6%	6%	5%	4%	4%
Maximum	14%	13%	16%	11%	9%	12%
Unregulated						
2-part tariffs						
Average	3%	4%	3%	1%	1%	1%
Maximum	6%	12%	6%	3%	2%	2%
1-part tariff						
Average	2%	4%	2%	1%	1%	1%
Maximum	4%	9%	4%	2%	1%	1%
Groundwater						
2-part tariffs						
Average	3%	4%	3%	1%	1%	1%
Maximum	7%	11%	8%	2%	2%	2%
1-part tariff						
Average	2%	4%	2%	1%	1%	1%
Maximum	5%	8%	5%	2%	2%	1%

a. Includes WAMC and Water NSW bills for a water user in a regulated water source with 500 ML of general security entitlements and 60% usage of entitlements.

Note: GVIAP Data only available up the 2017–18 financial year.

Source: ABS, [Gross Value of Irrigated Agricultural Production](#), accessed 4 June 2021; ABS, [Water Use on Australian Farms](#), accessed 4 June 2021; and IPART analysis.

Our analysis shows that our results for 2021–22 are similar to 2017–18, and generally lower than the 4 years prior to 2017–18.

Overall, we consider the bill impacts on farming businesses are reasonable. However, we recognise that circumstances differ between water sources and types of farming businesses, and bills representing up to 12% of revenue may be unaffordable for irrigators in some water sources. We constrained the increase in WAMC's water management charges to a maximum of 2.5% per year (before inflation) to address affordability concerns. Irrigators having difficulties paying their water bills can contact Water NSW, which offers several options to help water users requiring affordability assistance.²⁰²

11.2.4 Water take prices are substantially lower than water market prices

In the Draft Report, we compared our draft prices with prices paid for allocations and entitlements on the water market. We found draft water take prices are relatively low compared with the historical average for allocations traded on the water market, which is between \$100 and \$200 per ML.²⁰³ The present values of draft entitlement prices are also lower than prices for entitlements traded on the water market.

Stakeholders' submissions to the Draft Report stated that prices in the water market are irrelevant, because trading would involve ceasing irrigation.²⁰⁴ We acknowledge that water trading is not a preferable alternative for all irrigators. We also recognise that accessibility to the water market is not consistent across all water sources, particularly unregulated water sources and groundwater sources. Therefore, our analysis in this section focuses on regulated water sources.

Allocations

Table 11.14 presents the water take price, the weighted average price on the water market, and the volume of trades in allocations as a percentage of total allocations, by regulated water source.

Table 11.14 Comparison of IPART-determined water take prices and weighted average prices on the water market for allocations

	Final water take price (\$2021–22/ML)^a	Weighted average water market price 2010–11 to 2019–20 (\$2021–22/ML)	Volume of trades as a percentage of total allocations (%)
Border	\$10	\$210	10.2%
Gwydir	\$19	\$319	22.4%
Namoi	\$33	\$223	27.8%
Peel	\$29	\$192	5.3%
Lachlan	\$33	\$143	73.9%
Macquarie	\$24	\$244	23.3%
Murray	\$6	\$178	36.9%
Murrumbidgee	\$6	\$169	16.7%
North Coast	\$25	–	–
Hunter	\$21	\$138	1.6%
South Coast	\$24	\$1,012	1.5%

a. This price is the sum of Water NSW usage charges and WAMC water take charges for 2021–22.

Source: NSW Department of Planning, Industry and Environment (DPIE), [Allocations dashboard](#), accessed 16 June 2021; DPIE, [Share component dashboard](#), accessed 16 June 2021; DPIE, [Trade dashboard](#), accessed 16 June 2021; and IPART analysis.

Our analysis shows that prices paid in the water market are substantially higher than the IPART-determined water take prices for all water sources. However, the level of trading activity is not consistent and is substantially lower in the Peel and Coastal regulated water sources.

Entitlements

In this section, we compare the present value of all future entitlement charges with prices paid for entitlements on the water market for the Murray and Murrumbidgee regulated water sources, the 2 water systems with the highest number of trades by volume in NSW.²⁰⁵

We found that from 2010–11 to 2019–20:

- In the Murray, the weighted average price per ML on the water market was \$1,383 for general security entitlements, and \$4,090 for high security entitlements (in \$2021–22). For comparison, the present value of IPART-determined entitlement charges per ML is \$273 for a general security entitlement, and \$527 for a high security entitlement.^d Therefore, the present value of entitlement charges is small (i.e. 20% for general security and 13% for high security) compared with the market price of the entitlements themselves.
- In the Murrumbidgee, the weighted average price per ML on the water market was \$1,506 for general security entitlements, and \$4,054 for high security entitlements (in \$2021–22). We also determined the present value per ML is \$153 for a general security entitlement, and \$318 for a high security entitlement. Again, the present value of entitlement charges is small (i.e. 10% for general security and 8% for high security) compared with market prices.

The trade volumes for entitlements are significantly lower than trade volumes for allocations. Our analysis shows the volume of trades in entitlements on the water market represent around 1% (on average) of total entitlements. Based on this analysis, we acknowledge that comparisons between the present value of IPART-determined entitlement charges, and the weighted average prices on the water market, may not be relevant for all water users.

11.2.5 Stakeholders were concerned about decreases in allocation reliability

Another issue raised by stakeholders at our online public hearing (in March 2021) and in submissions to our Draft Report is that since the Millennium Drought, water charges have increased and allocation reliability has decreased. The NSW Irrigators' Council (NSWIC) requested we analyse the trends of water charges against actual usage to determine how charges per megalitre of actual water take have changed over time.²⁰⁶

We recognise that in periods of low allocation reliability irrigators will pay more for each megalitre of water take. This is because the price per megalitre of water take increases as allocation reliability decreases, because of the fixed component per megalitre increases. However, WAMC's cost structure is largely fixed – that is, its costs are not affected by different levels of reliability.

For water users on 2-part tariffs, one way to manage the impact of decreasing allocation reliability on the price per megalitre of water take is to change the tariff structure and increase the percentage of revenue recovered through variable charges.

^d We calculated the present value using Water NSW and WAMC entitlement charges (based on our final pricing decisions) and the pre-tax real WACC of 2.4% for Murray–Darling Basin valleys as the discount rate.

For water users on a 1-part tariff in unregulated water sources and groundwater sources, one way to manage this is getting a water meter or water meter equivalent, which would result in switching to 2-part tariffs. However, depending on the water user's circumstances, getting a water meter or water meter equivalent may be not financially viable.

11.3 WAMC can recover costs of meeting environmental obligations

Under section 15 of the IPART Act, we are required to have regard to the need to maintain ecologically sustainable development by taking account of all feasible options to protect the environment.

Managing environmental water is a key part of WAMC's water resource management services. Environmental water requirements are set out in section 8 of the *Water Management Act 2000* and individual water sharing plans include environmental water management requirements.

In determining WAMC's revenue requirement, we ensured WAMC can fully recover all efficient costs it incurs in meeting its environmental obligations through prices and NSW Government contributions.

As an example, Cardno found that WAMC's proposed operating expenditure for the Gayini Nimmie-Caira project (a new Sustainable Diversion Limit Adjustment Mechanism project) was generally prudent, and we included this expenditure in WAMC's revenue requirement. The project delivers environmental flows to the Nimmie-Caira floodplain in the Murrumbidgee River valley and addresses the environmental impacts of water extraction. Chapters 2 to 4 contain further details).

11.4 Prices will transition towards full cost recovery levels

In setting our prices, we considered the level of cost recovery by WAMC for all water sources. Target revenue as a percentage of the user share of the NRR is called the level of cost recovery. The shortfall is funded by the NSW Government, effectively as a community service obligation (discussed in section 11.5).

Table 11.15 summarises the impact of our pricing decisions on the level of cost recovery. It shows that, for water sources not at full cost recovery, our maximum prices will transition towards full cost recovery levels at a capped real rate of 2.5% per year from 2021–22 to 2024–25. Using a cap aims to achieve a balance between setting prices that recover WAMC's efficient costs and mitigating bill impacts on water users.

Table 11.15 Impact of prices on cost recovery levels

Water source	2020–21	IPART 2021–22	IPART 2024–25
Regulated			
Border	100%	90%	97%
Gwydir	91%	79%	84%
Namoi	100%	100%	100%
Peel	78%	96%	100%
Lachlan	100%	64%	68%
Macquarie	100%	71%	76%
Murray	100%	55%	58%
Murrumbidgee	99%	64%	69%
North Coast	100%	60%	64%
Hunter	95%	91%	97%
South Coast	100%	73%	78%
Unregulated			
Border	100%	53%	56%
Gwydir	100%	53%	56%
Namoi	100%	53%	56%
Peel	100%	53%	56%
Lachlan	100%	92%	97%
Macquarie	100%	92%	97%
Far West	100%	100%	100%
Murray	100%	48%	51%
Murrumbidgee	100%	74%	79%
North Coast	100%	82%	87%
Hunter	100%	88%	93%
South Coast	100%	100%	100%
Groundwater			
Inland	100%	100%	100%
Border	NA	100%	100%
Murrumbidgee	68%	81%	87%
Coastal	100%	56%	60%

Note: Figures in this table do not account for revised prices commencing from 1 October 2021.
Source: IPART analysis.

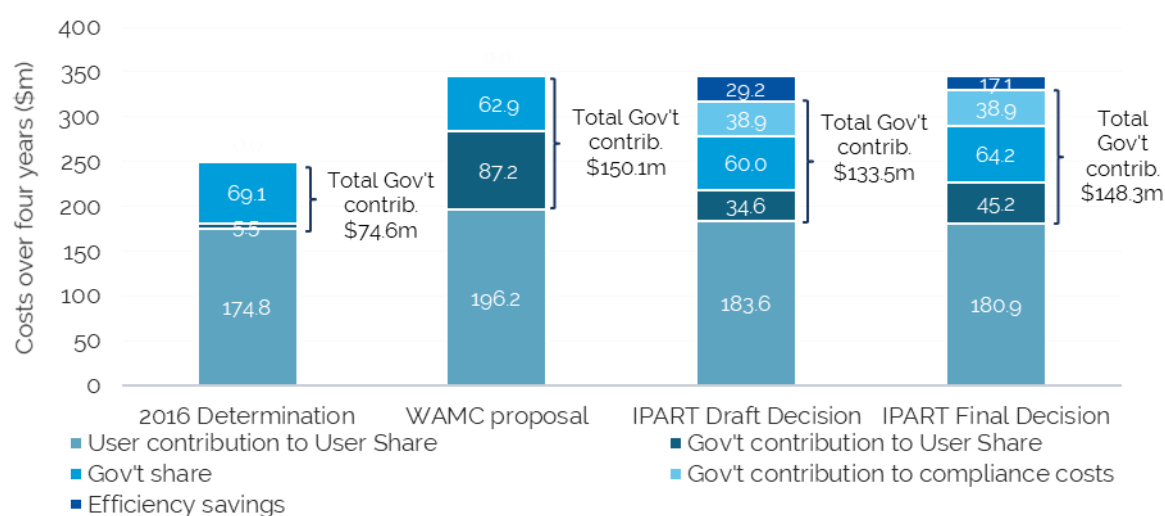
11.5 NSW Government contributions will increase

While most prices for the 2021 determination period are higher than 2020–21 levels, we consider our decisions achieve an appropriate balance between the need to transition towards full cost recovery and limiting bill impacts on water users.

Figure 11.2 shows estimated NSW Government contributions over the 2021 determination period will be \$73.7 million higher than for the 2016 determination period. This increase includes:

- \$39 million of compliance costs to address historical compliance issues, to be paid for by the NSW Government
- \$40 million of additional Government contributions to fund the revenue shortfall from water users. Since majority of the prices are transitioning towards full cost recovery, this approach results in lower cost recovery from water users (Table 11.15). WAMC will require additional contributions from the government to meet the NRR for the 2021 determination period.
- The increases are offset by a \$4.9 million reduction in the government share of NRR. Since the 2016 Determination, we reviewed the government and user shares of WAMC's NRR. Overall, this resulted in a lower government share and a higher user share of NRR compared with our last review.

Figure 11.2 NSW Government total contributions over the 2021 determination period (\$ million, \$2020–21)



Source: IPART analysis.

Chapter 12 »

Water consent transaction charges

12

Summary of our decisions for water consent transaction charges

Consent transaction charges are increasing

We decided to continue setting cost-reflective consent transaction charges. This approach means the water users who require these services will pay the full costs of providing these services.

We adopted WAMC's proposed consent transaction charges subject to a 20% efficiency adjustment. We recognise for most consent transactions, WAMC's new charges are higher than the current 2020–21 charges. This increase is because the 2016 Determination did not reflect the full costs (and hence charges) required to deliver these services.

WAMC's methodologies for developing its consent transaction charges are reasonable. However, considerable efficiencies can be realised over the 2021 determination period.

Only the users requiring consent transaction services will be impacted by these price increases. But we are concerned none of the WAMC agencies have engaged with customers to test the affordability or willingness to pay for such large increases.

For the next determination period, we encourage WAMC to conduct appropriate stakeholder engagement to ensure its consent transaction charges represents an informed trade-off between service delivery and cost.

We set a new charge for Water Supply (Critical Needs) assessments

Our decision is to adopt WAMC's proposed new charges for Water Supply (Critical Needs) assessments, subject to a 10% efficiency adjustment.

WAMC is required to perform a number of water licence processing activities. These activities are known as water consent transactions and they fall into 3 categories:

- **water access licences** – transactions include issuing new licences, amending existing licences and any dealings in licences such as assigning share components, consolidating, subdividing and surrendering licences under the *Water Management Act 2000*
- **water allocation assignments** – transactions include assigning water from one licensee account to another licensee account (commonly referred to as temporary trade) for unregulated and groundwater water sources
- **works approvals** – transactions include assessing and approving the construction and use of water supply works such as pumps, dams and bores, and for the application of water to the land.

Water NSW and NRAR are responsible for providing these consent transaction services on behalf of WAMC. Water consent transaction charges recoup WAMC's efficient costs of providing these services to users.

This chapter presents our decisions on WAMC's water consent transactions charges.

12.1 WAMC's consent transaction charges are increasing

Our decisions are:



46. To maintain our approach of setting cost-reflective consent transaction charges as proposed by WAMC.

47. To set WAMC's consent transactions charges as listed in Table 12.1. These charges are based on a consistent schedule for two different customer types.

Table 12.1 Decision on consent transaction charges for the 2021 determination period (\$2021–22, \$ per transaction)

	2021–22 to 2024–25
Type A consent transactions	
New water access licences	
Zero share	1,158.71
Controlled allocation	1,518.99
Specific purpose – groundwater assessment required	5,139.77
Specific purpose – no groundwater assessment required	2,593.97
Water access licence dealings	
Dealings – regulated rivers	758.18
Dealings – unregulated rivers and groundwater (all applications except those considered by the processing agency to be low risk or administrative) – groundwater assessment required	4,968.24
Dealings – unregulated rivers and groundwater (all applications except those considered by the processing agency to be low risk or administrative) – groundwater assessment not required	2,422.45
Dealings – unregulated rivers and groundwater with low risk	1,097.71
Dealings – unregulated rivers and groundwater – administrative	484.88
Water allocation assignments	
Unregulated rivers and groundwater	143.80
Approvals	
Application for a new approval regarding a pump where no advertising is required	2,416.96
Application for a new approval regarding a pump where advertising is required	2,956.62
Application for a new approval regarding a dam where no advertising is required	2,391.60
Application for a new approval regarding a dam where advertising is required –	3,015.20
Application for a new approval regarding groundwater where neither advertising nor a groundwater assessment is required	1,952.95
Application for a new approval regarding groundwater where advertising is required but a groundwater assessment is not	2,300.68
Application for a new approval regarding groundwater where a groundwater assessment is required but advertising is not	4,498.75
Application for a new approval regarding groundwater where both a groundwater assessment and advertising are required	4,846.47
Amend – add and change water supply works, add and change water use or changes to conditions – groundwater assessment not required	4,043.17

	2021-22 to 2024-25
Amend – add and change water supply works, add and change water use or changes to conditions – groundwater assessment required	1,497.38
Amended approval – administrative – groundwater assessment required	2,723.67
Amended approval – administrative – groundwater assessment not required	177.88
Extension of approval – lodged before expiry date	354.32
Extension of approval – lodged after expiry date	654.83
Type B consent transactions	
New water access licences	
Zero share	716.37
Controlled allocation	696.95
Specific purpose – groundwater assessment required	3,272.68
Specific purpose – no groundwater assessment required	726.89
Water access licence dealings	
Dealings – regulated rivers	758.18
Dealings – unregulated rivers and groundwater (all applications except those considered by the processing agency to be low risk or administrative) – groundwater assessment required	4,968.24
Dealings – unregulated rivers and groundwater (all applications except those considered by the processing agency to be low risk or administrative) – groundwater assessment not required	2,422.45
Dealings – unregulated rivers and groundwater with low risk	1,097.71
Dealings – unregulated rivers and groundwater – administrative	484.88
Water allocation assignments	
Unregulated rivers and groundwater	50.55
Approvals	
New or amended works and/or use approval – groundwater assessment required (except those considered by the processing agency to be low risk or administrative)	7,044.48
New or amended works and/or use approval – groundwater assessment not required (except those considered by the processing agency to be low risk or administrative)	4,498.68
New or amended works and/or use approval – low risk – groundwater assessment required	4,983.31
New or amended works and/or use approval – low risk – groundwater assessment not required	2,437.52
New basic rights bore approval – groundwater assessment required	1,037.24
New basic rights bore approval – groundwater assessment not required	893.27
Amended approval – administrative – groundwater assessment required	3,082.24
Amended approval – administrative – groundwater assessment not required	536.44
Extension of approval – lodged before expiry date	515.97
Extension of approval – lodged after expiry date	953.62

Note: With the exception of water access licence dealings, Type A consent transactions are currently regulated by NRAR and Type B consent transactions are regulated by Water NSW.

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, Table 9–12, pp 172–173 and IPART analysis.

For the 2021 determination period we are maintaining our approach of setting cost-reflective fee-for-service consent transaction charges. We decided to apply a 20% efficiency reduction to WAMC's proposed consent transaction charges for the 2021 determination period, consistent with Cardno's recommendation. Our schedule of charges is set out in Table 12.1.

WAMC considers the 20% efficiency challenge unachievable and not cost reflective of its actual costs of providing consent transaction services.²⁰⁷ It also notes that reduced costs will impact on service levels and its ability to achieve its performance measure targets.²⁰⁸ Other stakeholders supported the efficiency reduction, noting there have been slower processing times due to the additional complexity of having multiple agencies involved in processing particular transactions.²⁰⁹

Our efficiency adjustment is derived from Cardno's review of Water NSW and NRAR's approach to estimating the costs and requisite service levels to deliver each transaction charge category and the requisite service levels. Cardno also benchmarked the charges against other jurisdictions.

While we consider WAMC's methodologies used to derive these consent transaction charges are reasonable, we have concerns that WAMC has not validated some key assumptions used to estimate the costs and derive the charges.²¹⁰ We also consider its approach to estimating costs is still relatively immature, and therefore actual costs are not an appropriate basis to establish the efficient costs of delivering these services.

Cardno has identified several areas where Water NSW and NRAR could make material improvements to its processes and move towards the efficiency frontier over time:

- Increasing engagement with customers on the desired level of service and affordability of the proposed consent transaction charges.
- Improving business processes and ensuring these are well documented.
- Improving the methodology used to determine consent transaction charges including appropriate allocation of staff time and costs
- Regular management review and independent (internal) audit of costs and the methodology used.
- Detailed recording of actual costs for different transactions, where practical.
- Ensuring staff undertaking the activities have the right capabilities and training and resourcing mix is optimised.²¹¹

Most of our consent transaction charges are higher than 2020–21 charges. This increase is because the 2016 Determination did not reflect the full costs and charges required to perform consent transaction activities.

We recognise our decisions on the consent transaction charges will result in significant increases in fees paid by customers for these services. We are concerned none of the WAMC agencies have engaged with customers to test the affordability or willingness to pay for such large increases. We agree with Cardno that if appropriate stakeholder consultation had occurred, WAMC may have arrived at a different trade-off and balance between cost and service.²¹²

For the next determination period, we encourage WAMC to conduct appropriate stakeholder engagement to ensure its consent transaction charges represent an informed trade-off between service delivery and cost.

12.1.1 We set a consistent schedule of charges for different customer types

We accepted WAMC's proposal to have 2 separate schedules of consent transaction charges. This approach distinguishes between different types of customers and different works/activities (Box 12.1).

Box 12.1 Consent transactions are for different customer types

Under the current regulatory arrangements, NRAR is responsible for assessing consent transactions for a subset of WAMC's customers (around 5% of total licences issued). Water NSW assesses all other transactions (around 95% of total licences issued).

While NRAR processes consent transactions for a small volume of licences, these licence holders comprise around 43% of the total regulated water share. NRAR's customers are specified in the 2016 and 2018 Deeds of Transfer between DPIE and Water NSW. These customers include: major utilities, water supply authorities, local water utilities, irrigation corporations, state owned corporations, mining companies, aboriginal communities and businesses, major developments, floodplain harvesting and associated works.

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, pp 158–160.

Cardno reviewed WAMC's proposed charge categories and noted some categories add unnecessary complexity.²¹³ Cardno adjusted the transaction charge categories and set out a consistent schedule for both WAMC agencies. Customers that are currently regulated by NRAR will pay Type A consent transaction charges.^a Currently, Water NSW is responsible for providing consent transaction services to Type B customers.

^a NRAR does not perform water access licence dealings consent transaction services. Water NSW is responsible for providing water access licence dealing consent transactions to Type A customers.

12.2 We partially accepted WAMC's proposed Water Supply (Critical Needs) Assessment charges

Our decision is:



48. To adopt WAMC's proposed Water Supply (Critical Needs) Assessment charges subject to a 10% efficiency adjustment as shown in Table 12.2.

Table 12.2 Decision on Water Supply (Critical Needs) assessment charges for the 2021 determination period (\$2021–22)

Water supply (Critical Needs) assessment	Charge per transaction
Stage 1 assessment	42,770.36
Stage 2 assessment	73,629.11

Source: Cardno, *WAMC Expenditure Review – Final Report for IPART*, March 2021, Table 9–13, p 174 and IPART analysis.

The *Water Supply (Critical Needs) Act 2019* allows the Minister to approve critical infrastructure that is urgently needed to prevent a town or locality from running out of water.²¹⁴ DPIE is required to undertake assessment and approval of applications for infrastructure under this Act. The Act created a new approval process for a small number of water users. WAMC proposed a new consent transaction charge to recoup its efficient costs of providing this service in the 2021 determination period.²¹⁵

Our decision is to adopt WAMC's proposal for a new consent transaction charge for Water Supply (Critical Needs) authorisation assessments, subject to a 10% efficiency adjustment. Our Water Supply (Critical Needs) Assessment charges are presented in Table 12.2.

We consider an efficiency challenge of 10% applied to the charges proposed by DPIE is appropriate, reflecting the small number of assessments completed to date and scope for considerable efficiencies for a new activity, which could be realised in future assessments.²¹⁶

12.3 WAMC will continue to report on its output measures

Consistent with our decision on operating expenditure, we require WAMC to report against a set of output measures for each year of the 2021 determination period.

Water NSW did not propose changes to the existing output measures for consent transactions. NRAR proposed having an additional 5 days to process its transactions. It also proposed loosening the standards for its consent transactions due to the additional complexity to process its applications and to align with its current processing times.

We decided to rationalise the existing output measures for consent transactions, so they focus on the main licence applications and approvals. We agree with Cardno's recommendation that NRAR's proposal is reasonable.²¹⁷ These output measures are discussed in the Output Measures Report.

Chapter 13 »

Existing metering charges

13

Summary of our decisions for existing metering charges

We decided to continue setting cost-reflective charges based on WAMC's June 2020 pricing proposal for WAMC's existing metering services. These charges are a separate fee-for-service charge and only recovered from users who use these services. These charges do not include WAMC's proposed additional costs to implement the NSW Government's metering reform.

Water users who are required to pay the existing metering charges will continue to pay these charges until they are replaced by the new metering charges set out in Chapter 14.

Except for ancillary charges, WAMC's existing metering charges are remaining constant in real terms

Our decision is to maintain WAMC's existing meter service and water take assessment charges in real terms. This means that prices will only increase by inflation.

We have increased the prices for some of WAMC's ancillary charges. This is to recognise the existing charges are too low and do not reflect the full cost of providing these services.

In its June 2020 pricing proposal, WAMC proposed recovering its ongoing metering costs via separate fee-for-service charges. As such, the costs of metering are not included in the general operating expenditure base and are not recovered from all users via water management charges. There are three categories of metering charges:

- meter service charges,
- meter reading charges, and
- ancillary charges.

In November 2020, Water NSW on behalf of WAMC and Water NSW rural bulk water proposed additional costs to implement the NSW Government's non-urban metering reforms. We have reviewed these costs and set prices to recover these additional costs in Chapter 14.

As with consent transactions and expenditure, we engaged Cardno to review and recommend WAMC's metering charges based on the June 2020 pricing proposal. Cardno has separately reviewed WAMC's additional costs and charges of implementing non-urban metering reforms.

This chapter sets out our assessment of WAMC's metering charges from WAMC's June 2020 pricing proposal.

13.1 WAMC's meter service charges will remain constant in real terms

Our decision is:



49. To accept WAMC's proposal and set WAMC's annual meter service charges for the 2021 determination period as shown in Table 13.1. We have set these charges based on meter size and telemetry of the meters.

Table 13.1 Annual meter service charge (\$2021-22)

Meter size	Current 2020-21	IPART decision 2021-22 to 2024-25	Change from current to IPART decision
Telemetered			
50-300	519.97	519.97	0%
350-700	540.29	540.29	0%
750-1,000	587.36	587.36	0%
Non-telemetered			
50-300	407.91	407.91	0%
350-700	423.85	423.85	0%
750-1,000	460.78	460.78	0%

Source: Water NSW, *WAMC pricing proposal to IPART*, June 2020, Tables 72 and 73, pp 134-135, and Cardno, *WAMC Expenditure Review - Final Report to IPART*, p 183.

Meter service charges apply to government-owned water meters, and recover the efficient cost of operating, maintaining and, in some cases, reading the meter. These charges are levied annually.

WAMC proposed maintaining the meter service charge in real terms. Cardno reviewed WAMC's proposed charge and considers these charges are efficient.²¹⁸ Our decision is to accept WAMC's proposed meter service charges and structure of these charges. This decision is unchanged from the draft report.

We consider these charges reflect the relationship between meter charges and meter size (i.e. the costs of servicing larger meters are higher compared to smaller meters). It also shows that the costs of telemetered or agency read sites are higher compared to non-telemetered sites with customer reading in the short term. We note the ongoing costs of servicing meters are likely to come down as more customers have telemetry installed and the costs of technology reduce.

13.2 WAMC's water take assessment charges will remain constant in real terms

Our decision is:



50. To set WAMC's annual water take assessment charges for the 2021 determination period as shown in Table 13.2 .

Table 13.2 Annual water take assessment charge (\$2021-22)

Charge type	Current 2020-21	Proposed 2021-22 to 2024-25	IPART decision 2021-22 to 2024-25	Change from current to IPART decision
Water take charge	\$209.36	\$420.58	\$209.36	0%

Source: Water NSW, *WAMC pricing proposal to IPART*, June 2020, Table 74, p 136 and Cardno, *WAMC Expenditure Review - Final Report for IPART*, March 2021, p 184.

WAMC provides water take measurement (or metering) services to licence holders in unregulated rivers and groundwater sources (in regulated rivers the services are undertaken by Water NSW).

WAMC proposed increasing the water take assessment charge to more than double the current water take assessment charge. Water NSW notes this is due to its allocation of a fixed number of staff to conduct its meter reads. Cardno considers that it is not efficient to use a fixed resource base to determine the efficient level of costs when the number of meter reads per year have decreased.²¹⁹ We agree with Cardno's recommendation and have decided not to implement WAMC's proposed increases.

13.3 Some of WAMC's ancillary charges will increase to align with Water NSW's rural valley charges

Our decision is:



51. To set WAMC's annual ancillary charges for the 2021 determination period as shown in Table 13.3 .

Table 13.3 Annual ancillary charges (\$2021-22)

Meter size	Current 2020-21	IPART decision 2021- 22 to 2024-25	Change from current to IPART decision
Refundable meter accuracy deposit	\$1,892.34	\$1,769.25	-7%
Verification and testing in situ ^a	\$259.31	\$4,677.28	1704%
Lab verification and testing ^a	\$1,892.34	\$6,999.03	270%
Meter reset fee after suspension of maintenance for a year or more, at customer request ^b	\$259.31 + cost of parts	\$259.31 + cost of parts	0%

a. This is Water NSW's proposed total charge if meter is found to be within accuracy standards. A water user will also be required to pay the refundable meter accuracy deposit for these services.

b. Water NSW is proposing a continuation of the meter reset fee over the next determination period. An equivalent fee has not been set under the Rural Valley 2017 Bulk Water Determination.

Source: Water NSW, *WAMC pricing proposal to IPART*, June 2020, Table 78, p 139 and Cardno, *WAMC Expenditure Review - Final Report for IPART*, March 2021, p 185.

WAMC provides ancillary services on a fee-for-service basis. WAMC proposed increasing ancillary charges in line with Water NSW's 2017 Determination ancillary charges for its rural bulk water services. This is a significant increase from the current charges. Cardno notes that existing ancillary charges are too low and do not reflect the full costs of these activities.²²⁰ Our decision is to accept WAMC's proposed ancillary charges.

Chapter 14 »

Non-urban metering reform charges

14

Summary of decisions on non-urban metering reform charges

We decided to introduce 5 new non-urban metering charges

These new charges apportion the efficient costs of the reforms across licence holders and water users with compliant meters.

- A 'scheme management charge' to apply as an annual fee to all licensed customers (\$/licence).
- A 'telemetry charge' to apply as an annual fee per metering installation for customers that use telemetry (\$/meter).
- A 'non-telemetry charge' to apply as an annual fee per metering installation for customers that do not use telemetry capacity (\$/meter).
- 2 additional charges to apply to customers with government owned meters - 'meter service charge – operating costs' and 'meter service charge – capital costs'. These charges are to be applied as an annual fee per metering installation (\$/meter).

We set charges to recover the efficient costs of implementing the reforms

We found that the efficient cost of implementing the metering reforms is \$39.4 million to \$47.8 million. The efficient costs vary depending on the number of customers that opt in to telemetry. The efficient costs are highest under Water NSW's base case when 0% of customers voluntarily opt in to telemetry (\$47.8 million) and lowest when 100% of customers voluntarily opt in to telemetry (\$39.4 million).

Our decision includes efficiency savings that Water NSW can realistically achieve when implementing the reforms and will ensure that customers are not paying for inefficient costs.

Our decisions take account of government funding to support metering uptake

The NSW Government will contribute funding to Water NSW to cover the capital costs of upgrading government owned meters. The aim of the funding is to ensure that the costs of bringing these meters into compliance with the non-urban metering rules is not borne by users. We therefore made a decision to set a 'meter service charge – capital costs' of \$0 per year for the 2021 determination period.

In addition, the NSW Government and Australian Government will each provide \$9 million in funding to deliver a telemetry rebate program across NSW. The rebate will automatically be applied as a one-off \$975 credit on a water bill and provide a financial incentive for metered non-urban water users to use telemetry to remotely transmit their water take information. At this stage, it is unclear how many customers will voluntarily opt in to telemetry because of the rebate. We therefore decided to set charges that vary based on the proportion of customers that voluntarily opt in to telemetry.

In response to the Matthews Report on improving water resource management, Water NSW is implementing a range of non-urban metering reforms. In March 2021, we released draft reports for our Water NSW and WAMC reviews. In these reports, we did not make draft decisions on Water NSW's additional charges for implementing the non-urban metering reforms. Our preliminary view was that we did not have sufficient information to include Water NSW's proposed metering costs in regulated prices over the 2021 determination period. Instead, we sought feedback on Water NSW's proposal including the efficiency of its costs, the impacts on customers, the proposed price structure and who should pay for the policy.

In response to our draft reports, Water NSW submitted a revised proposal on non-urban metering responding to the issues we raised. We decided to delay the commencement of the 2021 determination period for Water NSW and WAMC to 1 October 2021 and release a Supplementary Draft Report on Water NSW's non-urban metering reform charges. This allowed us to assess Water NSW's revised proposal and seek feedback from stakeholders on draft decisions.

After considering feedback from stakeholders, we have made final decisions on the efficient costs and charges for implementing the non-urban metering reforms. This chapter sets out our decisions. The sections below set out further information on:

- the efficient costs of implementing the NSW Government's non-urban metering reforms
- the appropriate customer share of the efficient costs
- the appropriate charge structure including which costs should be recovered from different charges, whether the charges should apply to all licences or water users with compliant meters and how charges should vary based on the proportion of users that opt in to telemetry
- the level of charges and how we adjusted for several of Water NSW's modelling parameters
- how to transition from existing metering charges to the new charges to provide incentives for compliance as the reforms are rolled out between now and December 2023
- how to deal with uncertainty including whether to introduce an unders and overs mechanism (UOM), provide for exit fees and adjust charges at the next determination, and
- the impacts of metering reforms on customer charges and bills.

14.1 The efficient cost of metering reform is up to \$47.8 million

Our decisions are:



52. That the efficient cost of implementing the NSW Government's non-urban metering reforms under Water NSW's proposed base case is \$47.8 million over the 2021 determination period (see Table 14.1).

53. That the efficient cost of implementing the NSW Government's non-urban metering reforms varies from \$39.4 million to \$47.8 million based on the proportion of customers that voluntarily opt in to telemetry (see Table 14.2).

Our final decision is to set Water NSW's efficient costs under its base case at \$47.8 million. This amount is \$8.3 million (or 14.7%) lower than Water NSW's revised proposal and comprises:

- \$4.0 million in scope adjustments
- \$3.4 million in catch-up efficiency adjustments, based on a catch-up efficiency of 3.2% per annum for operating expenditure and 1.3% per annum for capital expenditure
- \$0.8 million in continuing efficiency adjustments, based on a continuing efficiency of 0.7% per annum.

Table 14.1 summarises our decisions on Water NSW's operating and capital expenditure to implement the non-urban metering reforms under Water NSW's proposed base case.

Table 14.1 Decision on efficient costs of implementing non-urban metering reforms under Water NSW's proposed base case for the 2021 determination period (\$ millions, \$2020-21)

	2021-22 ^a	2022-23	2023-24	2024-25	Total
Water NSW proposed ^b	16.9	14.5	13.3	11.4	56.1
IPART decision	9.3	15.6	13.7	9.3	47.8
Difference	-7.6	1.1	0.3	-2.2	-8.3
% Difference	-45.0%	7.8%	2.6%	-18.9%	-14.7%

a Including 2020-21 capital expenditure on government owned meters, which is included in the capital charge.

b The costs are slightly lower than in the Supplementary Draft Report because the Water NSW proposal and the Supplementary Draft Report costs double counted telemetry costs for government-owned meters.

Note: Water NSW proposal is based on information provided in Water NSW's April 2021 submission to IPART. Totals may not sum due to rounding.

Source: IPART analysis using data from Cardno, *Review of Water NSW's Metering Reform Costs – Final Supplementary Report*, September 2021.

We also found that the efficient costs vary with the number of customers that voluntarily opt in to telemetry.^a Under the new metering rules, water users will need telemetry for all approved surface water works, except for those with surface pumps less than 200 mm or those directed to install telemetry by an order of the Minister. However, even if users are not required to have telemetry, they may voluntarily install telemetry equipment.

We consider that our decision should reflect the potential range of telemetry opt-in based on five scenarios modelled by Water NSW: 0%, 25%, 50%, 75% and 100% telemetry opt-in. The efficient costs are highest under Water NSW's base case when 0% of customers voluntarily opt in to telemetry (\$47.8 million) and lowest when 100% of customers voluntarily opt in to telemetry (\$39.4 million). This approach is unchanged from our draft decision.

^a There are two types of meters under the new framework: telemetry meters and non-telemetry meters. Telemetry meters record data and remotely transmit it to Water NSW's centralised data systems. Non-telemetry meters record and store data on site and require periodic manual meter reading (known as data logger download).

Table 14.2 Decision on efficient costs of implementing non-urban metering reforms for different telemetry opt-in scenarios for the 2021 determination period (\$ million, \$2020-21)

Telemetry opt-in	2021-22 ^a	2022-23	2023-24	2024-25	Total
0%	9.3	15.6	13.7	9.3	47.8
25%	8.7	15.1	13.1	8.8	45.7
50%	8.1	14.6	12.5	8.4	43.6
75%	7.5	14.1	11.9	7.9	41.5
100%	7.0	13.6	11.3	7.5	39.4

^a Including 2020-21 capital expenditure on government owned meters, which is included in the capital charge.

Note: Totals may not sum due to rounding.

Source: IPART analysis using data from Cardno, *Review of Water NSW's Metering Reform Costs – Final Supplementary Report*, September 2021.

14.1.1 Water NSW provided sufficient information to set efficient costs

Several stakeholders considered that there was insufficient information to establish Water NSW's efficient costs. They also questioned the impact on efficient costs of delays in implementing the reform and inaccuracies in the number of sites used to set efficient costs and charges.²²¹

Our detailed review of Water NSW's expenditure found that there was sufficient information to set efficient costs including dealing with delays, uncertainty in implementing the reforms and providing incentives to Water NSW to become more efficient as they implement the reforms. Our consultant – Cardno – tested the robustness of Water NSW's assumptions and made adjustments where appropriate to arrive at the efficient costs. We consider that there is sufficient information to set efficient costs. The catch-up efficiencies also provide an incentive to Water NSW to reduce uncertainty as they implement expenditure plans over time.²²²

We also made decisions on how to address uncertainty associated with other areas raised by stakeholders including floodplain harvesting meters, delays in users with privately owned meters complying with the policy and delays in the rollout of government owned meters. The sections below set out our analysis of each of these areas.

Delays in users with privately owned meters complying with the policy

For **privately owned meters**, we decided to set efficient costs based on users meeting the required compliance dates, rather than reflecting possible non-compliance. We consider that this is an appropriate approach for two reasons:

- Water NSW considered that its discussions with various stakeholders (including duly qualified persons (DQPs), NRAR and DPIE) have not indicated any supply issues that would prevent users with privately owned meters from meeting compliance dates (such as lack of supply of meters, local intelligence devices (LIDs) or DQPs).²²³
- Although in practice some users may not meet the required compliance dates, it is our role to set charges based on the efficient costs of Water NSW implementing the reform. This should include the activities it needs to undertake to support the required compliance dates for privately owned meters. Using lower efficient costs based on delays in users becoming compliant and then to setting lower charges would not provide an appropriate incentive for users to comply with the policy.

Delays in government owned meter rollout

For **government owned meters**, we also decided to set efficient costs based on Water NSW meeting the required compliance dates. Water NSW's proposal included operating and capital expenditure forecasts based on accelerating compliance for government owned meters. Water NSW advised that it has now revised this profile to align with the compliance dates required by the Regulation.²²⁴

We decided to set efficient costs based on Water NSW's revised profile as this reflects our best estimate of the expenditure profile based on current information and is consistent with meeting the required compliance dates. We also decided that customers should not start paying charges associated with these costs until the later of the compliance date and when Water NSW makes the meter compliant (see section 14.5 for further information).

Floodplain harvesting meters

Water NSW's April proposal included the costs of 1,066 floodplain harvesting meters being compliant and telemetered in 2020-21 and 2021-22.²²⁵ However, amendments to the *Water Management (General) Regulation 2018* (the Regulation) that would require floodplain harvesting meters to comply were recently disallowed. Water NSW advised that this reduction of available meters being connected to telemetry from its original calculations will have material implications on the quantum that can be recovered from regulated charges as fixed telemetry costs will be spread across fewer meters.²²⁶

We asked Cardno to recommend efficient costs under two scenarios:

- Scenario 1 where the requirement for compliance for floodplain harvesting meters does not take effect until the next regulatory period.
- Scenario 2 where the requirement for compliance for floodplain harvesting meters takes effect from 2022-23.

Since the amendments to the Regulation were not approved, the compliance dates included in costs and charges in our Supplementary Draft Report will not be met. We decided to use Cardno's Scenario 2 as the basis for efficient costs and charges, where the compliance for floodplain harvesting meters take effect from 2022-23, as this our best estimate of the likely compliance dates based on currently available information. In addition, we consider that uncertainty around the timing of the requirements should be addressed by potentially adjusting charges at the next review (see section 14.6 for further information).

14.1.2 Water NSW's efficient expenditure is \$8.3 million less than Water NSW's base case proposal

Water NSW proposed \$56.1 million in operating and capital expenditure over the 2021 determination period to implement the NSW Government's non-urban metering reforms.^b This amount is made up of:

- \$32.4 million in scheme management costs (which Water NSW proposed are to be recovered from all customers via scheme management and telemetry/non-telemetry charges), and
- \$23.6 million in government owned meter costs (which Water NSW proposed are to be recovered only from customers with government owned meters).

Water NSW's base case proposal assumes no customers voluntarily opt in to telemetry.²²⁷ However, it also provided modelling of four additional scenarios with 25%, 50%, 75% and 100% of customers opt-in to telemetry.

Water NSW's efficient cost is \$47.8 million which is \$8.3 million less than what Water NSW proposed. Our reductions in Water NSW's proposed expenditure are comprised of:

- \$4.0 million in scope adjustments
- \$3.4 million in catch-up efficiency adjustments, based on a catch-up efficiency factor of 3.2% per annum for operating expenditure and 1.3% per annum for capital expenditure
- \$0.8 million in continuing efficiency adjustments, based on a continuing efficiency factor of 0.7% per annum.

Further analysis on our reductions to Water NSW's scheme management costs and government owned meter costs are set out in the following sections.

Scheme management costs

Scheme management costs include the wider costs of introducing the reform, such as recording and reporting, customer self-reporting, general enquiries and education. They also include metering scheme management costs such as compliance activities, water take assessments, meter reading and meter data services.

Our decisions on adjustments to Water NSW's proposed scheme management operating costs are summarised in Table 14.3.

^b These costs are slightly lower than in the Supplementary Draft Report because the Water NSW proposal and the Supplementary Draft Report costs double counted telemetry costs for government-owned meters.

Table 14.3 Decision on efficient scheme management operating and capital expenditure for the 2021 determination period (\$ millions, \$2020-21)

	2021-22	2022-23	2023-24	2024-25	Total
Water NSW proposed	7.1	7.8	9.2	8.4	32.4
Scope adjustments ^a	-0.9	-0.5	-0.4	-0.4	-2.3
Catch-up efficiency	-0.2	-0.4	-0.8	-1.0	-2.4
Continuing efficiency	0.0	-0.1	-0.2	-0.2	-0.5
Total efficient operating and capital expenditure	5.9	6.7	7.8	6.8	27.3
Difference	-1.1	-1.0	-1.4	-1.6	-5.2
Difference (%)	-16.1%	-13.4%	-15.0%	-19.0%	-15.9%

^a Including adjustment due to delayed rollout of floodplain harvesting meters.

Note: Totals may not sum due to rounding.

Source: IPART analysis using Cardno, *Review of Water NSW's Metering Reform Costs – Final Supplementary Report*, September 2021.

We consider that Water NSW can make **scope adjustment** efficiency savings of \$2.3 million, consistent with Cardno's recommendations. These adjustments include:

- An annual adjustment based on the revision of the working weeks included in Water NSW's cost model from 40.66 to 41.41. This recognises that non-field staff are not subject to the same training, down-time and leave requirements of field staff and as such have slightly higher average working weeks per year. Cardno considered that Water NSW had not provided sufficient evidence of a resourcing plan to support its proposal and on balance applied an adjustment based on 41.41 weeks to forecast efficient costs.²²⁸
- An annual adjustment based on an observation in Water NSW's cost model that the 'Other' salary costs for Team Leaders had not been revised to from \$25,000 to \$15,000 as set out in the changes that Water NSW had made to its expenditure forecasts in its April 2021 submission.²²⁹
- An annual adjustment to remove the double counting of 1 FTE salary costs for Customer Systems activities. These costs have been correctly included in the operating and maintaining the Data Acquisition Service (DAS) and DQP portal costs but were double counted in the overall Customer Serve and Systems total.²³⁰
- An annual adjustment to remove the GST component for several items included in the cost build-up.²³¹
- Removal of the \$0.3 million that Water NSW has included in 2021-22 as a capital allowance to automate upload time for initial site inspection. Cardno considered that this expenditure duplicates the WAVE program expenditure and should not be included as an uplift allowed above WAVE program.

It is our view that Water NSW has not fully demonstrated that it could not flexibly and cost effectively adapt the program with its service provider to deliver this functionality within its existing contract. WAVE is a collection of many initiatives in work streams that will be met through different systems and functionality with scope that allows Water NSW to be flexible in prioritising the overall program to meet its business needs.²³² We consider that an efficient business should work with its service provider to cost effectively adapt the program to the best available information within the contract.

- An adjustment for the compliance for floodplain harvesting meters taking effect from 2022-23 as outlined above.

We consider that Water NSW can make catch-up efficiency savings of \$2.4 million over the 2021 determination period. This is based on accepting Cardno's recommended catch-up efficiency adjustments of 3.2% per year for operating expenditure and 1.25% in 2021-21 increasing to 4.5% in 2024-25 for capital expenditure.²³³

Some areas where Water NSW can achieve these catch-up efficiencies include:

- Automating the upload of local intelligence device (LID) data into the Data Acquisition System (DAS) earlier than allowed for in Water NSW's assumptions. Water NSW's cost model currently includes a declining profile of time taken to upload data (0.4 hours in year 1, 0.2 hours in year 2 and 0 hours thereafter), reflecting its expected timeframe for implementing an automated solution.
- Optimising travelling routes, as currently Water NSW has assumed a flat 1 hour per site. More work will need to be completed by Water NSW to develop meter site rounds so that the most efficient routes can be planned for the field officers for each area.
- Achieving synergies with other field-based activities for downloading of the LID for meters not connected to telemetry to remove the need for a second visit to download the LID. The metering activities have considerable similarities with the surface water and groundwater monitoring activities in that they involve field staff undertaking activities across the State to collect information and then manage this information, which creates the potential for synergies.²³⁴

We consider that Water NSW can make **continuing efficiency** savings of \$0.5 million. This is based on continuing efficiency adjustments of 0.7% per year over the 2021 determination period.²³⁵ The continuing efficiency applied is consistent with that applied to Water NSW's expenditure for WAMC and Rural Valley activities.

Government owned meter costs

Government owned meter costs include the costs that Water NSW will incur in upgrading and maintaining existing government owned meters to ensure they are compliant with the new regulatory framework. It does not include the replacement or installation of new government owned meters.

Our decisions on adjustments to Water NSW's proposed government owned meter costs are summarised in Table 14.4.

Table 14.4 Decision on efficient government owned meter expenditure for the 2021 determination period (\$ millions, \$2020-21)

	2021-22 ^a	2022-23	2023-24	2024-25	Total
Water NSW's proposal	9.8	6.7	4.2	3.0	23.6
Scope adjustments ^b	-6.4	2.6	2.2	-0.2	-1.7
Catch-up efficiency	0.0	-0.3	-0.4	-0.3	-1.0
Continuing efficiency	0.0	-0.1	-0.1	-0.1	-0.3
Total efficient operating and capital expenditure	3.3	8.9	5.9	2.4	20.5
Difference	-6.4	2.2	1.7	-0.6	-3.1
Difference (%)	-65.9%	32.3%	41.4%	-18.7%	-13.2%

a Including 2020-21 capital expenditure on government owned meters, which is included in the metering capital charge.

b Including adjustment due to updated rollout for government-owned meters.

Source: IPART analysis using Cardno, *Review of Water NSW's Metering Reform Costs – Final Supplementary Report*, September 2021.

Note: Totals may not sum due to rounding.

We consider that Water NSW can make **scope adjustment** efficiency savings of \$1.7 million consistent with Cardno's recommendations. These adjustments include:

- Reducing the consumables for each site visit from \$75 per visit to \$65 per visit based on Cardno's assessment of the cost build-up for this item.²³⁶
- Incorporating new information on Water NSW's profile of operating and capital expenditure for government owned meters as discussed above.

We consider that Water NSW can make **catch-up efficiency** savings of \$1.0 million over the 2021 determination period. This is based on accepting Cardno's recommended catch-up efficiency adjustments of 3.2% per year for operating expenditure and 1.25% in 2021-21 increasing to 4.5% in 2024-25 for capital expenditure.²³⁷

We consider that Water NSW can achieve these catch-up efficiencies for example by optimising the level of testing of government-owned meters to confirm accuracy of the fleet. Water NSW has assumed that it will need to test 5% of the meter fleet to confirm overall accuracy. We consider that this may be conservative as Water NSW may be able to test fewer meters when it better understands the underlying variance in the population of meters.

We consider that Water NSW can make **continuing efficiency** savings of \$0.3 million. As noted above, this is based on a continuing efficiency adjustment of 0.7% consistent with the approach we applied for the rest of this review.²³⁸

14.1.3 Efficient costs decrease as more customers voluntarily opt in to telemetry

We found that the efficient costs of implementing the non-urban metering reforms are sensitive to changes in the number of customers that voluntarily opt in to telemetry. At the time of submitting its April revised proposal, Water NSW considered that there was no evidence to suggest that there will be any voluntary uptake of telemetry. However, the NSW Government has now decided to provide a one-off rebate for customers who use telemetry.

We consider that our decision should reflect the potential range of telemetry opt-in based on 5 scenarios modelled by Water NSW: 0%, 25%, 50%, 75% and 100% telemetry opt-in. The efficient costs are highest when 0% of customers voluntarily opt in to telemetry (\$47.8 million) and lowest when 100% of customers voluntarily opt in to telemetry (\$39.4 million).

Water NSW raised concerns about us using its telemetry modelling scenarios to set efficient costs and charges that vary with telemetry opt-in. It submitted that this analysis was based on the hypothetical long run costs of administering the reforms and would take approximately 2 years to fully implement the proposed cost reductions as more user opt in to telemetry.²³⁹

We considered the long-term nature of the costs that underpin Water NSW's scenarios when setting charges for each of the telemetry ranges. We applied a conservative approach to setting the charges for each band, using the lower end of each band to set the charge (e.g. the 0% voluntary uptake costs apply throughout the 0-24% range of voluntary uptake). It is our view that an efficient business should be able to plan appropriately and recovers its costs through the charges we set.

14.2 A customer share of 100% is appropriate

Our decision is:



54. To adopt a 100% customer share of efficient costs incurred by Water NSW implementing the NSW Government's non-urban metering reforms.

We allocate the efficient costs of Water NSW's rural bulk water services and WAMC's water management costs based on whichever party created the need for an activity (and its associated costs) to be incurred.

Irrigators generally disagreed with the draft decision for a 100% customer share. For example, NSWIC considered that the NSW Government created the need for the expenditure, in order to rebuild public confidence following Government failures in enforcing compliance. Similarly, Murray Valley Private Diverters Inc considered that southern basin participants should not incur 100% of expenditure for regulatory and compliance failures of the NSW Government or Water NSW. Coleambally Irrigation Co-operative Limited (CICL) recommended a customer share of 50% given there is some uncertainty around Water NSW's efficient costs.²⁴⁰

Our view is that it is water customers who create the need for expenditure on metering reform and therefore customers should contribute 100% of the efficient costs. This is unchanged from our draft decision.

We consider that the underlying driver for metering reform is protecting the rights of water customers and that a 100% customer share is consistent with our 2019 rural water cost shares report. We also note that the relevant policies including the National Water Initiative and the national framework for non-urban metering pre-date compliance shortcomings identified in NSW.

14.3 Water NSW's proposed metering charge structure is appropriate

Our decisions are:



55. To recover the wider costs of introducing the reform, such as recording and reporting, customer self-reporting, general enquiries and education, through a 'scheme management charge' to be applied annually to all licence holders.

56. To recover the costs of compliance activities, water take assessments, meter reading and meter data services through:

- a telemetry charge to be applied annually to customers who use telemetry
- a non-telemetry charge to be applied annually to customers who do not use telemetry.

57. To recover the costs of bringing government owned meters up to the required standard under the non-urban metering reforms through a 'meter service charge – capital costs' and maintaining these meters to ensure regulatory compliance through a 'meter service charge – operating costs'. These charges are applied annually to customers with a compliant government owned meter.

These are unchanged from our draft decisions.

14.3.1 The scheme management charge applies to all licence holders

We have decided to set a common scheme management charge for all licence holders that does not distinguish between water source and meter size. We consider that this provides a simple approach to recover Water NSW's costs of scheme management over the metering lifecycle.

In response to our draft decision, Water NSW agreed that the scheme management charge should be levied on those customers who benefit from the metering scheme, such as all billable licence holders and Zero Share Water Access Licences (WAL).²⁴¹ Coleambally Irrigation Co-Operative Limited agreed that it is appropriate that WALs that are not linked to a works approval also make some contribution to the costs incurred by Water NSW to administer the reform as all Water Access Licence holders are beneficiaries of robust metering.²⁴²

However, Murray Valley Private Diverters did not support a universal scheme management charge. It considered that Southern Basin Government owned meter holders should not bear the cost burden of bringing Northern Basin irrigators into national metering standards and NSW regulatory compliance regime.²⁴³

We consider that all users are driving the need to improve water resource management and associated compliance management, not just those that need to comply with the new policy.^c These activities are similar to the compliance and enforcement activities of NRAR where the need is driven by all licence holders rather than just those with meters. We consider it appropriate that the charge is applied to all licence holders.

14.3.2 A telemetry or non-telemetry charge applies based on meter technology

There are two types of compliant meters under the metering reforms:

- telemetry meters – meters with data recording and remote transmitting of meter data reads to Water NSW's centralised data systems
- non-telemetry meters – meters without remote transmitting systems that store meter data on-site and require periodic manual data logger download.²⁴⁴

Water users are required to have telemetry installed on their meters if they relate to surface water works, except for pumps below 200mm in diameter or those directed to install telemetry by an order of the Minister.²⁴⁵

We set separate telemetry and non-telemetry charges that vary by level of telemetry opt-in

Water NSW proposed separate telemetry and non-telemetry charges for the 2021 determination period, based on the meter technology applied to the metering installation. The charges would be applied as an annual \$/per metering installation.²⁴⁶

Although the charges would be separate, Water NSW proposed these charges should be set at the same level over the 2021 determination period. This is because the initial telemetry costs are higher than the costs of non-telemetry. It would not provide a price signal to incentivise telemetry uptake.²⁴⁷

We consider that a separate telemetry and non-telemetry charge structure takes account of uncertainty over how many users will voluntarily opt in to telemetry, provides an incentive for users to opt in to telemetry and better reflects the efficient costs of providing services.

Using information from Water NSW and Cardno, we have modelled the telemetry and non-telemetry charges required to recover the efficient costs of providing services using 4 bands of telemetry opt-in (see Table 14.5). We considered the long-term nature of the costs that underpin Water NSW's scenarios and applied a conservative approach to setting the charges for each band, using the lower end of each band to model the charge (e.g. the 0% voluntary uptake costs applied throughout the 0-24% range of voluntary uptake).

^c Only users with meters >100 mm are required to comply.

Table 14.5 Charges and bills for different telemetry opt-in proportions (\$2021-22)

Telemetry opt-in	Up to 24%	25-49%	50-74%	75% or more
Charges				
Scheme management charge	73	66	59	51
Telemetry charge	251	209	191	182
Non-telemetry charge	219	219	219	219
Blended telemetry/non-telemetry charge	226	214	202	189
Bills (one meter plus one licence)				
Scheme management charge <i>plus</i> telemetry charge	324	275	250	234
Scheme management charge <i>plus</i> non-telemetry charge	292	285	277	270
Scheme management charge <i>plus</i> blended telemetry/non-telemetry charge	300	280	260	240

Note: The non-telemetry charge does not vary as telemetry uptake increases since the underlying costs are all variable (i.e. staff time for site inspections and downloading LIDs).

Source: IPART analysis using information provided by Water NSW and Cardno.

Stakeholders had mixed views on a telemetry and non-telemetry price structure that varies with the number of users that opt in to telemetry. For example:

- Murray Valley Private Diverters did not support the introduction of a new telemetry charge to apply as a new annual fee to existing meters for government owned meters (Southern Basin).²⁴⁸
- NSWIC raised concerns about assumptions of voluntary uptake of telemetry given government rebates. It is highly concerned that this pricing structure is designed to shift people to 'voluntarily' opt-in to telemetry when they are not required under regulation to do so. It considered that there will be relatively low rates of voluntary opt-in to telemetry because the rebate is relatively small in the scheme of total costs for purchasing, installing and maintaining telemetry equipment.²⁴⁹
- PIAC considered that greater incentives to opt in to telemetry should be created using the price structure. It submitted that there should be a differential between telemetry and non-telemetry charges and that the telemetry charge should be set at a level according with more than 75% of meters opting-in from the outset.²⁵⁰

We consider that our decision to set charges that vary with the number of customers that opt in to telemetry appropriately balances incentives to opt in to telemetry, the costs of providing telemetry and non-telemetry and takes account of government rebates to accelerate uptake of telemetry (see Box 14.1). This recommendation is unchanged from the draft decision.

Our analysis indicates that telemetry is more expensive than non-telemetry when voluntary uptake is less than 25%. Further, it gets progressively less expensive at even higher levels of voluntary uptake, as fixed costs – such as IT systems – are spread over a greater number of water users. Non-telemetry costs do not vary as telemetry uptake increases. However, a blended telemetry/non-telemetry charge would decrease as telemetry uptake increases given the contribution of telemetry charges to the blended charge. The scheme management charge (levied on all water licence holders) would also be lower if more customers opt in to telemetry.

When the proportion of customers that opt in is low (up to 24%), the telemetry costs per meter are higher than the non-telemetry costs per meter. However, to ensure that these charges do not provide a disincentive for customers to opt in to telemetry, we decided to set the same charge of \$226 for up to 24% telemetry opt-in. Once telemetry opt-in is 25% or more, the telemetry and non-telemetry charges will reflect the efficient costs of providing these services.

Box 14.1 Government rebate for customers that use telemetry

In June 2021, the NSW Government and Australian Government decided that they will each provide \$9 million in funding to deliver an \$18 million telemetry rebate program across NSW over the rollout of the non-urban metering rules. The rebate will automatically be applied as a one-off \$975 credit on a water bill when an eligible water user with a meter connects to the NSW Government's telemetry system. This will provide a financial incentive for metered non-urban water users to use telemetry to remotely transmit their water take information.

The rebate program aims to accelerate uptake of telemetry in NSW, increasing transparency of water take, supporting on-farm management, and positioning NSW to better deliver efficiencies in water management.

At this stage, it is unclear how many customers will voluntarily opt in to telemetry because of the rebate. However, we expect that the proportion would be greater than the 0% adopted in Water NSW's proposed base case which was developed prior to government's decision on the rebate.

14.3.3 Government owned meter charges recover operating and capital costs

There are around 2,800 water users with government owned meters (i.e. the meters are owned and maintained by Water NSW). Government owned meters are located in the Southern Basin, Hawkesbury-Nepean and Bega Bemboka regions.²⁵¹

We decided to adopt Water NSW's proposed price structure and set separate meter service charges for capital costs and operating costs for all water users. However, we decided not to embed the telemetry or non-telemetry charge within the meter service charges to create a more transparent price structure. This is unchanged from our draft decision.

In relation to the meter service charges, Water NSW proposed to:

- have separate charges for capital costs and operating costs
- not vary these charges by meter size, telemetry use or water source.

The 'meter service charge – operating costs' recovers Water NSW's ongoing operating costs for the maintenance and repair of government owned meters to ensure they are in a condition that complies with the new metering requirements. It includes activities such as onsite accuracy testing, calibration and resealing of meters. Some key cost drivers for these activities include contract administration costs to manage staff conducting field visits and travel time because of the distance between meters.

The 'meter service charge – capital costs' recovers the capital expenditure Water NSW will incur to bring the government owned meters up to a standard that complies with the new metering requirements.

Coleambally Irrigation Council Limited supported water users with government owned meters being charged a meter service charge to recover the costs of the ongoing maintenance of these meters. It considered that it is important going forward that cross subsidisation or socialisation does not occur (in either direction) between water users who own their meter and water users with government owned meters.²⁵²

However, Murray Valley Private Diverters did not support the two proposed additional charges to customers with government owned meters. It considered that there is insufficient explanation of why these additional charges are needed when Water NSW already recovers its operational costs under existing meter service charges. It was also concerned that there is likely to be a capital cost in the future if the government funding for the next determination period is removed.²⁵³

We consider that separate charges for government owned meters are a transparent way of recovering the different capital and operating costs for this service. The charges recover the additional costs of implementing the new policy, which are incremental to those recovered from existing meter service charges. We also support moving to a simpler charge structure that does not vary between different water users because:

- This is consistent with the approach we have used to set the scheme management, telemetry and non-telemetry charges. For example, none of these charges vary by meter size.
- The existing meter service charges are relatively complex and may imply an overly precise level of cost-reflectiveness. They vary not only by meter size, but also by telemetry use and whether the water source is regulated, unregulated or groundwater. This price structure was proposed by Water NSW for the 2017 and 2021 Determinations, which we then accepted. We consider the new meter service charges proposed by Water NSW presents an opportunity to reduce this complexity.

14.3.4 Meter service charge for channel meters

Water NSW has proposed an updated meter service charge for 19 government owned channel meters. These meters are all open channel construction with sensors in the channels, each site with more than one sensor in-situ. Water NSW proposed a new charge of \$9,500 compared to existing charges of \$6,237 (\$2020-21).²⁵⁴ This does not include telemetry and non-telemetry costs.

Under the new policy, there is a requirement for annual validation of the accuracy of channel meters. However, Water NSW's build-up for the channel meter costs is based on three visits each year to each site.

Cardno considered Water NSW's proposed costs and charges for channel meters. It was unable to conclude that the proposed costs are efficient as no evidence could be provided to substantiate further site visits. Cardno recommended maintaining the current channel meter charge. We agree with Cardno's conclusion and decided to maintain the charge in real terms giving a charge \$6,306 (\$2021-22) from 1 October 2021.

14.4 We set metering charges to reflect our decisions on efficient costs and charge structure

Our decision is:



58. To set charges for Water NSW's non-urban metering reforms as set out in Table 14.6 and Table 14.7.

Table 14.6 compares our final decision on non-urban metering charges to Water NSW's revised proposal.

Table 14.6 Decision on non-urban metering charges compared to Water NSW's revised proposal (\$/year, \$2021-22)

	Charge (\$/year) Water NSW 2021 revised proposal	Charge (\$/year) IPART final decision	Privately owned meter	Government owned meter
Scheme management charge	79	73	✓	✓
Telemetry charge	257	226	✓	✓
Non-telemetry charge	257	226	✓	✓
Meter service charge – operating costs	934	899	✗	✓
Meter service charge – capital costs	608	0	✗	✓

Note: Totals may not sum due to rounding. Water NSW's April 2021 proposed charges are shown in \$2021-22. The scheme management charges, telemetry charge and non-telemetry charge will vary if more customers use telemetry. See Table 14.7 for further information. Source: Water NSW, Response to the IPART Draft Determination on Rural Bulk Water and WAMC Pricing – Metering Reform, April 2021, p 21, 28, 29. Cost for telemetry/non-telemetry is not included in the 'meter service charge – operating costs' for government owned meters.

We decided that the level of the scheme management charge, telemetry charge and non-telemetry charge should vary as the proportion of customers that voluntarily opt in to telemetry increases, as set out in Table 14.7. This is consistent with our draft decision.

Table 14.7 Decision on scheme management, telemetry and non-telemetry charges for different telemetry opt-in proportions (\$2021-22)

Telemetry opt-in	Up to 24%	25-49%	50-74%	75% or more
Scheme management charge	73	66	59	51
Telemetry charge	226	209	191	182
Non-telemetry charge	226	219	219	219

Note: The non-telemetry charge for 25-49%, 50-74% and 75-100% does not vary since the underlying costs are all variable (i.e. staff time for site inspections and downloading LIDs).

Source: IPART analysis using information provided by Water NSW and Cardno.

When the proportion of customers that opt in is low (up to 24%), the telemetry costs per meter are higher than the non-telemetry costs per meter. However, to ensure that these charges do not provide a disincentive for customers to opt in to telemetry, we recommend setting the same charge of \$226 for up to 24% telemetry opt-in. Once telemetry opt-in is 25% or more, the telemetry and non-telemetry charges will reflect the efficient costs of providing these services.

PIAC considered that there should be greater incentives to opt in to telemetry. It proposed a differential between telemetry and non-telemetry charges from the outset, with the telemetry charge initially based on more than 75% of meters opting in.²⁵⁵

Water NSW submitted that while the sliding telemetry scale is based on Water NSW's sensitivity analysis on the impact of telemetry uptake rates, this analysis was based on the hypothetical long run costs of administering the non-urban metering reforms. Water NSW proposed a one-year lag is introduced between when the telemetry take-up rates move into the next higher band and when the new tariff band takes effect.²⁵⁶

We do not consider that the adjustment proposed by PIAC is necessary and that our approach is more cost reflective. As noted above, the NSW and Australian Governments are funding a telemetry rebate program which already provides a financial incentive to opt in to telemetry.

Further, we do not consider that a one-year lag should be introduced between when the telemetry take-up occurs and the relevant telemetry opt-in charge commences. We considered the long-term nature of the costs that underpin Water NSW's modelling when setting charges for each of the telemetry ranges and have applied a conservative approach, using the lower end of each band to set the charge (e.g. the 0% voluntary uptake costs apply throughout the 'Up to 24%' range of voluntary uptake). We consider that an efficient business should be able to plan appropriately and recover its costs through the charges we have set.

Water NSW will notify IPART of the proportion of customers that opt in to telemetry before the beginning of each year. Its estimate will be based on the best available information. If Water NSW does not provide this information, we decided that the price in the next band up from the previous year should be applied. For example, if the proportion of voluntary telemetry uptake in 2022 is 20%, and there is a failure to notify in 2023, then the presumption for that year will be that the proportion is in the range of 25% - 49%. On balance, we consider that this should provide an appropriate incentive for Water NSW to provide an estimate based on the best available information each year.

Charges under our final decisions are:

- 11% or \$36 lower than Water NSW's revised proposal for water customers with privately owned meters

- 36% of \$679 lower than Water NSW's revised proposal for water customers with government owned meters.

There are 5 main reasons for these differences:

- We adopted Cardno's recommended levels of efficient operating and capital expenditure which are 15% lower than Water NSW's revised proposal. These estimates are based on:
 - forecasting the efficient costs of the activities required to implement the policy for of all users (privately owned and government owned meters) consistent with compliance dates required by the *Water Management (General) Regulation 2018*.
 - incorporating new information on Water NSW's proposed deferral of operating and capital expenditure for government owned meters. Water NSW's April proposal included operating and capital expenditure forecasts based on accelerating compliance for government owned meters. Water NSW has provided a revised profile where expenditure aligns with the compliance dates required by the Regulation.
 - including the costs of compliance for floodplain harvesting meters from 2022-23.
- We applied a WACC of 1.8% real post-tax, calculated with regard to the ACCC's pricing principles as required under the WCR. Water NSW applied a higher WACC, calculated using IPART's standard approach and submitted that the return on corporate system and vehicle assets should be calculated using a weighted average of the approaches to reflect the nature of these costs.²⁵⁷ To prevent over-recovery of costs for customers in Murray-Darling Basin valleys (if we use the higher WACC), we have applied the lower WACC to all customers.
- We calculated charges to apply from 1 October 2021 rather than from 1 July 2021.
- We adjusted the 'meter service charge – capital costs' to reflect government funding which offsets Water NSW's capital costs for upgrading government owned meters. We have set 'meter service charge – capital costs' of \$0 per year for the 2021 determination period (see Table 14.6). In the absence of this funding, water customers with government owned meters would have faced a higher 'meter service charge – capital costs' of \$602 per year.

The 'scheme management charge', 'telemetry' and 'non-telemetry charge' are either the same or slightly lower than our draft decisions. The 'meter service charge – operating costs' is \$68 (or 8%) higher than our draft decision. Although this charge is higher, under our final decisions, customers will not pay this charge until the later of the compliance date or when Water NSW makes meters compliant.

14.5 We have a framework to transition metering charges

Our decision is:



59. To apply the following transitional arrangements in moving from existing to new metering charges:
- Scheme management charge to apply annually from the start of the determination period, 1 October 2021.

- Telemetry or non-telemetry charge for customers with privately owned meters to be prorated using the number of days remaining in the financial year from the relevant compliance date set out in the *Water Management (General) Regulation 2018*.
- Telemetry or non-telemetry charge and government owned 'meter service charge – operating costs' for customers with government owned meters to be prorated using the number of days remaining in the financial year from the later of the relevant compliance date set out in the *Water Management (General) Regulation 2018* or the date the meter is made compliant.

Our decision ensures the transition to new charges is transparent and that there are appropriate incentives in place for water customers with privately owned meters and Water NSW, who is responsible for government owned meters, to achieve compliance with the required roll out dates. This is unchanged from the draft decision.

Stakeholders generally supported these transitional arrangements. NSWIC agreed with the transitory approach for new charges coming into effect, aligned with the various rollout dates (but noting delays in implementation will almost certainly cause issues).²⁵⁸ Coleambally Irrigation Co-operative Limited supported the scheme management charge applying from the start of the determination period, and new charges applying from the compliance date. It noted that commencement of the new charges in parallel with the compliance date will provide the incentive required for water customers to make decisions about their works.²⁵⁹

Water NSW proposed two amendments to the arrangements for new charges:

- Scheme management charges should be charged in full in Year 1 when the charge is applicable.
- For those customers subject to the 1 December 2020 compliance date which is prior to the commencement of the upcoming determination, the full non-telemetry/telemetry charges should be levied from Year 1.²⁶⁰

Our proposed approach to pro-rating charges addresses Water NSW's concerns. We have set annual equivalent charges that, when pro-rated from 1 October 2021, recover Water NSW's efficient costs from 1 July 2021. This means that the sum of the prorated charge in 2021-22 plus the full year charges in 2022-23 to 2024-25 is equal to the efficient costs from 1 July 2021 to 30 June 2025 (on a net present value basis).

14.5.1 Water NSW cannot charge users both existing and new metering charges

Water NSW advised that there may be circumstances where it needs to charge a user both the existing and new metering charges.²⁶¹ It considered that if a customer fails to self-report their water usage throughout the year, Water NSW will be required to visit the site to determine water take. Water NSW will incur additional labour costs to provide this service. This is in addition to the new metering services (i.e. site visit to complete a data download of the meter). Water NSW proposed to recover these additional costs by applying the existing metering charge to these customers.

We do not agree with Water NSW's proposal. We consider that if a customer has failed to self-report their water usage, this is considered non-compliance with the new water metering rules. NRAR is responsible for enforcing metering compliance. On NRAR's website it notes that it will first provide directions to water users to ensure compliance before issuing fines and further responses to non-compliance. We consider that NRAR is the appropriate regulator to ensure metering compliance.

In addition, we note that the circumstances identified by Water NSW may not occur and we are unable to quantify the amount of additional costs involved or determine the efficiency of these costs as these costs vary depending on the location of the non-complying customer. There may also be other unforeseen circumstances if we allow Water NSW to recover both the existing and new metering charges from a particular water user. Therefore, we decided not to allow Water NSW to charge both existing and new charges under the final determinations.

14.6 We considered different ways to deal with uncertainty

Our decisions are:



60. Not to provide an unders and overs mechanism to Water NSW for the rollout of the non-urban metering reforms.

61. That the Tribunal intends to consider the impact of any further deferral of the floodplain harvesting policy and potentially make an adjustment to future charges if needed at the next determination.

62. To set an exit charge for the 2021 determination period of \$0.

14.6.1 An unders and overs mechanism is not appropriate

Water NSW submitted that an unders and overs (UOM) mechanism provides a reasonable and balanced solution for the potential risks and uncertainty of the roll out of the non-urban metering reform. It considered that there is uncertainty attached to the program roll out and the cost estimates, due to potential changes in the policy landscape and the roll out schedule and volumes, which is ultimately outside of Water NSW's reasonable control.²⁶²

We do not consider that it is appropriate for Water NSW to have a UOM to mitigate its financial risks arising from cost uncertainty or other factors that are within its control, higher or lower unit costs or a delay in the rollout for government owned meters based on its ability to deliver the program.

However, we consider that we may need to make an adjustment to charges at the next review for uncertainty surrounding floodplain harvesting meters. While it is still government policy for floodplain harvesting meters to use telemetry, there is uncertainty over when the policy will take effect. If the policy takes effect earlier (or later) than what we have assumed when setting costs and charges, Water NSW may materially over (or under) recover its costs. Water NSW has no control over the timing of when the changes may take effect.

14.6.2 Exit fees for the 'meter service charge – capital cost' for government owned meters may be needed in future reviews

We consider that an exit fee may be needed to mitigate the financial risks Water NSW faces associated with customers leaving the government owned meters program after investment has occurred.

Stakeholders generally supported our draft decision that exit fees may be needed in future determinations. For example:

- Coleambally Irrigation Co-operative Limited supported the approach in principle. It understands that currently the exit fee would be zero because government is funding the upgrade of the meter and it is only in the future that an exit fee may apply.²⁶³
- Water NSW supported the introduction of exit fees at a future determination to recoup any unfunded costs (including capital costs not covered by government funding).²⁶⁴

In theory, we consider that an exit fee is needed to mitigate the financial risks Water NSW faces from customers leaving the government owned meters program after investment has occurred. However, our modelling indicates that the NSW Government's funding for government owned meters will cover Water NSW's capital costs for upgrading these meters. As a result, we have set the exit charge for the 2021 determination period at \$0.

In future determination periods, if Water NSW incurs prudent and efficient capital expenditure that is greater than the level of government funding, it may be appropriate for Water NSW to charge customers an exit fee. In this case, we consider that customers should be charged an exit fee based on the residual value of the RAB for each meter.

When a customer opts out after WNSW have incurred costs, then it is reasonable for the customer to pay a fee which is equivalent to the outstanding amount of principal paid for that meter – that is the capital expenditure less cumulative depreciation. Water NSW advised that when users opt out of the government owned meter program, they will have the option of retaining the meter with this to be decided on a case by case basis.²⁶⁵

We consider that the exit fee should be calculated based on the residual value of the RAB for each meter on the day a customer opts out. The exit fee would be calculated as:

Exit fee = Average capital expenditure per meter (\$) – depreciation since meter made compliant (\$)

If Water NSW incurred \$1,000 of efficient and prudent expenditure that was not covered by government funding, an exit fee could be calculated as follows. The determination would specify the following formula (see Box 14.2 for further details)

$$\text{Exit fee } (\$2020-21) = \$1,000 - (\$0.27 \times \text{Days since meter made compliant})$$

Murray Valley Private Diverters raised concerns that 'un-burying' the meters is a vital requirement if individual landholders wish to opt out of government meters. This issue also relates to arrangements once government owned meters reach 'end of life' and who would wear the costs of future inspection requirements (meters would need to be on the surface of land not buried).²⁶⁶

The policy requires that customers with privately owned meters that are not on the surface need to excavate meters to for testing and compliance. However, Water NSW, as a government agency, is permitted to use a fleet-based approach to compliance, meaning that only a percentage of sites need to be 'un-buried' or excavated for testing. If a water user opts out of the government owned meter program, they would no longer be part of the government owned fleet. Their meter would not be included in the fleet-based approach and hence the meter would need to be excavated for compliance purposes.

Water NSW confirmed that that end of life arrangements for government owned meters have not yet been decided. It does not anticipate any meters reaching end of life during the 2021 determination period.²⁶⁷

Box 14.2 Calculating an exit fee for meter service charge – capital costs

This example of how to calculate an exit fee is based on capital expenditure of \$1,000 per meter depreciated over a ten-year asset life. This equates to annual depreciation of \$100 a year or \$0.27 a day. The table below sets out the exit fee that would apply through the determination period.

	RBA value of meter on	Cumulative depreciation at end of day	Exit fee (end of day)
1	Day 1	0.27	1,000
90	Day 90	24.66	975
180	Day 180	49.32	951
270	Day 270	73.97	926
360	Day 360	98.63	901
...	...	...	...
...	...	...	...
1,080	Day 1,080	295.89	704
1,170	Day 1,170	320.55	679
1,260	Day 1,260	345.21	655
1,350	Day 1,350	369.86	630
1,440	Day 1,440	394.52	605
1,461	Day 1,461 (end of determination period)	400.27	600
3,650	Day 3,650 (end of asset life)	1,000.00	-

Note: \$2020-21

14.7 New metering charges will increase bills for customers

The change in meter charges and customers' total bills depend on the water source (regulated, unregulated or ground water), whether the meter is privately owned or government owned, entitlement and usage volumes and meter size. In addition, if more customers opt in to telemetry, then metering charges and customer bills will be lower than if fewer customers opt in to telemetry.

We considered these impacts across a range of customers and for different levels of telemetry opt-in. Appendix D sets out the combined impact of our decisions on non-urban metering reform charges and Water NSW and WAMC bulk water and water management charges.

14.7.1 Customers with government owned meters face larger increases

The additional costs faced by customers relative to their existing bills are greatest for customers with government owned meters. For example, if up to 24% of customers opt in to telemetry, general security licence holders on regulated rivers with a 500 ML entitlement and 100mm meter with telemetry:

- that is **government owned** would face additional metering charges of \$720 (or an increase of up to 20%) in their bills caused by metering.
- that is **privately owned** would face additional metering charges of \$300 (or an increase of up to 10% in their bills caused by metering).

Customers with privately owned meters will also be required to purchase and maintain a new or replacement meter at their own expense. These costs would be borne by customers and have not been included in our impact analysis.

Several stakeholders were very concerned about the affordability of the increases proposed by Water NSW. The NSW Government has acknowledged these concerns and is providing funding of \$14.6 million to Water NSW to cover the capital costs of upgrading government owned meters. This funding reduces the 'meter service charge – capital costs' to \$0 for the 2021 determination period. In the absence of this funding, users with government owned meters would have faced a higher 'meter service charge – capital costs' of \$602 per year.

14.7.2 Impacts will be smaller if more users opt in to telemetry

If more customers opt in to telemetry, then metering charges and customer bills will be lower than if fewer customers opt in to telemetry. For example, if 75-99% of customers opt in to telemetry then general security licence holders on regulated rivers with a 500 ML entitlement and a 100mm meter with telemetry:

- that is **government owned** and uses telemetry would face additional metering charges of \$654 (or an increase of up to 18% in their bills caused by metering).
- that is **privately owned** and uses telemetry would face additional metering charges of \$234 (or an increase of 8% in their bills caused by metering).

As discussed above, the NSW Government and Australian Government are providing funding to deliver a telemetry rebate program across NSW. This will provide a financial incentive for a user to install a telemetered meter to remotely transmit their water take information by providing funding for the capital costs of telemetry. We expect that this rebate will encourage users to opt in to telemetry and over time will reduce the scheme management and telemetry charges.

14.7.3 Impacts are relatively larger for customers with smaller entitlements

The percentage impacts increase with smaller licence entitlement volumes and usage. This is because the fixed nature of the meter charge means that the lower the water charge bill, the greater the increase caused by the proposed metering charges. For example, if up to 24% of customers opt in to telemetry, general security licence holders on regulated rivers with a 100mm meter with telemetry with a privately owned meter:

- with an entitlement of 500 ML in the Murray would face a 7% increase resulting from the \$300 increase caused by metering
- with an entitlement of 250 ML in the Murray would face a 13% increase caused by metering resulting from the \$300 increase caused by metering.

Appendices

Appendix A >>

Matters to be considered by IPART



A

This appendix explains how we have considered certain matters we are required to consider under the *Independent Pricing and Regulatory Tribunal Act 1992* (the IPART Act).

A.1 Matters under section 15(1) of the IPART Act

IPART is required under section 15(1) of the IPART Act to have regard to the following matters in making determinations and recommendations:

- a. The cost of providing the services concerned
- b. The protection of consumers from abuses of monopoly power in terms of prices, pricing policies and standard of services
- c. The appropriate rate of return on public sector assets, including appropriate payment of dividends to the Government for the benefit of the people of New South Wales
- d. The effect on general price inflation over the medium term
- e. The need for greater efficiency in the supply of services so as to reduce costs for the benefit of consumers and taxpayers
- f. The need to maintain ecologically sustainable development (within the meaning of section 6 of the *Protection of the Environment Administration Act 1991*) by appropriate pricing policies that take account of all the feasible options available to protect the environment
- g. The impact on pricing policies of borrowing, capital and dividend requirements of the government agency concerned and, in particular, the impact of any need to renew or increase relevant assets
- h. The impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body
- i. The need to promote competition in the supply of the services concerned
- j. Considerations of demand management (including levels of demand) and least cost planning
- k. The social impact of the determinations and recommendations
- l. Standards of quality, reliability and safety of the services concerned (whether those standards are specified by legislation, agreement or otherwise).

Table A.1 outlines the sections of the report that address each matter.

Table A.1 Consideration of section 15(1) matters by IPART

Section 15(1)	Report reference
Cost of providing the services	Chapter 6 sets out WAMC's total efficient costs to deliver its monopoly services over the determination period. Further detail is provided in Chapters 3 and 4 and Appendix C. Chapter 5 sets out MDBA and BRC's total efficient costs allocated to WAMC and its water users.
Protection of consumers from abuses of monopoly power	We consider our decisions would protect water users from abuses of monopoly power, because they reflect the efficient costs WAMC requires to deliver its monopoly services. This is addressed throughout the report, particularly in Chapter 2 (where we establish the scope of its monopoly services), Chapters 3 to 5 (where we establish the efficient historical and forecast expenditure), and Chapters 9 to 11 (where we set out our pricing decisions and impacts).
Appropriate rate of return and dividends	Chapter 6 outlines that we have allowed a market-based rate of return on debt and equity that would enable a benchmark business to return an efficient level of dividends.
Effect on general price inflation	Chapter 11 considers the potential impact of our pricing decisions on WAMC, its water users and the NSW Government (on behalf of the broader community). While prices and bills for most water users are increasing, the impact on general price inflation is likely minimal. This is because the impact of WAMC's charges and bills is relatively small when assessed against farming businesses and the value of water entitlements and allocations (as determined through the water trading market).
Need for greater efficiency in the supply of services	Chapters 3 to 5 and 12 set out our decisions on WAMC's efficient historical and forecast expenditure. These decisions would promote greater efficiency in the supply of WAMC's monopoly services.
Ecologically sustainable development	Chapters 3 to 5 set out WAMC's efficient historical and forecast expenditure that allows it to meet all of its regulatory requirements, including its environmental obligations.
Impact on borrowing, capital and dividend requirements	Chapters 6 and 11 explain how we have provided WAMC with an allowance for a return on and of capital; our assessment of its cost recovery levels and our assessment of impact on Consolidated Funds.
Impact on pricing policies of any arrangements that the government agency concerned has entered into for the exercise of its functions by some other person or body	Chapters 3 to 5 determine the prudent and efficient cost of construction and operational contracts that WAMC has entered into and costs associated with these over the next period.
Need to promote competition	In determining efficient costs, we have been mindful of relevant principles such as competitive neutrality (e.g. we have included a tax allowance for WAMC as set out in Chapter 6).
Considerations of demand management and least cost planning	Chapters 3 to 5 outline how we have assessed WAMC's efficient historical and forecast expenditure required to deliver its monopoly services at least cost. Chapters 9 and 10 outline how we have set prices to reflect efficient costs.
Social impact	Chapter 11 considers the potential impact of our pricing decisions on WAMC, its water users and the NSW Government (on behalf of the broader community).
Standards of quality, reliability and safety	Chapters 3 to 5 detail our consideration of WAMC's efficient historical and forecast expenditure so it can meet the required standards of quality, reliability and safety in delivering its services.

A.2 Matters under section 16 of the IPART Act

The determination that accompanies this report increases a maximum price for a government monopoly service, or determines a methodology that would or might increase such a price.

If the prices were not increased to the maximum we set (as outlined in the determination and in this report), this could have a negative impact on Treasury's consolidated fund. This scenario would likely result in higher government contributions to fund the revenue shortfall from water users. Chapter 11 provides further information.

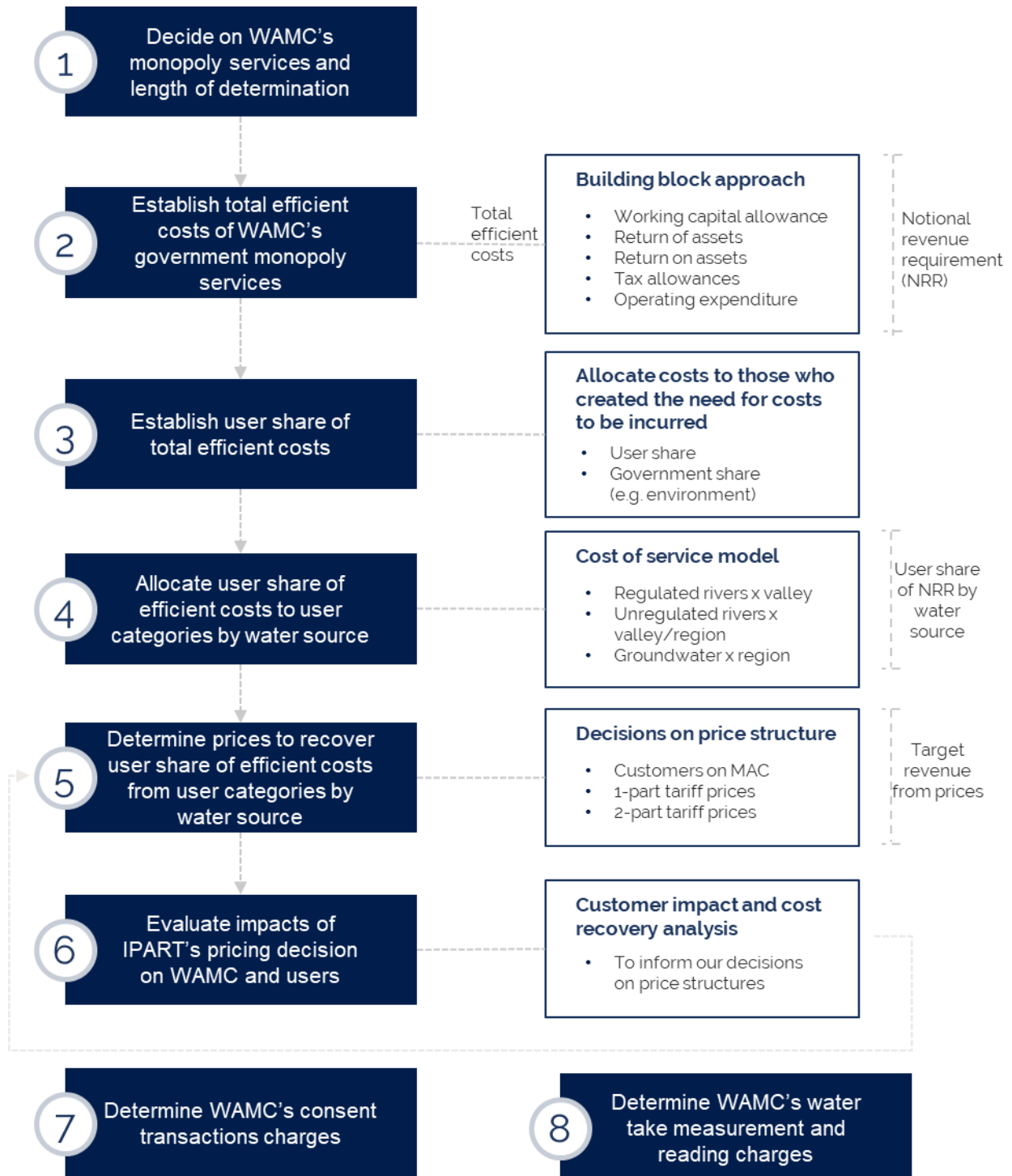
Appendix B »

Our approach when setting prices
for WAMC

B

Our review can be represented as a sequence of steps. Each step involves making decisions on methods and key parameters. The process we undertake to conduct the review is presented in Figure B.1.

Figure B.1 IPART's approach to the review of WAMC's prices



As an additional step to our determination of prices, we also establish WAMC's output measures and performance indicators for the 2021 determination period.

Step 1 – Decide on monopoly services and length of determination

We start our review by making a decision on the scope of government monopoly services currently provided by the Department of Planning, Industry and Environment (DPIE), Water NSW and the Natural Resources Access Regulator (NRAR), under the *Independent Pricing and Regulatory Tribunal (Water Services) Order 2004*.

We also decide on the length of the determination period (Chapter 2).

Step 2 – Establish total efficient costs, or notional revenue requirement

For this review, we broadly determine efficient costs for water management services (including costs by interjurisdictional agencies such as the Murray Darling Basin Authority (MDBA) and Dumaresq–Barwon Border Rivers Commission (BRC), consent transaction services, and water take measurement and reading services (or metering services).

For water management services we use the building block approach to establish the total efficient costs or the notional revenue requirement (NRR) to provide the monopoly services over the determination period. We use expenditure consultants to inform our assessment of efficient costs. The building block approach and its components are discussed further in Chapter 2. Our evaluation of the building block components is presented in Chapters 3 to 6, with total efficient costs presented in Chapter 6.

For consent transaction and metering services, we determine the efficient costs through our expenditure review with our expenditure consultants. Our evaluation of efficient costs for consent transactions and metering services is presented in Chapters 12 to 13.

Step 3 – Establish user share of efficient costs

Total efficient costs for water management services are then shared between water entitlement holders ('users') and the NSW Government (on behalf of the broader community), based on who created the need to incur those costs (Chapter 7).

This allocation occurs at the activity code level. That is, each activity code is assigned a user share (percentage), and the efficient costs of that activity code are shared between users and the Government according to that share.

As outlined below, water management charges are set to recover the user share of costs (or user share of NRR).

Step 4 – Allocate user share of efficient costs across water sources

The user share of total efficient costs for water management services is then allocated to 'water sources', defined as the combination of water type (i.e. regulated rivers, unregulated rivers and groundwater) and geographic location (i.e. valley or region).

We use a cost allocation model that uses cost drivers (or allocators) for each activity code to allocate the user share of each activity's costs to water sources (Chapter 7).

Step 5 – Determine water management prices to recover the user share of efficient costs

We set water management prices for each water source, to recover the user share of NRR requirement allocated to that water source. The NRR for each water source recovers the allocated efficient costs for water management services provided by WAMC and other interjurisdictional agencies such as MDBA and BRC.

We make a series of decisions on the structure of water management prices, including decisions such as (Chapter 9):

- unbundling of water management prices into 3 components: WAMC's water management, MDBA and BRC charges (collectively referred to as combined water management charges)
- geographic differentiation (i.e. defining the geographic boundaries for a common price level to apply)
- tariff structure (1-part and 2-part tariffs, including a decision on the relative shares of fixed and variable charges in 2-part tariff revenue)
- the level of the minimum access charge.

To set prices for 1-part and 2-part tariffs, we also need to establish the forecast volume of entitlement and water take for each water source to use as a basis of distributing the user share of revenue requirements. We determine these forecasts in Chapter 8.

We endeavour to set cost reflective prices, so revenue raised through combined water management charges from a water source covers the user share of the NRR for that water source. Combined water management charges can be set so revenue matches the user share of the NRR in each year of the determination period, or they can be set so revenue matches the user share of the NRR on a present value basis over the determination period.

For some water sources, setting charges at full cost recovery may have large impacts on water users. To mitigate these impacts, we may choose to set charges below full cost recovery over the 2021 determination period, and transition towards full cost recovery over several determinations. This approach relates to the trajectory of prices over a period, or the 'glide path' of prices (Chapters 9 and 10). It is also linked to customer impacts, which is discussed in Step 6 below and also in Chapter 11.

Our water management prices by water source are presented in Chapter 10.

Step 6 – Evaluate impacts of our pricing decisions

Step 5 may result in prices set at full cost recovery level or below the full cost recovery level for some water sources. The total revenue recovered through the combined water management charges is called target revenue.

The share of target revenue as a percentage of the user share of the NRR is called the level of cost recovery. The shortfall is funded by the Government as a community service obligation (CSO). We evaluate the level of cost recovery and the amount of CSO, to establish the impact of our pricing decisions on WAMC.

We use typical bill analysis to evaluate the impact of our pricing decisions on water users (Chapter 11).

Step 7 – Determine consent transactions charges

In this step, we determine consent transactions charges, which are set separately to our determination of water management prices. These charges are set based on efficient incremental costs (Chapter 12).

Step 8 – Determine water take measurement service charges

In this step, we determine charges related to water take measurement, which are set separately to our determination of water management prices. These are meter service charges (for government-owned meters in unregulated rivers and groundwater sources), water take reading/assessment charges (for privately owned meters), and ancillary service charges. These charges are set based on efficient incremental costs (Chapters 13 and 14).

Appendix C >>

Weighted average cost of capital



To calculate an allowance for the return on assets in the revenue requirement, we multiply the value of the regulatory asset base in each year of the determination period by an appropriate rate of return. To do this, we determine the rate of return using a weighted average cost of capital (WACC).

This appendix shows the parameters we used to calculate the WACC and explains our decision about how to treat annual changes in the WACC over the determination period. Our decisions on the WACC for WAMC are set out in Chapter 6.

C.1 We use our standard approach to calculate the WACC

We used our standard methodology to calculate the WACC for WAMC. Under our approach we estimate one WACC based on current market data and one based on long-term average data. When our uncertainty index, which indicates the level of volatility in capital markets, is within one standard deviation of its mean value, we select the mid-point of the current and long-term WACC values. The uncertainty index is currently within this range.

Section C.2 explains our methodology for each parameter in more detail. Table C.1 sets out the parameters used to derive the 3.0% post-tax real WACC for WAMC.

Table C.1 WACC calculation using IPART's standard approach

	Step 1 – Market data		Step 2 – Final WACC range		
	Current	Long term	Lower	Mid-point	Upper
Nominal risk-free rate	1.60%	2.70%			
Inflation	2.20%	2.20%			
Implied Debt Margin	1.40%	2.50%			
Market Risk premium	7.9%	6.0%			
Debt funding	60%	60%			
Equity funding	40%	40%			
Total funding (debt + equity)	100%	100%			
Gamma	0.25	0.25			
Corporate tax rate	30%	30%			
Effective tax rate for equity	30%	30%			
Effective tax rate for debt	30%	30%			
Equity beta	0.70	0.70			
Cost of equity (nominal post-tax)	7.1%	6.9%			
Cost of equity (real post-tax)	4.8%	4.6%			
Cost of debt (nominal pre-tax)	3.0%	5.2%			
Cost of debt (real pre-tax)	0.8%	2.9%			
Nominal vanilla (nominal post-tax) WACC	4.7%	5.9%	4.7%	5.3%	5.9%
Post-tax real WACC	2.4%	3.6%	2.4%	3.0%	3.6%
Pre-tax nominal WACC	5.5%	6.7%	5.5%	6.1%	6.7%
Pre-tax real WACC point estimate	3.2%	4.4%	3.2%	3.8%	4.4%

Source: IPART calculations.

C.2 Our methodology to calculate WACC parameters

This section sets out the methodologies we use to derive the component parameters used to calculate the WACC under our standard approach.

C.2.1 Gearing and beta

In selecting proxy industries, we consider the type of business the firm is in. If we can't directly identify proxy firms that are in the same business, we would consider what other industries exhibit returns that are comparably sensitive to market returns.

We adopted the standard values of 60% gearing and an equity beta of 0.7. We undertook preliminary proxy company analysis on several different types of industries with risk profiles that appear similar to water utilities. The results for the electric utilities industry and the multiline utilities activity support continuing to use an equity beta of 0.7 when 60% gearing is used. While some other industries and activities analysed suggest a higher beta, the sample sizes for those proxy groupings are too small to warrant making what would be a major change from the status quo.

C.2.2 Sampling dates for market observations

We sampled all market observations as of 31 March 2021.^a We decided not to sample at a later date even though we had a 3-month delay to our decisions because:

- sampling at a different time of year creates unnecessary complexity and may introduce seasonal effects
- failing to use the most up-to-date market data is not a particular problem given we use the trailing average cost of debt, which minimises the impact of any one interest rate sample
- any movements in the cost of debt within the regulatory period will be picked up in our true-up calculation.

For earlier years in the trailing average calculation of the historic cost of debt we also sampled to the end of March in each year.

Our inflation forecast was produced using IPART's standard approach, with the Reserve Bank of Australia 1-year ahead forecast sourced from the February 2021 Statement of Monetary Policy.²⁶⁸

C.2.3 Tax rate

We assumed the Benchmark Equivalent Entity is a large public water utility. The scale economies that are important to firms of this type suggested the Benchmark Equivalent Entity would be likely to be well above the turnover threshold at which a firm becomes ineligible for a reduced corporate income tax rate. Therefore, we used a tax rate of 30%.

^a In our Draft Report, we used a post-tax real WACC of 2.8% based on market observations as of 31 December 2020.

C.2.4 Regulatory period

We applied the WACC estimate for the duration of the determination period.

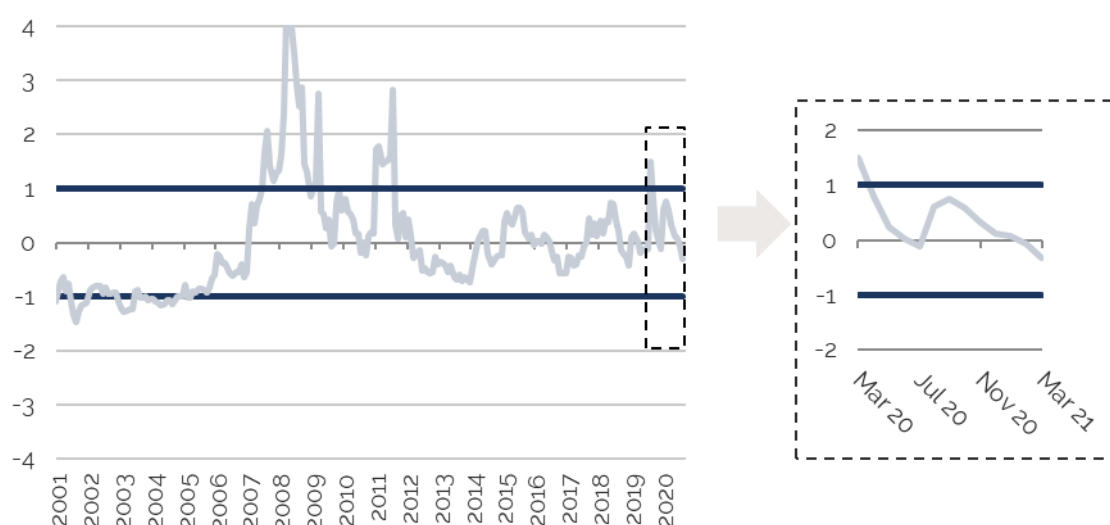
C.2.5 Application of trailing average method

Our [2018 review of the WACC method](#) introduced a decision to estimate both the long-term and current cost of debt using a trailing average approach, which updates the cost of debt annually over the regulatory period. As foreshadowed in our 2018 review of the WACC method, we employed a transition to trailing average in the calculations presented above.

C.2.6 Uncertainty index

We tested the uncertainty index for market observations to the end of March 2021. It was within the bounds of plus and minus one standard deviation of the long-term mean value of zero. The uncertainty index for July 2021 also remains within the normal change. Therefore we maintained the default 50%/50% weighting between current and historic market estimates of the cost of debt and the cost of equity (Figure C.1).

Figure C.1 IPART's uncertainty index



Data sources: Refinitiv; Bloomberg; and IPART calculations.

Appendix D

Impacts of our decisions on non-urban
metering reform charges

D

D.1 Impacts on customers in regulated rivers

D.1.1 Government owned meters

Table D.1 Indicative impact of our decisions on bills on regulated rivers with government owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
High Security									
Murray	500	100%	8,377	9,931 - 9,881	19% - 18%	10,519 - 10,452	26% - 25%	9% - 8%	18%
Murrumbidgee	500	100%	6,059	7,645 - 7,595	26% - 25%	8,244 - 8,177	36% - 35%	12% - 11%	26%
South Coast	500	100%	30,704	31,577 - 31,528	3% - 3%	32,209 - 32,142	5% - 5%	2% - 2%	3%
General Security									
Murray	500	60%	4,998	5,923 - 5,874	19% - 18%	6,290 - 6,223	26% - 25%	14% - 13%	13%
Murrumbidgee	500	60%	3,557	4,586 - 4,537	29% - 28%	4,988 - 4,921	40% - 38%	20% - 18%	23%
South Coast	500	60%	18,030	18,796 - 18,746	4% - 4%	19,309 - 19,242	7% - 7%	4% - 4%	3%

a. Includes Water NSW bulk water charges, WAMC charges, MDBA and BRC charges and meter service charge (MSC). Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.2 Indicative impact of our decisions on bills on regulated rivers with government owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
High Security									
Murray	500	100%	8,377	9,931 - 9,908	19% - 18%	10,519 - 10,489	26% - 25%	9% - 8%	18%
Murrumbidgee	500	100%	6,059	7,645 - 7,623	26% - 26%	8,244 - 8,214	36% - 36%	12% - 11%	26%
South Coast	500	100%	30,704	31,577 - 31,555	3% - 3%	32,209 - 32,179	5% - 5%	2% - 2%	3%
General Security									
Murray	500	60%	4,998	5,923 - 5,901	19% - 18%	6,290 - 6,260	26% - 25%	14% - 13%	13%
Murrumbidgee	500	60%	3,557	4,586 - 4,564	29% - 28%	4,988 - 4,958	40% - 39%	20% - 18%	23%
South Coast	500	60%	18,030	18,796 - 18,773	4% - 4%	19,309 - 19,279	7% - 7%	4% - 4%	3%

a. Includes Water NSW bulk water charges, WAMC charges, MDBA and BRC charges and meter service charge (MSC). Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

D.1.2 Privately owned meters

Table D.3 Indicative impact of our decisions on bills on regulated rivers with privately owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
High security									
Border	500	100%	10,736	12,359 - 12,309	15% - 15%	13,025 - 12,959	21% - 21%	3% - 2%	19%
Gwydir	500	100%	13,874	18,011 - 17,961	30% - 29%	19,485 - 19,419	40% - 40%	2% - 2%	38%
Namoi	500	100%	22,244	29,966 - 29,916	35% - 34%	32,540 - 32,474	46% - 46%	1% - 1%	45%
Peel	500	100%	35,989	44,476 - 44,426	24% - 23%	47,495 - 47,429	32% - 32%	1% - 1%	31%
Lachlan	500	100%	20,212	27,695 - 27,646	37% - 37%	30,300 - 30,234	50% - 50%	1% - 1%	48%
Macquarie	500	100%	16,473	21,428 - 21,378	30% - 30%	23,195 - 23,129	41% - 40%	2% - 1%	39%
Murray	500	100%	7,899	9,137 - 9,087	16% - 15%	9,620 - 9,554	22% - 21%	4% - 3%	18%
Murrumbidgee	500	100%	5,581	6,851 - 6,802	23% - 22%	7,345 - 7,279	32% - 30%	5% - 4%	26%
North Coast	500	100%	20,773	21,262 - 21,212	2% - 2%	21,825 - 21,759	5% - 5%	1% - 1%	4%
Hunter	500	100%	16,507	21,047 - 20,997	27% - 27%	22,770 - 22,704	38% - 38%	2% - 1%	36%
South Coast	500	100%	30,226	30,784 - 30,734	2% - 2%	31,310 - 31,244	4% - 3%	1% - 1%	3%
General security									
Border	500	60%	5,674	6,851 - 6,802	21% - 20%	7,347 - 7,281	29% - 28%	5% - 4%	24%
Gwydir	500	60%	6,945	8,438 - 8,389	21% - 21%	9,013 - 8,947	30% - 29%	4% - 3%	25%
Namoi	500	60%	12,663	15,588 - 15,538	23% - 23%	16,563 - 16,497	31% - 30%	2% - 2%	28%
Peel	500	60%	10,861	12,955 - 12,905	19% - 19%	13,797 - 13,731	27% - 26%	3% - 2%	24%
Lachlan	500	60%	8,916	11,864 - 11,815	33% - 33%	12,929 - 12,863	45% - 44%	3% - 3%	42%
Macquarie	500	60%	7,395	9,530 - 9,481	29% - 28%	10,333 - 10,267	40% - 39%	4% - 3%	36%
Murray	500	60%	4,520	5,130 - 5,080	13% - 12%	5,391 - 5,325	19% - 18%	7% - 5%	13%
Murrumbidgee	500	60%	3,079	3,793 - 3,743	23% - 22%	4,089 - 4,023	33% - 31%	10% - 8%	23%
North Coast	500	60%	14,365	14,855 - 14,806	3% - 3%	15,329 - 15,263	7% - 6%	2% - 2%	5%
Hunter	500	60%	11,774	14,994 - 14,944	27% - 27%	16,243 - 16,177	38% - 37%	3% - 2%	35%
South Coast	500	60%	17,552	18,002 - 17,952	3% - 2%	18,410 - 18,344	5% - 5%	2% - 1%	3%

a. Includes Water NSW bulk water charges, WAMC charges and MDBA and BRC charges. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.4 Indicative impact of our decisions on bills on regulated rivers with privately owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
High security									
Border	500	100%	10,736	12,359 - 12,337	15% - 15%	13,025 - 12,995	21% - 21%	3% - 3%	19%
Gwydir	500	100%	13,874	18,011 - 17,989	30% - 30%	19,485 - 19,455	40% - 40%	2% - 2%	38%
Namoi	500	100%	22,244	29,966 - 29,944	35% - 35%	32,540 - 32,510	46% - 46%	1% - 1%	45%
Peel	500	100%	35,989	44,476 - 44,453	24% - 24%	47,495 - 47,465	32% - 32%	1% - 1%	31%
Lachlan	500	100%	20,212	27,695 - 27,673	37% - 37%	30,300 - 30,270	50% - 50%	1% - 1%	48%
Macquarie	500	100%	16,473	21,428 - 21,406	30% - 30%	23,195 - 23,165	41% - 41%	2% - 2%	39%
Murray	500	100%	7,899	9,137 - 9,115	16% - 15%	9,620 - 9,590	22% - 21%	4% - 3%	18%
Murrumbidgee	500	100%	5,581	6,851 - 6,829	23% - 22%	7,345 - 7,315	32% - 31%	5% - 5%	26%
North Coast	500	100%	20,773	21,262 - 21,240	2% - 2%	21,825 - 21,795	5% - 5%	1% - 1%	4%
Hunter	500	100%	16,507	21,047 - 21,024	27% - 27%	22,770 - 22,740	38% - 38%	2% - 2%	36%
South Coast	500	100%	30,226	30,784 - 30,761	2% - 2%	31,310 - 31,280	4% - 3%	1% - 1%	3%
General security									
Border	500	60%	5,674	6,851 - 6,829	21% - 20%	7,347 - 7,317	29% - 29%	5% - 5%	24%
Gwydir	500	60%	6,945	8,438 - 8,416	21% - 21%	9,013 - 8,983	30% - 29%	4% - 4%	25%
Namoi	500	60%	12,663	15,588 - 15,566	23% - 23%	16,563 - 16,533	31% - 31%	2% - 2%	28%
Peel	500	60%	10,861	12,955 - 12,933	19% - 19%	13,797 - 13,767	27% - 27%	3% - 2%	24%
Lachlan	500	60%	8,916	11,864 - 11,842	33% - 33%	12,929 - 12,899	45% - 45%	3% - 3%	42%
Macquarie	500	60%	7,395	9,530 - 9,508	29% - 29%	10,333 - 10,303	40% - 39%	4% - 4%	36%
Murray	500	60%	4,520	5,130 - 5,107	13% - 13%	5,391 - 5,361	19% - 19%	7% - 6%	13%
Murrumbidgee	500	60%	3,079	3,793 - 3,770	23% - 22%	4,089 - 4,059	33% - 32%	10% - 9%	23%
North Coast	500	60%	14,365	14,855 - 14,833	3% - 3%	15,329 - 15,299	7% - 7%	2% - 2%	5%
Hunter	500	60%	11,774	14,994 - 14,971	27% - 27%	16,243 - 16,213	38% - 38%	3% - 2%	35%
South Coast	500	60%	17,552	18,002 - 17,980	3% - 2%	18,410 - 18,380	5% - 5%	2% - 2%	3%

a. Includes Water NSW bulk water charges, WAMC charges and MDBA and BRC charges. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

D.2 Impacts on customers in unregulated rivers

D.2.1 Government owned meters

Table D.5 Indicative impact of our decisions on bills on unregulated rivers with government owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Murray	500	60%	3,096	3,580 - 3,531	16% - 14%	3,922 - 3,855	27% - 25%	22% - 20%	5%
Murrumbidgee	500	60%	3,893	4,446 - 4,396	14% - 13%	4,887 - 4,820	26% - 24%	18% - 16%	9%
South Coast	500	60%	1,836	2,216 - 2,166	21% - 18%	2,343 - 2,276	28% - 24%	37% - 34%	-13%

a. Includes Water NSW bulk water charges, WAMC charges and MDBA and BRC charges. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.6 Indicative impact of our decisions on bills on unregulated rivers with government owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Murray	500	60%	3,096	3,580 - 3,558	16% - 15%	3,922 - 3,892	27% - 26%	22% - 21%	5%
Murrumbidgee	500	60%	3,893	4,446 - 4,423	14% - 14%	4,887 - 4,857	26% - 25%	18% - 17%	9%
South Coast	500	60%	1,836	2,216 - 2,194	21% - 19%	2,343 - 2,313	28% - 26%	37% - 36%	-13%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

D.2.2 Privately owned meters

Table D.7 Indicative impact of our decision on bills on unregulated rivers with privately owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Border	500	60%	1,896	1,881 - 1,831	-1% - -3%	1,990 - 1,924	5% - 1%	16% - 12%	-11%
Gwydir	500	60%	1,896	1,881 - 1,831	-1% - -3%	1,990 - 1,924	5% - 1%	16% - 12%	-11%
Namoi	500	60%	1,896	1,881 - 1,831	-1% - -3%	1,990 - 1,924	5% - 1%	16% - 12%	-11%
Peel	500	60%	1,896	1,881 - 1,831	-1% - -3%	1,990 - 1,924	5% - 1%	16% - 12%	-11%
Lachlan	500	60%	2,219	2,395 - 2,345	8% - 6%	2,608 - 2,542	18% - 15%	14% - 11%	4%
Macquarie	500	60%	2,219	2,395 - 2,345	8% - 6%	2,608 - 2,542	18% - 15%	14% - 11%	4%
Far West	500	60%	2,822	3,504 - 3,454	24% - 22%	3,731 - 3,665	32% - 30%	11% - 8%	22%
Murray	500	60%	2,582	2,777 - 2,728	8% - 6%	3,023 - 2,957	17% - 15%	12% - 9%	5%
Murrumbidgee	500	60%	3,379	3,643 - 3,593	8% - 6%	3,988 - 3,922	18% - 16%	9% - 7%	9%
North Coast	500	60%	3,773	4,045 - 3,995	7% - 6%	4,432 - 4,366	17% - 16%	8% - 6%	10%
Hunter	500	60%	1,288	1,538 - 1,489	19% - 16%	1,718 - 1,652	33% - 28%	23% - 18%	10%
South Coast	500	60%	1,322	1,413 - 1,364	7% - 3%	1,444 - 1,378	9% - 4%	23% - 18%	-13%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.8 Indicative impact of our decision on bills on unregulated rivers with privately owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Border	500	60%	1,896	1,881 - 1,859	-1% - -2%	1,990 - 1,960	5% - 3%	16% - 14%	-11%
Gwydir	500	60%	1,896	1,881 - 1,859	-1% - -2%	1,990 - 1,960	5% - 3%	16% - 14%	-11%
Namoi	500	60%	1,896	1,881 - 1,859	-1% - -2%	1,990 - 1,960	5% - 3%	16% - 14%	-11%
Peel	500	60%	1,896	1,881 - 1,859	-1% - -2%	1,990 - 1,960	5% - 3%	16% - 14%	-11%
Lachlan	500	60%	2,219	2,395 - 2,373	8% - 7%	2,608 - 2,578	18% - 16%	14% - 12%	4%
Macquarie	500	60%	2,219	2,395 - 2,373	8% - 7%	2,608 - 2,578	18% - 16%	14% - 12%	4%
Far West	500	60%	2,822	3,504 - 3,481	24% - 23%	3,731 - 3,701	32% - 31%	11% - 10%	22%
Murray	500	60%	2,582	2,777 - 2,755	8% - 7%	3,023 - 2,993	17% - 16%	12% - 10%	5%
Murrumbidgee	500	60%	3,379	3,643 - 3,621	8% - 7%	3,988 - 3,958	18% - 17%	9% - 8%	9%
North Coast	500	60%	3,773	4,045 - 4,023	7% - 7%	4,432 - 4,402	17% - 17%	8% - 7%	10%
Hunter	500	60%	1,288	1,538 - 1,516	19% - 18%	1,718 - 1,688	33% - 31%	23% - 21%	10%
South Coast	500	60%	1,322	1,413 - 1,391	7% - 5%	1,444 - 1,414	9% - 7%	23% - 20%	-13%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

D.3 Impacts on customers in groundwater

D.3.1 Government owned meters

Table D.9 Indicative impact of our decisions on bills on groundwater with government owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Inland	500	60%	3,385	3,735 - 3,685	10% - 9%	3,852 - 3,785	14% - 12%	20% - 18%	-8%
Murrumbidgee	500	60%	2,420	3,115 - 3,065	29% - 27%	3,504 - 3,437	45% - 42%	28% - 26%	21%
Coastal	500	60%	2,383	2,944 - 2,894	24% - 21%	3,279 - 3,212	38% - 35%	29% - 26%	11%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.10 Indicative impact of decisions on bills on groundwater with government owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Inland	500	60%	3,385	3,735 - 3,713	10% - 10%	3,852 - 3,822	14% - 13%	20% - 19%	-8%
Murrumbidgee	500	60%	2,420	3,115 - 3,093	29% - 28%	3,504 - 3,474	45% - 44%	28% - 27%	21%
Coastal	500	60%	2,383	2,944 - 2,921	24% - 23%	3,279 - 3,249	38% - 36%	29% - 27%	11%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

D.3.2 Privately owned meters

Table D.11 Indicative impact of our decisions on bills on groundwater with privately owned meters with telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Inland	500	60%	2,871	2,932 - 2,883	2% - 0%	2,953 - 2,887	3% - 1%	10% - 8%	-8%
Murrumbidgee	500	60%	1,905	2,312 - 2,263	21% - 19%	2,605 - 2,539	37% - 33%	16% - 12%	21%
Coastal	500	60%	1,868	2,141 - 2,091	15% - 12%	2,380 - 2,314	27% - 24%	16% - 13%	11%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Table D.12 Indicative impact of our decisions on bills on groundwater with privately owned meters without telemetry (\$/year, \$2021-22)

Valley	ML entitlement	Usage (%)	2020-21 bill ^a	2021-22 bill including metering	% change to 2020-21 bill	2024-25 bill including metering	% change to 2020-21 bill	Contribution to change of metering	Contribution to change of bulk water charges
Inland	500	60%	2,871	2,932 - 2,910	2% - 1%	2,953 - 2,923	3% - 2%	10% - 9%	-8%
Murrumbidgee	500	60%	1,905	2,312 - 2,290	21% - 20%	2,605 - 2,575	37% - 35%	16% - 14%	21%
Coastal	500	60%	1,868	2,141 - 2,119	15% - 13%	2,380 - 2,350	27% - 26%	16% - 14%	11%

a. Includes WAMC charges, MDBA and BRC charges and MSCs. Bills are nominal (i.e. \$2020-21).

Note: Assumes a 100mm meter. Bills in 2021-22 reflect that new prices apply from 1 October 2021.

Appendix E »

The revenue requirement for WAMC
only by cost codes



E

In Chapter 6, we outlined our decision on the total notional revenue requirement (NRR) for the 2021 determination. We set it at \$290.4 million over the 2021-22 to 2024-25 period and is comprised of:

- \$252.3 million for the WAMC NRR
- \$34.6 million for the Murray-Darling Basin Authority NRR
- \$3.5 million for the Dumaresq-Barwon Borders River Commission NRR.

Table E.1 sets out the WAMC NRR by cost codes. It also sets out the portion of the NRR that is recovered from water users and the NSW Government.

Table E.1 Estimated contributions by water users and the NSW Government to recover the notional revenue requirement of WAMC (\$'000, \$2020-21)

Cost code	Cost code name	User share				NSW Government share				Total			
		2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25
W01-01	Surface water quantity monitoring	4,959.4	5,352.4	5,612.3	5,909.1	1,507.2	1,622.6	1,702.3	1,788.5	6,466.7	6,975.0	7,314.7	7,697.6
W01-02	Surface water quantity data management and reporting	534.8	542.8	539.0	541.5	170.9	173.1	172.1	172.5	705.7	715.8	711.2	714.0
W01-03	Surface water quality monitoring	986.7	1,011.1	1,007.8	1,018.9	298.5	305.7	305.3	308.4	1,285.2	1,316.8	1,313.2	1,327.3
W01-04	Surface water algal monitoring	586.4	598.5	596.8	604.2	176.1	178.5	178.3	180.4	762.5	777.0	775.1	784.7
W01-05	Surface water ecological condition monitoring	247.9	242.7	239.0	211.1	73.2	71.3	70.2	62.0	321.0	314.0	309.3	273.1
W02-01	Groundwater quantity monitoring	1,350.8	1,713.7	2,051.1	2,535.2	11.3	11.0	10.9	10.7	1,362.0	1,724.8	2,062.0	2,545.9
W02-02	Groundwater quality monitoring	2,669.4	2,725.4	2,704.1	2,718.9	0.0	0.0	0.0	0.0	2,669.4	2,725.4	2,704.1	2,718.9
W02-03	Groundwater data management and reporting	2.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	2.7	0.0	0.0	0.0

Cost code	Cost code name	User share				NSW Government share				Total			
		2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25
W03-01	Water take data collection	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W03-02	Water take data management and reporting	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W04-01	Surface water modelling	2,524.5	2,505.5	2,491.5	2,475.2	1,079.1	1,071.5	1,068.0	1,060.7	3,603.6	3,577.0	3,559.5	3,535.9
W04-02	Groundwater modelling	1,105.1	1,096.8	1,090.7	1,083.6	0.0	0.0	0.0	0.0	1,105.1	1,096.8	1,090.7	1,083.6
W04-03	Water resource accounting	606.7	596.7	588.0	578.9	0.0	0.0	0.0	0.0	606.7	596.7	588.0	578.9
W05-01	Systems operation & water availability management	2,817.2	2,796.0	2,780.4	2,762.2	0.0	0.0	0.0	0.0	2,817.2	2,796.0	2,780.4	2,762.2
W05-02	Blue-green algae management	251.1	255.0	253.8	249.0	373.6	379.6	378.7	371.4	624.7	634.7	632.6	620.5
W05-03	Environmental water management	1,044.8	1,026.7	1,007.3	963.3	261.1	256.7	252.4	241.3	1,305.9	1,283.4	1,259.7	1,204.6
W05-04	Water plan performance assessment and evaluation	1,343.0	1,332.9	1,325.4	1,316.8	1,332.2	1,322.7	1,318.4	1,309.4	2,675.1	2,655.6	2,643.9	2,626.2
W06-01	Water plan development (coastal)	1,243.8	1,217.2	1,193.4	1,169.0	524.1	513.1	504.2	493.8	1,767.9	1,730.2	1,697.7	1,662.8
W06-02	Water plan development (inland)	2,084.9	2,040.3	2,000.5	1,959.6	890.1	871.4	856.4	838.6	2,975.0	2,911.8	2,856.9	2,798.3
W06-03	Floodplain management plan development	0.0	0.0	0.0	0.0	2,165.2	2,119.8	1,483.8	1,379.7	2,165.2	2,119.8	1,483.8	1,379.7
W06-04	Drainage management plan development	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cost code	Cost code name	User share				NSW Government share				Total			
		2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2024-25
W06-05	Regional planning and management strategies	3,659.6	3,581.3	3,054.0	2,991.5	2,426.2	2,375.3	2,030.3	1,988.1	6,085.8	5,956.6	5,084.2	4,979.7
W06-06	Development of water planning and regulatory framework	1,275.7	1,248.4	1,224.0	1,199.0	317.2	310.5	305.2	298.8	1,592.9	1,558.9	1,529.2	1,497.8
W06-07	Cross border and national commitments	807.2	797.0	792.5	821.0	803.4	793.5	790.9	819.1	1,610.6	1,590.5	1,583.4	1,640.0
W07-01	Water management works	1,728.1	1,699.7	1,675.0	1,649.0	433.0	426.0	420.8	414.2	2,161.1	2,125.7	2,095.8	2,063.2
W08-01	Regulation systems management	41.1	40.1	4.5	0.0	13.0	12.6	1.4	0.0	54.1	52.8	6.0	0.0
W08-02	Consents management and licence conversion	1,430.1	1,427.5	1,404.1	1,376.5	0.0	0.0	0.0	0.0	1,430.1	1,427.5	1,404.1	1,376.5
W08-03	Compliance management	6,189.4	6,092.3	5,842.8	5,755.0	0.0	0.0	0.0	0.0	6,189.4	6,092.3	5,842.8	5,755.0
W08-04	Consent transaction Overhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W08-99	Water consents overhead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W09-01	Water consents transactions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10-01	Customer management	4,068.6	4,295.4	4,258.6	4,029.4	13.0	12.6	1.4	0.0	4,081.6	4,308.0	4,260.0	4,029.4
W10-02	Business governance and support	3,081.4	3,420.3	3,822.3	4,122.3	1,276.0	1,350.0	1,443.5	1,507.4	4,357.4	4,770.3	5,265.9	5,629.8
W10-03	Billing management	2,021.1	1,956.3	1,736.8	1,739.3	23.5	23.0	3.5	0.0	2,044.6	1,979.3	1,740.3	1,739.3
Total		48,660.7	49,612.1	49,296.0	49,779.8	14,168.3	14,200.5	13,298.2	13,245.1	62,829.0	63,812.6	62,594.2	63,024.9

Source: IPART analysis.

Glossary



2016 Determination	Review of prices for the Water Administration Ministerial Corporation from 1 July 2016 – Determination and Final Report, June 2016 (Determination No. 2, 2016)
2016 determination period	The period from 1 July 2016 to 30 June 2020, as set in the 2016 Determination
2021 Determination	Refers to the upcoming price period – i.e. prices from 1 October 2021.
ABS	Australian Bureau of Statistics
The Basin	Murray-Darling Basin
BRC	Dumaresq-Barwon Border Rivers Commission
CSO	Community Service Obligation
DPIE	NSW Department of Planning, Industry and Environment. DPIE is one of the agencies delivering WAMC functions. Specifically, DPIE retains responsibility for setting water management policies and undertaking water planning in NSW. Formerly known as the Department of Primary Industries – Water, part of the Department of Industry, Skills and Regional Development in the 2016 Determination.
Entitlement	ML of entitlement under the <i>Water Act 1912</i> (NSW) or unit shares under the <i>Water Management Act 2000</i> (NSW).
Extractions	The taking of water from regulated rivers, unregulated rivers or groundwater sources for the purposes of irrigation, town water supply, use as an input for power stations, supplying stock and domestic users or any other use.
FCRP	Full Cost Recovery Prices
FPH	Floodplain harvesting
FTEs	Full-Time Equivalent staff
GL	Gigalitre

Government share	The share of WAMC's revenue requirement that is recovered from treasury, determined according to the 'impactor pays' principle.
IPART	The Independent Pricing and Regulatory Tribunal of NSW
IPART Act	<i>Independent Pricing and Regulatory Tribunal Act 1992 (NSW)</i>
MAC	Minimum Annual Charge
MDBA	Murray-Darling Basin Authority
MDB Agreement	Murray-Darling Basin Agreement
ML	Megalitre
MWD	Metropolitan Water Directorate
MWP	Metropolitan Water Plan
NRAR	Natural Resources Access Regulator (NRAR) is one of the agencies delivering WAMC functions. It was established in 2018 as the independent water regulator to improve compliance and enforcement arrangements and to restore community confidence in water compliance.
NRR	Notional revenue requirement
NWI	National Water Initiative
RAB	Regulatory Asset Base
SDL	Sustainable Diversion Limits
Target revenue	The revenue that IPART expects an agency to recover through prices.
Usage	Water extracted by entitlement holders.
User share	The share of WAMC's revenue requirement that is recovered from users through prices, determined on an 'impactor pays' basis.

WACC	Weighted Average Cost of Capital
WAL	Water Access Licence
WAMC	Water Administration Ministerial Corporation
Water NSW	Water NSW is the organisation responsible for managing raw water supply across NSW. Water NSW is one of the agencies delivering WAMC functions. Specifically, Water NSW is responsible for undertaking WAMC's licensing functions, providing metering services and account management services to water management customers in NSW.
Water source	This refers to whether water is extracted from a valley/area within regulated rivers, unregulated rivers or groundwater.
Water type	This refers to regulated rivers, unregulated rivers or groundwater.
WMA	Water Management Act 2000 (NSW)
WSP	Water Sharing Plan

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